



# A Conservation Agenda for Biodiversity Beyond National Jurisdiction

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LEGAL SCAN

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# A Conservation Agenda for Biodiversity Beyond National Jurisdiction

Emily Barritt and Jorge E Viñuales

## Executive Summary

The oceans are one of the most biologically diverse areas of the planet, covering around two thirds of the world's surface. They are also largely outside the control of national jurisdictions and as a consequence, a significant proportion of the world's biodiversity remains outside of national jurisdictions, amounting to about fifty per cent of the world's surface.

This has important implications for how marine biodiversity is protected and conserved. In the first place, the Convention on Biodiversity ('CBD') only applies where there is State jurisdiction. Second, although the United Nations Convention on the Law of the Sea does contain general provisions concerning the protection of the marine environment, they are too vague to offer much guidance on how to protect biodiversity beyond national jurisdictions ('BBNJ').

Accordingly, there is no single instrument that deals with BBNJ in an explicit and comprehensive way. Instead, BBNJ is governed by a fragmented patchwork of provisions of both hard and soft law, contained in uncoordinated regional and sectoral instruments. Although there are a large number of instruments addressing different aspects of marine biodiversity, the coverage they provide is inadequate: there are gaps in coverage; there is weak implementation of and compliance with existing arrangements; and the level of cooperation necessary for effective protection of marine biodiversity is difficult in areas beyond national jurisdiction ('ABNJ').

There is also a significant conceptual difficulty embed in the legal framework that makes protection and conservation of BBNJ challenging, namely the lack of an overarching approach to how BBNJ should be treated. Within the existing framework there are competing understandings of how marine biodiversity should be understood—as the

common heritage of humankind, as a common resource available to all, or as a common concern of humankind. These competing conceptions, make it difficult within the existing framework to form a coherent and cohesive approach to protecting BBNJ.

In an effort to better understand how a bespoke international legal instrument might be drafted to protect BBNJ, this legal scan does two things: 1) it surveys the international legal framework that applies to three specific threats to BBNJ, pollution arising from seabed activities; fisheries and biomass depletion; and ocean acidification; and 2) it analyses two potential regulatory techniques and how they might address these threats: area-based management techniques ('ABMT') and environmental impact assessment ('EIA'). As a conclusion to this analysis, three options, of increasing strength, are suggested for how each technique might be dealt with in the proposed treaty.

The first of the three threats considered is pollution arising from seabed activities. This threat has two main triggers: seabed mining and destructive fishing practises, such as bottom trawling. Each are dealt with in very different ways. Seabed mining is dealt with in a coherent and comprehensive manner. UNCLOS treats the seabed in ABNJ as the common heritage of humankind and provided for the creation of a dedicated institution responsible for regulating all mining activities and protecting the seabed—the International Seabed Authority ('ISA'). This regime is backed up by a number of regional approaches and a decision by the International Tribunal for the Law of the Sea. However, the ISA only regulates mining activities and does not control other seabed activities or causes of seabed pollution. Instead, the other main cause of seabed pollution, bottom trawling, is dealt with only by way of UNGA Resolutions and voluntary guidelines from the Food and Agriculture Organisation ('FAO').

Of the threats to BBNJ considered, the second, fisheries and biomass depletion is the most contentious. The principle of high seas freedom facilitates and encourages exploitation of marine living resources, making this a classic tragedy of the commons problem. The high seas are difficult to regulate and illegal fishing is rife. Additionally, the network of exclusive economic zones ('EEZ') does not take account of the fact that many fish are migratory or straddling, moving in and out of zones. Attempts have been made to address these problems. For example, the 1995 Straddling Stocks Agreement uses regional fish management organisations to help conserve straddling and migratory fish stocks. More recently the FAO has concluded the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, which equips port States with better measures to deal with illegal, unreported and unregulated fishing.

Ocean acidification ('OA'), the final threat considered in this scan, exemplifies the difficulty of addressing threats to BBNJ and is an unfortunate paradigm of the fragmentary nature of BBNJ legal protection. The scientific complexity of ocean acidification as a threat to BBNJ is such that a multitude of different legal instruments have implications for aspects of the problem, e.g. water pollution, atmospheric pollution and climate change. But the vastness of the oceans, and by implication the problem, means that these different instruments are inadequate in reducing OA. This is because



although OA manifests as a problem of the oceans, its origins are largely land-based, thus it is difficult to envisage an adequate legal response to OA that corresponds only to the oceans.

In order to address these threats, two legal approaches have been considered, area-based management techniques and environmental impact assessment. Both of these techniques are already in operation in ABNJ, but their efficacy in protecting marine biodiversity is limited—coverage is patchy and implementation, management compliance and coordination are all difficult within the current legal framework.

Area-based management techniques are already in operation in ABNJ, through sectoral instruments, regional approaches and even through voluntary initiatives. The most commonly used ABMTs are marine protection areas. Marine protection areas are designated on the basis of certain criteria and are managed so as to protect the biodiversity contained within them. There are a number of different possible designation criteria contained in a number of different treaties, for example the ecologically and biologically sensitive marine area of the CBD. Each organisation is responsible for the management of their relevant MPA, but coordination between them is difficult. Other ABMT such as marine special planning and marine conservation agreements also exist but are less common and are little disused in commentary on BBNJ.

Environmental impact assessment ('EIA') is widely accepted as a customary norm of international environmental law. However, the customary norm has a transboundary scope, and it does not set out requirements for the content of an EIA, leaving these details open to regional, sectoral and national implementation. In the marine context, EIA is emerging as an important technique for addressing a number of threats to BBNJ, particularly those that arise from seabed activities. There are however complexities for translating EIA in a context outside of state jurisdiction—identifying relevant stakeholders able to contribute to the consultation phase, for example, is challenging. EIA—and in particular strategic environmental impact assessment (SEA), which applies to policies plans and programmes—are nevertheless a crucial tool for addressing threats to BBNJ, particularly when they are used in combination with ABMT such as MPA.

In conducting this legal scan, we have endeavoured to identify the most relevant instruments relating to the governance of BBNJ and, more specifically, to the three threats discussed in the companion scientific scan. However, given the breadth of the areas covered it is likely that there will be gaps. We hope that workshop participants will be able to help: (i) consider the major existing legal frameworks set out here that address the three selected threats; (ii) build upon the scan to suggest additional, or more appropriate, options with respect to ABMT and EIA; (iii) identify other legal techniques that might address the three threats, specifically in relation to ocean acidification; (iv) consider the institutional and implementation of these various proposals, specifically as concerns the identification (or establishment) of a relevant authority as well as the provision of capacity building and finance.



# A Conservation Agenda for Biodiversity Beyond National Jurisdiction

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## 1. INTRODUCTION

Almost fifty percent of the world's surface is covered in oceans that are outside of the control of national jurisdictions. Given that the oceans are one of the most biologically diverse areas of the planet, a significant proportion of the world's biodiversity is also outside of national borders. As a result, the 1992 Convention on Biological Diversity ('CBD'), which applies only by virtue of State jurisdiction) does not provide comprehensive protection for marine biodiversity. Thus there is a significant legal gap in the protection of biodiversity in areas beyond national jurisdiction.

Areas beyond national jurisdiction ('ABNJ') are principally governed by the United Nations Law of the Sea Convention ('UNCLOS') but its terms are broad and unspecific. More detailed governance is provided on a sector, issue or geographical basis, but these regimes operate independently and there is little coordination between them. As a consequence, measures that deal with the protection and conservation BBNJ manifest

according to these discrete regimes.<sup>1</sup> Given that marine biodiversity is not constrained according to specific sectors, issues or regions, the legal regime that protects BBNJ is a fragmented and incomplete patchwork of provisions that is legally weak.

This legal scan is designed to assist in the development of a comprehensive set of overarching governance principles for BBNJ [reference UNGA Resolution]. It surveys the legal landscape, focusing on three specific threats—pollution arising from seabed activities, fisheries biomass depletion, and ocean acidification. In relation to these specific threats it analyses two legal techniques—area-based management tools (‘ABMT’) and Environmental Impact Assessment (‘EIA’). It identifies existing provisions that address these specific threats and legal techniques, highlights the various gaps in this patchwork and suggests a variety of approaches to developing the new principles.

## 2. THE SCOPE OF EXISTING LEGAL FRAMEWORKS

### 2.1. Specific regulation of marine biological diversity

#### 2.1.1. *The Convention on Biological Diversity*

The oceans beyond national jurisdiction are both dense with biological diversity and cover around fifty percent of the world’s surface. It follows therefore that BBNJ are home to a substantial proportion of the planet’s total biodiversity. In spite of this however, the CBD

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1 ‘The myriad of institutions that apply to BBNJ bear no real relationship to one another and operate independent of each other without an overarching framework to ensure structure, consistency and coherence.’ D Tladi, ‘Ocean governance: A fragmented regulatory framework,’ in P Jacquet, R Pachauri and L Tubiana (eds), *Oceans: the new frontier – A planet for life* (Teri Press 2011), 99-111.

does not unambiguously apply to areas beyond national jurisdiction.<sup>2</sup> Instead it applies only in limited circumstances according to specific articles. As a consequence, there is a significant gap in specific regulation of marine biodiversity beyond national jurisdiction.

Article 4 sets out the jurisdictional scope of the CBD and states that it applies to processes or activities under the jurisdiction and control of States that are carried out in ABNJ or areas within national jurisdiction.<sup>3</sup> The CBD therefore applies by virtue of flag state jurisdiction. There are however deeply embedded problems with this system and it open to abuse, accordingly there is no guarantee that the provisions of the CBD as they apply under Article 4 will be respected, as will be discussed in the next section.

Article 3 of the CBD acknowledges that whilst States have the ‘sovereign right to exploit their own resources pursuant to their own environmental policies,’ they nevertheless have a ‘responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.’<sup>4</sup> Accordingly there is some consideration for transboundary harm, however it is unclear who or what can claim the benefit of this responsibility.

Beyond this, the obligations placed on States in relation to BBNJ are weak obligations to ‘cooperate.’ As one commentator has said Parties ‘have no direct obligation’ relating to the conservation of biological diversity.<sup>5</sup> Article 5 establishes a duty of cooperation between Contracting Parties for the conservation and sustainable use of biological diversity in respect of ABNJ. However, there is ‘no specific methodology’ contained in the CBD as to how this cooperation may be achieved.<sup>6</sup> Article 18 also emphasises the importance of cooperation, requiring Parties to ‘promote international

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2 Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 79 (CBD).

3 One commentator has described Article 4 as being cryptic and is critical of the lack of clarity on the extent to which the convention applied to marine areas beyond national jurisdiction: T Scovazzi, ‘Negotiating Conservation and Sustainable use of Marine Biological Diversity in Areas Beyond National Jurisdiction: Prospects and Challenges’ (2015) Symposium *New Horizons in International Law* 65, 75.

4 CBD (n 2) Article 3

5 R Warner, ‘Developing New Regulatory Paradigms for the Conservation and Sustainable use of Marine Biodiversity in Areas Beyond National Jurisdiction’ in R Warner and S Kaye (eds) *Routledge Handbook of Maritime Regulation and Enforcement* (Routledge 2016) 393-5.

6 G Wright, J Rochette and E Druel, ‘Marine Protection Areas in Areas Beyond National Jurisdiction’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 273.

technical and scientific cooperation,<sup>7</sup> but it is not clear whether this scientific cooperative effort applies within or beyond national jurisdictions. Accordingly, the extent to which the CBD applies to BBNJ is both limited and vague.

This incomplete coverage for the protection of BBNJ through the CBD is problematic. This is not only for the obvious reason that it leaves an enormous proportion of the world's biodiversity beyond the scope of its protection, but also because it leaves confusion about how marine biological diversity should be conceptualised. The preamble of the CBD states that the 'conservation of biological diversity is a common concern of humankind.' However, as the CBD applies to BBNJ only in certain circumstances, it would seem that the status of BBNJ as the common concern of humankind is intermittent. Coupled with the alternative conceptions of BBNJ contained in UNCLOS, there is a desperate need for clarity as to the conceptual status of BBNJ.

### ***2.1.2. UNCLOS and relevant Regional Seas Conventions***

In the absence of an overarching environmental law framework to protect BBNJ UNCLOS does at least provide for basic protection and preservation of the marine environment.<sup>7</sup> It requires States to: 'prevent, reduce and control' marine pollution;<sup>8</sup> to protect and conserve the seabed and its resources;<sup>9</sup> and to cooperate both internationally and regionally to protect the marine environment.<sup>10</sup> However, the commitments of UNCLOS in relation to marine biodiversity are vague, and were drafted at a time when the regulation of biodiversity was in its infancy and the deep seas were believed to be empty of biodiversity. More specific commitments to protect marine biodiversity must be found in other instruments of international law.

In addition to being vague, the UNCLOS framework also takes a Jekyll and Hyde approach to marine biodiversity. This is because the UNCLOS operates a twin regime in ABNJ with a different approach taken in relation to the high seas and the Area (the seabed in ABNJ.) The Area is regarded as the common heritage of [hu]mankind, accordingly the biological diversity found there is also governed by the common heritage principle.

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7 United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS).

8 UNCLOS (n 7) Article 145(a), 194, 195, 196, 207, 208, 209, 210, 211 and 212.

9 UNCLOS (n 7) Article 145(b).

10 UNCLOS (n 7) Article 197.

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Whereas the high seas are governed by the principle of high seas freedoms, thus biodiversity in the high seas is free for sovereign states to exploit as they wish. However, as this divide is a legal fiction, it is difficult to translate these twin operating systems in terms of marine biodiversity which does not conform to the artificial division. Compounded with the ambiguity that arises in relation patchwork jurisdiction of the CBD, there is no agreed way to conceptualise marine biodiversity and thus it is not necessarily obvious which legal regime applies to it.<sup>11</sup>

In addition to the general provisions of UNCLOS, there are three regional sea treaties that apply specifically to ABNJ, and each include explicit commitments to protect marine biodiversity. The Barcelona Convention<sup>12</sup> for example, has a protocol on Specially Protected Areas and Biological Diversity<sup>13</sup> and the Convention for the Protection of the Marine Environment of the North-East Atlantic ('OSPAR Convention'),<sup>14</sup> requires Contracting Parties to 'take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area and to restore, where practicable, marine areas which have been adversely effected.'<sup>15</sup>

Given the lack of a coordinated legal approach to the protection of BBNJ the current legal regime under the law of the sea is fragmentary. One commentator has categorised this fragmentation in terms of three broad approaches: regional approaches,

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11 This issue is hotly contended amongst States attempting to find the proper legal regime that applies to marine genetic resources: D Tladi, 'Conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction: towards an implementing agreement' in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015) 260-3; T Scovazzi, 'Negotiating Conservation and Sustainable use of Marine Biological Diversity in Areas beyond National Jurisdiction: Prospects and Challenges' (n 3) 87-93.

12 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (adopted in 16 February 1976, entered into force 2 December 1978) 1102 UNTS 27 (Barcelona Convention).

13 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (adopted 10 June 1995, entered into force 12 December 1999) 2102 UNTS 203 (SPA and Biodiversity Protocol).

14 Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 Sep 1992, entered into force 25 March 1998) 2354 UNTS 67 (OSPAR Convention).

15 Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (adopted 24 November 1986, entered into force 22 August 1990) 26 ILM 38 (Nouméa Convention). This convention contains a broad commitment to protect flora and fauna, Article 14 is much less developed and there is no specific protocol or annex addressing marine biodiversity, although the protection of marine biodiversity has become a strategic priority for parties to the Convention.

sectoral approaches and species-specific approaches.<sup>16</sup> The problems with this fragmentary approach will be obvious in the discussion that follows. But one particular consequence to note now is that the governance of ABNJ is split between a number of different institutions, including the IMO, FAO, UNGA, ISA and also a number of regional conventions. Thus coordination between them in relation to BBNJ is difficult, particularly given their respective sectoral interests and jurisdictions.

This problem is exacerbated by the inadequacy of the flag state system. Flags of convenience are prevalent and the likelihood of a state ensuring that ships flying their flag are compliant with the commitments to protect biodiversity are limited. This latent problem in the UNCLOS system is important to note upfront as it has implications for much of the discussion that follows, as great reliance is placed on States to monitor and control adherence to global commitments, for example, with respect to fishing, EIA requirements and IMO environmental safety standards.<sup>17</sup>

### ***2.1.3. Limits of the specific protection of marine biological diversity***

There are four specific limitations in respect to the existing international law framework in so far as it provides specific protection for marine biodiversity. In the first place there is neither explicit nor comprehensive coverage for BBNJ in international environment law. As identified above, the CBD applies only to processes and activities under the jurisdiction or control of a State and the commitments found in UNCLOS are general and weak.

Second, as a heavy burden is placed on States to ensure that commitments are respected, the failure to adequately address the genuine link problem both for ships and for activities in the seabed, means that even where there are legal obligations to protect BBNJ there is no guarantee that those obligations will be adhered to. Thus in addition to a problem of coverage, there is also a significant problem of compliance.

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<sup>16</sup> Y Tanaka, *The International Law of the Sea* (CUP 2015, 2<sup>nd</sup> ed), 336-7.

<sup>17</sup> However, there are international efforts to address the problem, both within the IMO and the FAO and through an Advisory Opinion of ITLOS on the responsibilities and obligations of coastal and flag States to ensure sustainable fisheries management. G Wright, J Rochette, E Druel and K Gjerde, 'The Long and Winding Road Continues: Towards a New Agreement on High Seas Governance' (2015) *Study N°01/16*, IDDRI, Paris, France, 50 p., 26.



Third, there is an absence of an overarching approach of to the problem that enable States to assess the progress of measures designed to help protect BBNJ. A mechanism in a comparable international environmental instrument would be Article 14 of the Paris Climate Agreement which requires parties to ‘take stock of the implementation... to assess the collective progress towards achieving the purpose of this Agreement.’ With no general obligation to take stock, there is no mechanism for States and international organisation to be reflective about the efficacy of current approaches to protecting BBNJ.

Finally, and perhaps most importantly, there is a lack of a clear overall status for BBNJ on which to ground an approach. It can be variously regarded as the common concern of humankind, as described in the CBD, as an appropriable resource, according to the principle of high seas freedom, or as the common heritage of humankind according to the approach adopted in the Area. The lack of clarity on this point means marine resources will continue to be exploited as the more convenient position for States to take is that they are resources available for the taking.

A comprehensive study of the extent to which these different lacunae in specific regulation can be filled by non-specific international instruments is beyond the scope of this scan. In the following sections, the study analyses the scope of non-specific international instruments only as they concern three major threats to BBNJ: pollution arising from seabed activities (2.2.2); fisheries and biomass depletion (2.2.3) and ocean acidification.

## **2.2. Non-specific regulation of three threats to BBNJ**

### **2.2.1. Overview**

The aim of the following sections is to lay out and evaluate the existing legal regime that applies to three specific threats to BBNJ: pollution and harm arising from seabed activities (2.2.2); fisheries and biomass depletion (2.2.3); and ocean acidification (2.2.4). In respect of these three threats each subsection will (i) identify the relevant legal provisions; (ii) the gaps on the legal framework and (iii) the lessons that can be drawn for the development of bespoke legal instrument designed to protect BBNJ.

An important assumption implicit in the following discussion is that marine biodiversity is protected when marine environments are protected.<sup>18</sup> Thus some of the instruments referred to are developed to protect marine environments generally and not marine biodiversity specifically. Legal authority for this assumption can be found in the ITLOS decision in the *Southern Bluefin Tuna* cases: ‘the conservation of the living aspects of the sea is an element in the protection and preservation of the marine environment.’<sup>19</sup>

## 2.2.2. *Pollution arising from seabed activities*

### A. Introductory remarks

Pollution is defined in Article 1(4) of UNCLOS as: ‘the introduction by man, directly or indirectly, of substances or energy into the marine environment...which results or is likely to result’ in deleterious effects to the marine environment. Pollution to the seabed can result from a number of different activities that occur on the seabed, through mining exploration, bottom trawling and fishing using explosives. The overarching principle in relation to all such activity is found in Article 136 of UNCLOS according to which the Area (i.e. seabed in areas beyond national jurisdiction) and its resources are the ‘common heritage of [hu]mankind.’<sup>20</sup> Any activities taking place in the Area must therefore be conducted in a way that is mindful of this principle.

As with other aspects of BBNJ, harm arising from seabed activities is not dealt with from the specific vantage point of BBNJ, let alone in a holistic manner. Pollution arising from mining for minerals such as polymetallic nodules is treated differently to bottom fishing or fishing via explosives. Accordingly, the following will consider: how pollution from deep seabed mining is regulated (B); and the limited international response in respect of bottom trawling (C), before drawing out some general lessons for how best to

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18 An assumption that is shared by Yoshifumi Tanaka: Y Tanaka, ‘Principles of International Marine Environmental Law’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015), 31.

19 ‘*Southern Bluefin Tuna Cases*’ (*New Zealand v. Japan; Australia v. Japan*) (Provisional Measures, Order of 27 August 1999) ITLOS Reports 2000, 815, para 70.

20 UNCLOS (n 7) Article 136; Resources being defined by Article 133 as ‘all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules.’

regulate seabed activities to protect BBNJ (D). Section B will consider the general requirements to prevent pollution to the marine environment, these requirements will also apply in the case of bottom trawling, but will not be repeated again in section C.

It is important to note at the outset that this is an evolving legal and regulatory landscape. Scientific understanding of the deep-sea environment—particularly with respect to the seabed—is limited and thus the impact of many seabed activities is still unknown. Accordingly the regulatory approach to these activities needs to be responsive to changing scientific knowledge,<sup>21</sup> A possible legal tool to do so is the precautionary principle/ approach.

## **B. Seabed mining**

Part XII of UNCLOS sets out a general obligation on states ‘to protect and preserve the marine environment’<sup>22</sup> which applies to the entire marine environment. Alongside this duty, there are more specific obligations to ‘prevent, reduce and control pollution of the marine environment,’<sup>23</sup> including pollution arising from seabed activities both in areas subject to national jurisdiction<sup>24</sup> and in the Area.<sup>25</sup> Article 209 requires that international rules and regulations be established to ‘prevent, reduce and control pollution’ from activities in the Area<sup>26</sup> and for States to adopt laws and regulations to the same effect.<sup>27</sup> Enforcement of these provisions is governed by Part XI.<sup>28</sup>

The conduct of States in relation to the Area is governed by Articles 136-149, Section 2, Part XI, UNCLOS. As stated before, the overriding principle in relation to the Area, and the resources derived from it, is that they are a common heritage of

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21 M Lodge, ‘Protecting the marine environment of the deep seabed’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015), 153.

22 UNCLOS (n 7) Article 192, Part XII

23 UNCLOS (n 7) Article 194, this includes specific requirements not to transfer hazards or pollution (Article 195) or to reduce pollution by the introduction of technologies or to introduce alien species (Article 196).

24 UNCLOS (n 7) Article 208

25 UNCLOS (n 7) Article 209

26 UNCLOS (n 7) Article 209(1)

27 UNCLOS (n 7) Article 209(2)

28 UNCLOS (n 7) Article 215.

humankind.<sup>29</sup> Thus, States are not able to claim or exercise sovereignty over the Area,<sup>30</sup> are obliged to maintain peace and security in relation to it<sup>31</sup> and should ensure the protection of both human life<sup>32</sup> and the marine environment in the Area.<sup>33</sup>

As the Area cannot be brought under State jurisdiction, it is subject to a supranational management regime administered by the International Seabed Authority ('ISA').<sup>34</sup> The ISA is required to adopt rules, regulations and procedures that prevent, reduce and control pollution and other hazards to the marine environment, and to ensure 'protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.'<sup>35</sup> These requirements are reiterated in the 1994 Implementation Agreement.<sup>36</sup> In addition – and to some extent in contrast – to these provisions to protect marine environment, there is a parallel ambition to ensure that the produce of the Area be used to 'foster healthy development of the world economy.'<sup>37</sup>

According to Article 162(2)(a), the ISA has jurisdiction to 'supervise and coordinate the implementation of the provisions of Part XI on all questions and matters within the competence of the ISA and invite the attention of the UN General Assembly to cases of non-compliance.' The rules, regulations and procedures to regulate activity in relation to the Area are issued by the law-making body of the ISA, the Council<sup>38</sup> with assistance from the Legal and Technical Commission of the ISA ('LTC'). Collectively these rules and regulations are referred to as the Mining Code.

The Mining Code is still a work in progress and there are currently no regulations concerning the *exploitation* of mineral resources.<sup>39</sup> Instead, there are three sets of regulations<sup>40</sup> that govern *prospecting*<sup>41</sup> and *exploration*<sup>42</sup> in the Area (collectively 'the ISA

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29 UNCLOS (n 7) Article 136, 140, 143, 144, 149.

30 UNCLOS (n 7) Article 137, 147(2)(e).

31 UNCLOS (n 7) Article 138, 141, 142, 143, 147(2)(d), Section 2 and Articles 156-185, Section 4.

32 UNCLOS (n 7) Article 146, 147(2)(c).

33 UNCLOS (n 7) Article 145.

34 UNCLOS (n 7) Article 137(2), 140(2), 134(2) and (3), 144, 145, 146, 147(2)(a); [ ]

35 UNCLOS (n 7) Article 145.

36 UNCLOS (n 7) Part XI Section 1(5)(g) and (7) of Annex, see also Section 1(5)(k).

37 UNCLOS (n 7) Article 150 in particular and Articles 150-155 Section 3 more generally.

38 The Council is supported in its law making responsibilities by the Legal and Technical Commission of the ISA.

Regulations’).<sup>43</sup> The ISA Regulations echo each other in terms of their scope, format and content and differ only in so far as they relate to different minerals in different geographical and special areas.<sup>44</sup> They impose complimentary environmental obligations on the three key actors involved in activities in the Area—the ISA itself, sponsoring States and on contractors carrying out activities in the Area—and can be categorised in terms of three broad commitments.

First, they reiterate the regulatory responsibilities of the ISA contained in Article 145 of UNCLOS and provide for the possibility of further regulations and rules being adopted in order to respond to emerging environmental protection and preservation needs.

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- 39 Currently, the ISA is developing Regulations for exploitation of mineral resources in the Area. It issued a consultation document to members of the Authority and all stakeholders on a Draft Framework for the Regulation of Exploitation Activities in March 2015. In July 2015, the Legal and Technical Commission provided a Draft Framework and Action Plan and a summary of priority action areas to the Council for consideration, the list of priority action areas was endorsed by the Council. In the context of this consultation, the Netherlands has submitted a document to the Authority on addressing serious harm to the marine environment, which is under review by the LTC. The Council also called for broader stakeholder participation, including that of Member States, to support and engage with the Authority so that specific views and opinions might be addressed at this stage of development and requested the LTC to continue its work on exploitation regulations as a matter of priority in 2016. An initial draft will be presented to the Council in July 2016. See: <<https://www.isa.org.jm/files/documents/EN/Survey/Report-2015.pdf>>; <[https://www.isa.org.jm/files/documents/EN/OffDocs/Rev\\_RegFramework\\_ActionPlan\\_14072015.pdf](https://www.isa.org.jm/files/documents/EN/OffDocs/Rev_RegFramework_ActionPlan_14072015.pdf)>; <[https://www.isa.org.jm/sites/default/files/files/documents/isba-21c-16\\_5.pdf](https://www.isa.org.jm/sites/default/files/files/documents/isba-21c-16_5.pdf)>; and <[https://www.isa.org.jm/sites/default/files/files/documents/isba-21c-16\\_5.pdf](https://www.isa.org.jm/sites/default/files/files/documents/isba-21c-16_5.pdf)> accessed 23 February 2016
- 40 Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (adopted 13 July 2000) amended in 2013 and 2014 (Nodules Regulations); Regulations on Prospecting and Exploration for Polymetallic Sulphides in the Area (adopted 7 May 2010) ISBA/16/A/12/Rev.1 (Sulphide Regulations) amended in 2013 and 2014; and Regulations on Prospecting and Exploration for Cobalt-Rich Crusts (adopted 27 July 2012) amended in 2013 (Cobalt-Rich Crust Regulations).
- 41 Prospecting is defined as the ‘search for deposits including estimation of the sizes and distribution of deposits and their economic values, without any exclusive rights.’
- 42 Exploration is defined as ‘searching for deposits in the Area with exclusive rights, the analysis of such deposits and the use and resting of recovery systems and the carrying out of studies of the environmental, technical, economic, commercial and other appropriate factors that must be taken into account in exploration.’
- 43 The shorthand is borrowed from: M Lodge (n 21) 157.

Second, they institute an obligation on the ISA and sponsoring States to apply the precautionary approach, an obligation that is supplemented by recommendations made by the LTC.<sup>45</sup> Third, they impose a responsibility on contractors to ‘take necessarily measures to prevent, reduce and control pollution and other hazards to the marine environment arising from [their] activities in the Area.’ This responsibility includes the need to follow a precautionary approach, to apply best environmental practices, to submit an EIA of their proposed activities and to monitor and report on their activities once they commence.<sup>46</sup>

The approach to protection of the marine environment taken by the ISA Regulations can thus broadly be described as both precautionary and responsive. It balances the need to take a precautionary approach to activities in the Area with an ‘incremental approach to regulation’ that is based on information gathering during the early stages of exploration about the impacts of various activities.<sup>47</sup>

The importance of this approach for the operation of these Regulations was underscored by ITLOS in its Advisory Opinion: Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area in 2011.<sup>48</sup> The Advisory Opinion found that sponsoring States had ‘due diligence’ obligations to ensure that Contractors complied with both the requirements of UNCLOS and the ISA Regulations when carrying out activities in the Area.<sup>49</sup> Bound up in this due diligence requirement was both the requirement to adopt a precautionary approach<sup>50</sup> and the requirement to conduct an EIA, both of which the tribunal described as being general obligations under customary law.<sup>51</sup>

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44 Ibid, 156.

45 Nodules Regulations (n 40) Regulation 31(1); Sulphides and Crusts Regulations (n 40) Regulation 33(3).

46 ISA Recommendation for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area (26 July 2013) ISBA/19/LTC/8.

47 M Lodge (n 21) 158.

48 ‘*Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area*’ (Advisory Opinion), Order of 1 February 2011), ITLOS Reports 17.

49 The same standard was applied to both developed and developing states to prevent the emergence of ‘sponsoring States “of convenience”’ for entities wishing to carry out mining activities in States with less burdensome regulations and control: Ibid, para 159.

50 Ibid, para 135.

51 Ibid, para 153.

Although the regime implemented by the ISA in relation to seabed activities is well developed, there are still gaps in the protection it provides to BBNJ. Significantly, the absence of a code for the exploitation phase of seabed mining—although a relevant code is expected imminently. Another gap, identified by one commentator, is that there is no ‘collaborative mechanism for monitoring and enforcing compliance involving exploration contractors and ISA representatives.’<sup>52</sup>

Alongside this international regime, there exist a number of regional approaches that have implications for the protection of the marine environment in ABNJ. The applicability of the 1959 Antarctic Treaty and its associated protocols is uncertain in relation to marine areas, thus it may be that the applicable regime for the seabed in the Antarctic is in fact that set out under UNCLOS.<sup>53</sup> Even if applicable, the Antarctic Treaty does not itself contain provisions relating directly to the need to prevent pollution from seabed activities, instead it emphasises the need to ensure that the territory remains peaceful and the site of internationally cooperative scientific research. It echoes the tenor of UNCLOS by emphasising in the preamble that the Treaty is intended to ensure that the Antarctic is used for the benefit of all humankind.

The Protocol on Environmental Protection (Madrid Protocol) does contain more specific provisions that relate to protection of the Antarctic environment,<sup>54</sup> designating it as a Natural Reserve.<sup>55</sup> Most significantly, Article 7 prohibits ‘mineral resource activities’ (mining) except for those undertaken for scientific research.<sup>56</sup> Although the Protocol does not specify whether this ban applies to the continental shelf adjacent to land areas in the Antarctic Treaty,<sup>57</sup> the fact that the Protocol defines the entire Antarctic area as a natural reserve strongly suggests that the ban applies equally to the seabed.<sup>58</sup> More generally, Article 3 places a general obligation on States to protect the ‘intrinsic value of Antarctica,’

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52 R Warner, *Conserving marine biodiversity in the global marine commons: co-evolution and interaction with the Law of the Sea* (2014) 1 *Frontiers in Marine Science* 1.

53 There are competing accounts for how the marine environment of the Antarctic area should be understood: as being subject to the freedom of the high seas or the collective jurisdiction of the Antarctic Treaty Consultative Parties. For further discussion of the geographical scope of the Treaty see: R Lefeber, ‘Marine Scientific Research in the Antarctic Treaty System’ in Erik J Molenaar, Alex G Oude Elferink and Donald R Rothwell (eds) *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes* (Martinus Nijhoff Publishers 2013), 327-331.

54 The Protocol on Environmental Protection to the Antarctic Treaty (adopted 4 October 1991, entered into force 14 January 1998) 30 ILM 1455 (Madrid Protocol).

55 *Ibid.*, Article 2.

requiring States, *inter alia* to ensure that activities in the Antarctic Treaty Area are conducted in a way that avoids adverse effects on water quality,<sup>59</sup> or significant changes to the marine environment.<sup>60</sup> It also requires States carrying out activities in the area to conduct environmental impact assessment before embarking on their activities<sup>61</sup> and to regularly monitor such activities.<sup>62</sup>

In support of these general environmental obligations the Protocol is supplemented by six Annexes which set out specific standards to govern the behaviour of States operating in the Antarctic.<sup>63</sup> Annex IV which relates to marine pollution does not address specifically marine pollution from seabed activities, however. Article 4 of the Annex prohibits the discharge of noxious liquid substances and any other chemical or other substances in quantities or concentrations that are harmful to the marine environment and thus this might apply to sedimentary plumes. Annex V of the Protocol enables certain sites, including marine areas, to be designated as either an Antarctic Specially Protected Area<sup>64</sup> or an Antarctic Specially Managed Area,<sup>65</sup> which is a relevant area-based management approach to BBNJ. Designating an area as an ASPA means it can be protected from direct human interference. Annex II relates to Antarctic flora and fauna, but does not apply to the marine environment.<sup>66</sup>

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56 *Ibid*, Article 7, this article superseded the Convention on the Regulation of Antarctic Mineral Resource Activities (adopted 2 June 1988) 27 ILM 869 (CRAMRA) which according to Article 5 was to ‘regulate Antarctic mineral resource activities which take place on the continent of Antarctica and all Antarctic islands, including all ice-shelves, south of 60° south latitude and in the seabed and subsoil of adjacent offshore areas up to the deep seabed.’

57 R Lefeber (n 53) 331.

58 Madrid Protocol (n 55) Article 2.

59 Madrid Protocol (n 55) Annex VI, Article 3(2)(b)(ii).

60 Madrid Protocol (n 55) Annex VI, Article 3(2)(b)(iii).

61 Madrid Protocol (n 55) Annex VI, Article 3(2)(c).

62 Madrid Protocol (n 55) Annex, VI, Article 3(2)(d); Article 8; Annex I.

63 Madrid Protocol (n 55) Annex VI, Article 9.

64 Madrid Protocol (n 55) Annex V, Article 3

65 Madrid Protocol (n 55) Annex V, Article 4.

66 References made specifically to ‘freshwater’ species in the definitions section of the Annex, Article 1. For further discussion of this see: R Lefeber (n 54) 330, especially (n 48) and 336.



In addition to the regime that covers the Antarctic there are eight regional treaties under the UNEP programme that contain provisions relating to pollution from activities in the seabed. All broadly require States to take appropriate measures to ‘prevent,’ ‘reduce,’ ‘abate’ and ‘control’ pollution resulting directly or indirectly from exploration and exploitation of the sea-bed and its subsoil. Of these eight, three have a specific mandate in ABNJ:<sup>67</sup> the Mediterranean through the Barcelona Convention,<sup>68</sup> the North-East Atlantic through the OSPAR Convention<sup>69</sup> and the South Pacific through the Nouméa Convention.<sup>70</sup>

### **C. Bottom trawling**

Bottom trawling causes physical harm to the seabed and leads to loss of biodiversity through its indiscriminate approach to fishing. It also causes pollution to the marine environment by displacing sediment and causes pollutants to mix into plankton and move into the food chain creating harmful algae blooms or oxygen-deficient dead zones. Given that pollution as well as physical harm and biodiversity loss can result from bottom trawling, the general provisions identified in the previous section also apply in this context. However by contrast to the fully articulated regime that applies to seabed mining, the regulation of bottom trawling (and other forms of seabed fishing such as fishing by explosives) as a polluting activity is limited.<sup>71</sup>

In response to the problem of bottom trawling the UNGA has adopted a number of resolutions intended to address these fishing practices. Under UN Resolution 59/25 on the ‘Regional Fisheries Management Organisations (RFMO) and High Seas’, fishing States must take action to protect vulnerable marine environments (VMEs), which included tackling bottom trawling in ABNJ. In light of repeated failures on the part of States and RFMOs to respond to the resolution,<sup>72</sup> the UNGA adopted Resolution 61/105 which offered States a compromise whereby they were permitted to engage in bottom trawling

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67 J Rocette and G Wright, ‘Developing area-based management tools in areas beyond national jurisdiction: possible scenarios for the Western Indian Ocean’ (2015) IDDR, 8.

68 Barcelona Convention (n 12).

69 OSPAR Convention (n 14).

70 Nouméa Convention (n 15).

71 R Churchill, ‘The LOSC regime for the protection of the marine environment—fit for the twenty-first century?’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015), 20-1.

provided that they comply with certain requirements set out at paragraph 38.<sup>73</sup> Paragraph 38, requires the RFMO to take a number of prescribed measures in accordance with the precautionary principle, an ecosystems approach and international law. Such measures included the requirement to conduct impact assessment in relation to vulnerable marine ecosystems ('VMEs') and to eliminate bottom trawling in respect of VMEs such as cold-water corals unless conservation or management measures can be adopted to prevent adverse effects. Alongside this, in 2008 the Food and Agriculture Organisation (FAO) adopted the 'International Guidelines for the Management of the High Seas', a voluntary instrument which provides guidance to States and the RFMO on the management of deep-sea fishing in the high seas.

In 2009 the UNGA determined that this compromise resolution had been inadequately implemented and adopted a further resolution, containing additional provisions.<sup>74</sup> Resolution 64/72 emphasises the importance of impact assessment of bottom fisheries and calls for conservation measures to be adopted to ensure the sustainability of and, where necessary, to restore deep-sea fish stocks. Alongside this the CBD has also adopted decisions calling on high seas shipping nations to implement Resolution 64/72 at their 10<sup>th</sup> meeting of the parties in October 2010.

However, as it appears from the preceding discussion, the international response to bottom trawling is limited and there is no comparable regime to that of pollution arising from mining activities. The focus of the international response to bottom trawling is largely on the impact on fish stocks and important biodiversity such as coral reefs. These resolutions do not explicitly contemplate the wider pollution problem that arises from bottom trawling, focusing instead on the direct harm caused to the seabed.

#### **D. Lessons from the existing regime**

The first lesson that can be drawn from this scan is the importance of having a regulatory authority that has competence to regulate seabed activities. The treatment of the seabed as a site of mining as compared to its regulation as a site for bottom trawling is stark. Mining activities are thoughtfully and carefully regulated by the ISA, whereas bottom

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72 However, a 2006 report from the UN Secretary General highlighted that little had been done in response to this resolution. Consequently, the FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas (adopted 19 August 2008) were adopted.

73 UNGA Res 61/72 (8 December 2006) A/61/72.

74 UNGA Res 64/72 (4 December 2009) A/RES/64/72, in particular paragraphs 119-120.

trawling, which is left to regional fisheries bodies, is poorly controlled. There is a compelling case therefore for the ISA to regulate all seabed activities. One commentator has argued that Article 145 of UNCLOS empowers the ISA with a general competence to protect the marine environment that is not limited to mining activities.<sup>75</sup> Given the role of the ISA in managing mining activities, there is a case for the ISA to also be tasked with governance of all seabed activities including bottom trawling. Thus the ISA would be able to build a comprehensive picture of these activities and their impacts on the marine environment and to respond to them in an integrated manner.

Second, there is a need for close collaboration between scientific knowledge and regulation. This lesson is of course true of all threats to BBNJ, but is particularly important in relation to the deep seabed. For technological and cost reasons the seabed remains underexplored and scientific knowledge is limited. The importance placed on the precautionary approach in this context could go some way to overcoming this problem, but it is equally important that those governing activities in the seabed are responsive to developing scientific knowledge.

Third, from a regulatory standpoint, there is a notable advantage to the common heritage approach, as compared to the principle of freedom of the High Seas, namely that the activities of private actors can be regulated directly by the ISA as well as by sponsoring States. The powers of inspection and monitoring that are granted to the ISA enables it to directly target contractors—rather than relying on oversight by sponsoring States which may or may not have the will or capacity to enforce such obligations—and to be more responsive to potential harm to the marine environment.

Finally, the regulation of seabed activities, particularly in relation to mining, is heavily reliant on the two legal techniques that will be considered below—EIA and area-based management. Accordingly, the protection of marine biodiversity in the Area will require a developed and *coordinated* approach in the use of these techniques, which could be effectively done in a new instrument on BBNJ.

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75 T Scovazzi, 'Negotiating Conservation and Sustainable use of Marine Biological Diversity in Areas Beyond National Jurisdiction: Prospects and Challenges' (n 3) 90.

### 2.2.3. Fisheries and Biomass Depletion

#### A. Introductory remarks

Advancements in technology have led to increasingly large fishing fleets and unprecedented fish catch sizes, which have caused an acute drop in fish numbers. Given years of overfishing and mismanagement, oceans are now facing complete marine wildlife depletion.<sup>76</sup> Even though important conservation efforts have been made, attempts to resolve the problem of overfishing have not yet been successful. Part of the problem lies in the shortcomings of international instruments that regulate this issue. Presently, there are several international and regional agreements as well as soft law provisions that try to curb the rapid losses in fish stocks.

#### B. Fisheries depletion

At the international level, UNCLOS established exclusive economic zone ('EEZ') of up to 200 nautical miles inside which coastal States have exclusive control over commercial fishing regulation.<sup>77</sup> Within this zone, States are entitled to manage fish stocks by setting fishing quotas and enforcing other regulatory measures with the aim of preserving their ecosystems. However, UNCLOS has not delivered the expected outcomes. As highlighted by one commentator, UNCLOS contains two main problems: (i) the high seas remain unregulated under UNCLOS and there is no way for countries to enforce conservation laws or regulations against vessels fishing illegally;<sup>78</sup> (ii) the commitment for a 200-mile EEZ failed to recognise that many fish are migratory and fish stocks move in and out of regulated zones.

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76 A Dieter, 'From Harbor to High Seas: an argument for rethinking fishery management systems and multinational fishing treaties' (2014) 32Wisconsin International Law Journal 725, 725.

77 UNCLOS (n 7) Article 57.

78 A Dieter, (n 76) 725.

## A CONSERVATION AGENDA FOR BIODIVERSITY BEYOND NATIONAL JURISDICTION

These deficiencies led to the conclusion of the 1995 Straddling Stocks Agreement.<sup>79</sup> It uses RFMOs as the main vehicle for conservation of straddling and migratory fish stocks.<sup>80</sup> The agreement establishes an enforcement procedure through which vessels and officials from regional and sub-regional fishery authorities can board and inspect other flag nation's ships in the fishing area in order to ensure compliance with local rules. However, the lack of active implementation has rendered it a dead letter, rather than an actual advance for fishing regulation.<sup>81</sup> Instead, States frequently ignore complaints of overfishing or illegal fishing. When patrol vessels do investigate evidence related to those activities, they regularly overlook the violations instead of enforcing appropriate conservation measures.<sup>82</sup>

An important example is the Antarctic. The continent is a common area governed by the member States with consultative status on the Antarctic Treaty. Antarctic fisheries are regulated by the 1980 Convention on the Conservation of Antarctic Marine Living Resources ('CCAMLR'). The Convention's implementation is monitored by an international Commission that manages all marine resources in the area (except whales and seals as they are subject to specific treaties). Catch limits are agreed using rules that seek to ensure the sustainability of the fisheries. Nevertheless, the expanding harvesting of krill is currently a matter of concern.

Further, although the Madrid Protocol was signed in order to create an advanced system of environmental protection, designating Antarctica as a natural reserve, it does not provide any fishing regulations. The only reference concerns marine pollution caused by synthetic fishing nets, whose disposal into the sea is prohibited.<sup>83</sup>

In the Southern Ocean, there are islands subject to the sovereignty of several States. These States have sovereign rights to explore natural resources in their surrounding EEZ. In all the remaining Antarctic marine areas, the high seas rules contained in the UNCLOS

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79 The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 December 1982 and entered into force in 11 December 2001) 2167 UNTS 3.

80 B Glass-O'Shea, 'Watery Grave: Why International and Domestic Lawmakers need to do More to Protect Oceanic Species from Extinction' (2011) 17 West Northwest 102, 113.

81 A Dieter (n 76) 733.

82 C. Clover, *The End of the Line: How overfishing is changing the World and what we eat* (The New Press, 2006), 170.

83 Madrid Protocol (n 54) Annex IV, Article 5.

are applied. The application of unmitigated EEZ rules, however, may constitute a threat to the marine environment of Antarctica in the long term. The relation between the UNCLOS regime and the Antarctic Treaty System must therefore be further harmonised or carefully considered in case of adoption of a new international instrument.

Moreover, no Ecologically or Biologically Significant Marine Areas (EBSA) as defined by the CBD have been identified to date in Antarctica.<sup>84</sup> Scientific studies should be encouraged to verify the applicability of this instrument in the region. In addition, in 1994 the International Whaling Commission (IWC) banned all types of commercial whaling in the Southern Ocean around Antarctica and declared it a whale sanctuary.<sup>85</sup> However, Canada and other States withdrew from the Whaling Convention, thus curtailing its reach.

At the regional level, there is a plethora of international bodies established to curb fisheries depletion as well as to manage and protect fish stocks. The activity of such organs is frequently divided into those focused on regional areas and those that target specific species.<sup>86</sup> They are responsible for evaluating the status of fish stocks of commercial value, limiting ships and catch quantities, regulating technology employed and inspecting fisheries activity in their jurisdiction.

However, once again the effectiveness of these organisations is hampered in a number of ways. For instance, as membership is voluntary decisions and norms are binding for members only, while its decisions—and any punitive measure arising from the disregard for its norms—are enforceable only in relation to the nations party to the regional body, which are already willing to comply. Several organisations even allow for partial compliance, allowing countries to opt out of some unfavourable regulations. Furthermore, these organisations can be biased towards interests of some of their more powerful members and have closed-doors decision procedures. This can lead to an emphasis on the protection to a limited number of species that are usually more economically relevant instead of protecting marine biodiversity as a whole.

Further, the weak coordination between closely-related bodies undermines the effectiveness of the adopted policies. This is especially problematic given the migratory nature of many of the species and the lack of reliable data due to illegal, unregulated, and

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84 For further discussion, see Section 3.3.

85 International Whaling Commission, Whale Sanctuaries, available at: <<https://iwc.int/sanctuaries>> accessed 1 February 2016.

86 Since 1948, FAO has recognized a plethora of regional fisheries bodies established across the world. A throughout list can be found at FAO website: <<http://www.fao.org/fishery/rfb/en>> accessed 29 April 2016.

unreported (IUU) fishing. The regulatory differences in near-but-separate regions may render strategies to contain and sanction illegal fishing useless. Funding is also a key factor, since some areas are well-maintained, whereas others are scarcely furnished with means to manage fisheries and protect fish stocks.

At the soft law level, the 1995 FAO Code of Conduct for Responsible Fisheries provides an ethical parameter for the management of fisheries and aquaculture resources within national jurisdiction and high seas, together with a handful of binding rules added by the FAO Compliance Agreement. The FAO Code of Conduct sets out basic guidelines consistent with the UN 1995 Straddling Stocks Agreement. There are however two main shortcomings in the recognition of those standards by fisheries organisations, challenging the effectiveness of provisions intending to protect fisheries stocks. First, there is a tendency to consent to high overall levels of catch that, in combination with IUU fishing, threatens the sustainability of fisheries stocks.<sup>87</sup> Second, the lack of regulation covering the ecosystem as a whole and not only the commercial species ignores the provisions related to conservation of species belonging to the same ecosystem.<sup>88</sup> Both defects pose a challenge to conservation. Meanwhile, approximately 40% of the States representing the global catch are violating primary provisions contained in the Code, including those related to the responsibility over the vessels using their flags and the fishing vessels global report.

### **C. Biomass depletion**

The term biomass is pluri-semantic. It can refer to any organic matter derived from living or recently-deceased organisms. At present there is no international or regional treaty that directly addresses the protection and management of ocean biomass in this sense, let alone biomass removal or fish biomass removal. It can also be used to refer to the total amount of marine fisheries resources. As stated above, the most important international treaty regarding fisheries management is UNCLOS, the flaws of which have already been explored.<sup>89</sup> In addition, the 1953 Convention on Fishing and Conservation of the Living Resources of the High Seas precedes and complements UNCLOS.<sup>90</sup>

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87 This misses provisions such as Articles 7.1.1 and 7.5.4 of the 1995 FAO Code (n 79).

88 Such as Articles 6.2, 6.6, and 7.2.3 of the 1995 FAO Code (n 79).

89 Section B.

90 Convention on Fishing and Conservation of the Living Resources of the High Seas (adopted 29 April 1958, entered into force 20 March 1966) 559 UNTS 285.

Fisheries biomass has decreased over the last century, which stresses the importance of an international regime to solve this problem. The 1953 Convention, however, solely addresses the right of States to pursue fishing in high seas, the right of coastal countries to adopt measures or be involved in the fisheries conservation efforts in the area adjacent to their domains and the duty of States competing for the same fisheries resources to cooperate. No clear and peremptory prohibitions are prescribed and the general duty of preservation seems to be an obligation on a “best-effort basis”. Within the scope of the treaty, multilateral cooperation in case of competing interests over the same stocks or maritime resources is delineated by negotiations among Parties, which potentially means that no other interest, such as the total stock of these resources or the sustainability of the exploitation in a global sense, might be contemplated.

As far as soft law biomass standards are concerned, the plans of action elaborated within the framework of the 1995 FAO Code of Conduct are noteworthy. The first one is the 1998 International Plan of Action for the Management of Fishing Capacity, which addresses the problem of excessive fishing capacity, which in turn are linked to overfishing and the decline of marine fisheries resources.<sup>91</sup> The goal of the plan at the time was for States to achieve efficient and transparent management of fishing capacity, preferably by 2003, but no later than 2005.<sup>92</sup> With regards to its implementation, four major strategies were established, involving the conduct of global, regional and national assessments of capacity, the preparation and execution of national plans to manage fishing capacity, the strengthening of regional fisheries organizations, and the adoption of urgent measures for major transboundary, straddling, highly migratory and high seas fisheries.<sup>93</sup>

The second relevant instrument is the 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (‘IPOA-IUU’). The document is rather detailed as it seeks to provide States with effective measures to tackle the issue of IUU fishing. According to the Plan, States should adopt legislation involving all aspects of IUU fishing and put into practice effective monitoring measures such as keeping records of all vessels and their current owners and operators authorized to undertake fishing within their jurisdiction. It also emphasises the importance of the role of RFMOs. Several flag State responsibilities are established, as well as guidelines that should

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91 FAO International Plan of Action for the Management of Fishing Capacity (1998)

<ftp://ftp.fao.org/docrep/fao/006/x3170e/X3170E00.pdf> accessed 30 April 2016, Article 1.

92 Ibid, Article 7

93 Ibid, Article 8.



be observed in coastal areas and ports. In addition to these, trade-related measures should be considered so as to reduce or eliminate the economic incentive for vessels to engage in IUU fishing.

In 2009, the FAO concluded the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing ('PSMA'). This agreement sets out minimum standards for port states to adopt in order to 'prevent, deter and eliminate' IUU. For example, Port states have the right to inspect vessels and can deny a vessel use of its port to unload fish and access services if there is sufficient evidence that a vessel seeking port has engaged in IUU.<sup>94</sup> Port state measures are described in the preamble as 'providing a powerful and cost-effective means of preventing deterring and eliminating' IUU,<sup>95</sup> and accordingly these measures contribute to the 'long-term conservation and sustainable use of living marine resources and marine ecosystems.'<sup>96</sup> The PSMA has a global scope, but is yet to receive the required number of ratifications necessary, although it has been ratified by the United States.<sup>97</sup> A number of regional fisheries have already adopted mandatory certification requirements.<sup>98</sup> For example the CCAMLR Catch Documentation Scheme for *Dissostichus* spp. (toothfish) which is binding on all members.<sup>99</sup>

The problem of biomass removal 'requires cooperation across jurisdictional zones by a multitude of different actors with various economic and social interests', as it consists of a matter of regulation of collective goods.<sup>100</sup> The Code of Conduct 1995 and its related instruments fill some gaps of hard law fisheries instruments, such as UNCLOS and the UN

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94 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (adopted 22 November 2009) [2010] ARNIF 41 (PSMA), Article 9(4); D Doulman and J Swan, 'A guide to the background and implementation of the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' (2012) FAO Fisheries and Aquaculture Circular. N° 1074.

95 Ibid, Preamble.

96 Article 2

97 List of participants to the Agreement on Port State Measure to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (29 March 2016)

<[http://www.fao.org/fileadmin/user\\_upload/legal/docs/037s-e.pdf](http://www.fao.org/fileadmin/user_upload/legal/docs/037s-e.pdf)> accessed 2 May 2016.

98 Y Tanaka, *The International Law of the Sea* (n 16) 262.

99 Ibid.

100 J Friedrich, 'Legal Challenges of Nonbinding Instruments: The Case of the FAO Code of Conduct for Responsible Fisheries' (2008) 9 German Law Journal 1539.

1995 Fish Stocks Agreement. Another advantage is that they are not exclusively directed towards FAO member States, but also to organisations, both governmental and non-governmental and even persons involved with the management of fisheries.<sup>101</sup> Therefore, the Code of Conduct 1995 establishes ‘the only framework for fisheries governance that integrates all actors involved in such activities worldwide.’<sup>102</sup>

## **D. Lessons from the existing legal framework**

Even though there are bespoke legal instruments designed to prevent fisheries and biomass depletion, there are significant enforcement problems, particularly in relation to the UNCLOS principle of freedom of the high seas and the latent difficulties with flag State jurisdiction. Although there are some attempts to address these problems, through measures such as the PSMA, the absence of an adequate compliance mechanism means that States are free to ignore their fisheries obligations. Unless and until the problem of compliance is properly dealt with, the introduction of additional targets and measures intended to reduce fisheries depletion will be ineffective. Any new instrument must therefore include provision for compliance measures.

Coordination and cooperation between the international, regional, national regimes will be crucial to the tacking the problem of fisheries depletion. This is part an issue of sharing information on IUU, but it is also about sharing scientific information in order to develop better understanding the behaviours of migratory fish, so as to ensure that the transboundary impacts of fisheries are fully understood and to share information on IUU.

Finally, and critically from the standpoint of BBNJ, the depletion of fish stocks will likely have impacts on other aspects of the marine ecosystem and so the harm is not limited to the particular fish stock. Fisheries and biomass depletion must be looked at in terms of an ecosystem approach to ensure that incidental consequences for biodiversity are accounted for, in addition to the direct reduction of fish species and biomass.

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101 Ibid, 1548.

102 Ibid, 1548.

## 2.2.4. Ocean Acidification

### A. Introductory remarks

Ocean acidification ('OA') is a symptom of increasing anthropogenic atmospheric CO<sub>2</sub> levels. Oceans are the main sink of CO<sub>2</sub>, which once absorbed reacts with the water to form carbonic acid (H<sub>2</sub>CO<sub>3</sub>) thus increasing the acidity of the oceans. Although this is a naturally occurring phenomenon, the unprecedented levels of atmospheric CO<sub>2</sub> have become such that the decreasing pH of the oceans is starting to have a significant detrimental impact on marine biodiversity. OA damages coral reefs and weakens the exoskeletons of calcifying organisms such as krill which, as a result of diminishing krill population, has a knock on effect on predator species such as whales and salmon. In addition to making oceans uninhabitable and destabilising food chains, some of the measures that may be potentially adopted to address OA cause ancillary impacts on marine biodiversity. For example, ocean fertilisation, which encourages the growth of calcifying organisms so that they can absorb more H<sub>2</sub>CO<sub>3</sub>, has been found to substantially disrupt the composition of marine biodiversity.

OA has only very recent acknowledgement in international law and, as a result, there has not been a concerted legal response to it.<sup>103</sup> Further, OA transverses a number of different regulatory issues—marine pollution, atmospheric pollution, biodiversity and climate change—thus, international legal responses to it are 'not the exclusive preserve of any particular regime.'<sup>104</sup> In international environmental law, OA is governed by a 'polycentric order' composed of a complex of multilateral environmental legal instruments that relate to climate change, marine pollution, atmospheric pollution and biodiversity, in both global and regional contexts.<sup>105</sup>

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103 OA was first recognised formally by the UNGA in 2007 in the preamble to UNGA resolution on 'Oceans and the law of the sea' which expressed 'concern over the projected adverse effects of anthropogenic and natural climate change and ocean acidification on the marine environment and marine biodiversity.' UNGA Res 62/215 (22 December 2007) A/RES/62/215

104 Y Downing, 'Ocean acidification and protection under international law from negative effects: a burning issue amongst a sea of regimes?' (2013) 2 Cambridge Journal of International and Comparative Law 242, 243.

105 K Rakhyun, 'Is a new multilateral environmental agreement on ocean acidification necessary?' (2012) 3 Review of European Community & International Environmental Law 243, 252.

Fortunately, the broad-brush approach of UNCLOS means that, although OA was not a part of the dialogue at the time of signing, UNCLOS is still capable of encompassing the issue. As discussed above, UNCLOS imposes an obligation on States ‘to protect and preserve the marine environment’<sup>106</sup> and to ‘prevent, reduce and control pollution of the marine environment.’<sup>107</sup> Thus, if OA is regarded as a consequence of pollution of the marine environment from anthropogenic CO<sub>2</sub>, there is an obligation under UNCLOS to address OA. However, given that UNCLOS is so general, it can do no more than provide an ‘umbrella’ for more targeted agreements.<sup>108</sup> UNCLOS is not the only multilateral agreement that deals with OA in this vague way, chief among them the United Nations Framework Convention on Climate Change (UNFCCC).<sup>109</sup>

What follows is an account of the international environmental law instruments that apply to OA (B to E) and a discussion of the lessons that can be learned from this polycentric order for any attempt to create a legal instrument that more comprehensively deals with the problem of OA (F).

## B. International Climate Change Regime

The UNFCCC, its Kyoto Protocol and the recently concluded Paris Agreement appear to provide a suitable framework within which OA can be addressed<sup>110</sup>—climate change and OA share the same root cause, anthropogenic CO<sub>2</sub> emissions.<sup>111</sup> However, in practice, the regime has not only failed to tackle OA but, in fact, it may contribute to it.<sup>112</sup>

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106 UNCLOS (n 7) Article 192, Part XII.

107 UNCLOS (n 7) Article 194, this includes specific requirements not to transfer hazards or pollution: Article 195 or to reduce pollution by the introduction of technologies or to introduce alien species: Article 196.

108 K E Rakhyun, (n 105) 248; see also Y Downing (n 104) 257.

109 United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 May 1994) 1771 UNTS 107 (UNFCCC); Kyoto Protocol to the UN Framework Convention on Climate Change (UNFCCC) (adopted 11 December 1997, accessed 16 February 2005) 2303 UNTS 148 (Kyoto Protocol).

110 E Harrould-Kolieb and D Herr, ‘Ocean acidification and climate change: synergies and challenges of addressing both under the UNFCCC’ (2011) *Climate Policy* 1, 2

111 Y Downing, ‘Ocean acidification and protection under international law from negative effects: a burning issue amongst a sea of regimes?’ (n 104) 250.

112 K Rakhyun, (n 105) 246-7; T Stephens, ‘Ocean Acidification’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015).

The primary way in which the UNFCCC can be applied to OA is through Article 2 which sets a broad goal, namely ‘to achieve stabilisation of greenhouses gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.’<sup>113</sup> Given that the definition of climate system is wide enough to include the oceans and marine biodiversity—‘oceans are part of the hydrosphere, marine organisms are part of the biosphere and atmospheric concentrations of CO<sub>2</sub> are inextricably linked to the process of ocean acidification’—it is reasonable to suggest that the instrument regulates OA as well as to climate change.<sup>114</sup> Hence, the obligations set for State parties, particularly in Article 4 cover measures to fight both climate change and the ensuing result of OA.

However, the Kyoto Protocol is designed in a way that may potentially contribute to OA. It focuses on the reduction of several greenhouse gases listed in its Annex A, without identifying the need to reduce CO<sub>2</sub> specifically. Therefore, it is possible for Annex B countries to increase their CO<sub>2</sub> levels provided that they reduce their output of other greenhouse gases such as methane, nitrous oxide and HFC-23.<sup>115</sup> Further, the protocol encourages enhancement and protection of the oceans by defining them as sinks and reservoirs,<sup>116</sup> thus absorption of atmospheric CO<sub>2</sub> by the oceans is represented as a solution to the problem of climate change, rather than a concurrent problem.<sup>117</sup> In both cases, the effects of the Kyoto Protocol on OA are an empirical matter that remains to be clarified.

The question of oceans has been discussed at some Conferences of the Parties to the UNFCCC,<sup>118</sup> including at the COP-21 in Paris.<sup>119</sup> However, although an entire day was devoted to climate change and the oceans—Oceans Day—there was limited reference to the specific problem of ocean acidification and its impact on BBNJ. Instead, the focus understandably centred on links between climate change and the oceans, such as sea level rise that directly threaten the viability of small island States. The word ‘ocean’ appears

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113 UNFCC (n 109) Article 2.

114 R Baird, M Simons and T Stephens, ‘Ocean acidification: a litmus test for international law’ (2009) 3 Carbon and Climate Law Review 459, 463.

115 Y Downing (n 104) 253.

116 UNFCCC (n 109) Article 4.1(d); Kyoto Protocol (n 109) Article 2.1(a)(ii).

117 K E Rakhyun (n 105) 246; Y Downing (n 104) 252.

118 The first reference to ocean acidification was in a COP decision which appeared in 2010, but was described as a ‘slow onset event’ under the Cancun Adaptation Framework work programme on loss and damage.

119 Adoption of the Paris Agreement. Proposal by the President. (UNFCC) (12 December 2015) FCCC/CP/2015/L.9/Rev.1 (Paris Agreement).

only once in the Paris Agreement in a paragraph of the preamble that tangles it up with ecosystems generally and also climate justice.<sup>120</sup> No specific reference is made to ocean acidification or resulting loss of biodiversity. Further, the focus of the Paris Agreement on temperature targets, rather than on reducing the levels of specific greenhouse gases, makes the agreement unfit as an instrument to curb OA and its impact on BBNJ. As noted by two commentators, the negotiators ‘erroneously view[ed] rising ocean acidity as a symptom of climate change rather than a concurrent problem’ thus OA is subsumed by the dominant climate change narrative and its identity as an independent and significant problem is lost.<sup>121</sup>

### C. Biodiversity and environmental protection

By contrast to the UNFCCC regime, the CBD recognises the significance of OA as a concurrent problem to climate change and not a consequence of it.<sup>122</sup> This is particularly so as OA is likely to disrupt the implementation of the CBD’s marine and costal Programme of Work and the Addis Ababa Principles and Guidelines for the sustainable use of biodiversity.<sup>123</sup> In 2008 the CBD COP-9 requested the CBD Secretariat to compile and synthesise relevant scientific information on the problem and also urged Parties to observe the IMO moratorium on ocean fertilization activities. The strategic plan for biodiversity that was adopted by the parties included a target designed specifically to address ocean acidification. These targets are non-binding and do not apply to ABNJ. However, measures designed to address OA in any part of the ocean will inevitably affect ABNJ.

Alongside the CBD, there are other instruments addressed at preserving biodiversity that can apply to OA. For example, the impact of OA on straddling and highly migratory fish stocks, means that the UN Fish Stocks Agreement with its focus on conservation is at least tangentially relevant to OA. Specific reference was made to ocean acidification at the 2010 Review Conference with a call upon regional fisheries to

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120 ‘*Noting* the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, recognized by some cultures as Mother Earth, and noting the importance for some of the concept of “climate justice”, when taking action to address climate change.’ *Ibid.*

121 E Harrould-Koleb and D Herr (n 110) 381.

122 CBD, COP 10 Decision X/29 Marine and costal biodiversity, <<https://www.cbd.int/decision/cop/?id=12295>> accessed 29 April 2016.

123 K Rakhyun (n 105) 248.

strengthen their efforts to study and address the environmental impacts on marine ecosystems of *inter alia* OA. In response, the Inter-American Tropical Tuna Commission, in conjunction with the Secretariat of the Pacific Community, have been producing research on the impact of projected OA on yellow fin tuna.<sup>124</sup>

Other applicable instruments include the Madrid Protocol and CCAMLR. Although their jurisdiction is limited, these Antarctic-based instruments are of particular relevance to OA given that cold water is more susceptible to the phenomenon as CO<sub>2</sub> is more soluble in cold water. Thus the Southern Ocean is particularly vulnerable to acidification. The Scientific Committee on Antarctic Research ('SCAR') transmitted a report to the COP and Secretariat of UNFCCC highlighting the significance of OA as a parallel problem to climate change. The CCAMLR Commission has recognised the importance of OA, particularly as krill are so susceptible to the effects of OA, and it has consequently requested the impacts of OA to be included on the development agenda of the Joint CCAMLR-SCAR Action Group.<sup>125</sup>

#### **D. Atmospheric Pollution**

Given that OA is caused by excessive quantities of air pollutants, it is also possible to turn to instruments that deal with atmospheric pollution. Indeed in the United States, there have been attempts to use the Clean Air Act to address OA.<sup>126</sup> International law has already had to respond to the acidification problem resulting from air pollution arising from the release of pollutants other than CO<sub>2</sub>.<sup>127</sup> The 1979 Convention on Long Range Transboundary Air Pollution (LRTAP) is a framework convention that included eight protocols, establishing specific targets to reduce acid rain. The LRTAP system is a useful tool for combating OA for a number of reasons. In the first place, it addresses pollutants—other than CO<sub>2</sub>—that cause ocean acidification, for example nitrous dioxide ('NO<sub>2</sub>') and

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124 D Bromwood and others, 'The potential impact of ocean acidification upon eggs and larvae of yellowfin tuna (*Thunnus albacares*)' (2014) *Deep Sea Research II* 1.

125 K Rakhyun, (n 105) 251-2.

126 M Peloso, 'Using the Clean Air Act to Address Ocean Acidification' in *Climate Change Impacts on Ocean and Coastal Law: US and International Perspectives* in R S Abate (eds) *Climate Change Impacts of Ocean and Coastal Law* (PUP 2015).

127 T Stephens, (n 112) 439.

sulphur dioxide ('SO<sub>2</sub>'). The regime is also helpful because because, as one commentator has suggested, it can serve as an 'important precedent for a possible international legal response to ocean acidification because of its science-based and precautionary approach.'<sup>128</sup>

The concept of a 'critical load of acidity' for acid rain found in Article 2 of the 1999 Gothenburg Protocol provides another example of a possible regulatory approach that could be applied to the case of OA.<sup>129</sup> There are however significant economic, political and legal barriers to this given the different characters of SO<sub>2</sub>—a major cause of acid rain—and CO<sub>2</sub> emissions. For example, it is easier to target the sources of SO<sub>2</sub> pollution and the economic costs of doing so are less significant. Further, there was no legal regime overlap in the case of SO<sub>2</sub>, whereas there is already a legal instrument that addresses CO<sub>2</sub> emissions—UNFCCC—and thus potential for regulatory conflict.

## E. Marine Pollution

Another set of legal instruments that address the problem of OA are those focusing on marine pollution. As has already been noted, the provisions in UNCLOS that deal with marine pollution can be broadly applied to the case of OA, namely Articles 207 through to 212 all deal with different forms of marine pollution, including from the atmosphere<sup>130</sup> and from land-based activities.<sup>131</sup> Alongside this, the 1972 London Convention on Dumping<sup>132</sup> and the 1996 London Protocol,<sup>133</sup> the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL)<sup>134</sup> and OSPAR Convention<sup>135</sup> apply in limited ways to the case of OA.<sup>136</sup>

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128 Ibid.

129 Ibid.

130 UNCLOS (n 7) Article 212.

131 UNCLOS (n 7) Article 207.

132 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 29 December 1972, entered into force 30 August 1975) 104 UNTS 120 (London Convention).

133 Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (adopted 7 November 1996, entered into force 24 March 2006) 2006 ATS 11 (London Protocol).

134 International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) 1340 UNTS 184 (MARPOL).

135 OSPAR Convention (n 14).

136 T Stephens, (n 112) 442.



MARPOL is designed to prevent operational and accidental discharges harmful substances emitted by vessels, including CO<sub>2</sub>. Annex VI, which applies to those States having specifically accepted it, addresses the ‘Prevention of Air Pollution from Ships’ and sets limits for the emissions of target substances. In 2011 the IMO introduced binding efficiency targets to reduce CO<sub>2</sub> emissions alongside pollutants. Although international shipping contributes only about 2.2% of CO<sub>2</sub> emissions<sup>137</sup> and its impact on overall atmospheric CO<sub>2</sub> levels is thus limited, there has already been a noticeable decrease in emissions from 2.8% in 2011.

The 1996 London Protocol applies to OA to the extent that it applies to activities intended to mitigate anthropogenic climate change, namely the dumping of CO<sub>2</sub> into the marine environment. Several measures in the 1996 London Protocol have been introduced to regulate attempts to store CO<sub>2</sub> under or on the seabed, or in the water column, including the adoption of a precautionary approach and the 2012 Specific Guidelines for the Assessment of Carbon Dioxide for Disposal into Sub-Seabed Geological Foundations.<sup>138</sup> Whilst these activities are intended to help reduce OA as well as climate change, they must be tightly regulated, because any failure of the sequestration will lead to an increase in OA. Accordingly following an amendment in 2006 to Annex I of the Protocol carbon capture and sequestration of CO<sub>2</sub> in sub-sea geological formations (the seabed) is now a licenced activity. Licences are granted only if:

(1) disposal is into a sub-seabed geological formation; (2) they consist overwhelmingly of carbon dioxide (they may contain incidental associated substances derived from the source material and the capture and sequestration processes used); and (3) no waste is added for the purpose of its disposal. In other words, these rules do not permit CO<sub>2</sub> sequestration in the deep oceans themselves.<sup>139</sup>

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137 ‘Shipping, World Trade and the Reduction of CO<sub>2</sub> Emissions’ (*International Chamber of Shipping* 2014) <<http://www.ics-shipping.org/docs/default-source/resources/environmental-protection/shipping-world-trade-and-the-reduction-of-co2-emissions.pdf?sfvrsn=6>> accessed 29 April 2016.

138 Specific Guidelines for the Assessment of Carbon Dioxide for Disposal into Sub-Seabed Geological Foundations (adopted 2 November 2012) LC 34/15, Annex 8.

139 Notification of entry into force of the ‘CO<sub>2</sub> Sequestration’ amendments to Annex 1 to the London Protocol 1996 (27 November 2006) LC-LP.1/Circ.5.

The Contracting Parties also adopted guidelines to provide guidance on how to capture and sequester CO<sub>2</sub> in a way that is consistent with the requirements of the Protocol.<sup>140</sup> Alongside this, in 2009 the Parties to the London Convention and Protocol introduced a moratorium on ocean fertilization, except in the case of legitimate scientific research.<sup>141</sup>

The instruments discussed thus far in this section have been targeted at pollution from marine sources, however as most atmospheric CO<sub>2</sub> results from land-based activities, if the problem of OA is to be properly addressed it is necessary to target terrestrial pollution sources. The OSPAR Convention, based on the 1974 Convention for the Prevention of Marine Pollution from Land Based Sources, encourages parties to identify threats to the marine environment caused by land based pollution and adopt national measures to address them. OA comes within the definition of pollution adopted in article 1(d) of the Convention, and thus engages the duty to take ‘all possible steps to prevent and eliminate pollution.’<sup>142</sup> The OSPAR Commission has also targeted OA specifically: it published a report on OA considering its marine environmental impacts; amended the annexes and adopted guidelines to allow for carbon storage in geological formations under the seabed; and adopted a decision to prohibit storage on or above the seabed. However, as this is a regional convention, it is of limited application to ABNJ.

The 1995 Global Programme of Action for the Protection of the Marine Environment from Land Based Activities (GPA) is the only global instrument that applies to land-based marine pollution.<sup>143</sup> The GPA sets out specific pollution reduction targets for nine source categories. However it is non-binding and allows States to retain control over their degree of commitment.<sup>144</sup> It also fails to impose detailed and enforceable

140 Risk Assessment and Management Framework for CO<sub>2</sub> Sequestration in Sub-Seabed Geological Structures Source LC/SG-CO<sub>2</sub> 1/7, annex 3 (CS-SSGS); Specific Guidelines on Assessment of CO<sub>2</sub> Streams for Disposal into a Sub-Seabed Geological Formations, London Protocol.

141 Resolution LC-LP.1 (2008) on the Regulation of Ocean Fertilization (adopted on 31 October 2008) LC 30/16, Annex 6.

142 OSPAR Convention (n 14) Article 2(1)(a).

143 T Stephens (n 112).

144 Y Downing, (n 104) 263.

pollution standards.<sup>145</sup> And, although it does make reference to the UNFCCC as one of the international treaties relevant to the protection of the marine environment, it does not address CO<sub>2</sub> emissions. Thus it is doubtful that it could adequately address OA.<sup>146</sup>

## **F. Lessons from the existing legal landscape**

Foremost amongst the lessons that can be learned from this survey of the ‘polycentric order’ that governs OA is the need to be precise about its cause. OA occurs as a result of atmospheric CO<sub>2</sub> (and to a lesser extent NO<sub>2</sub> and SO<sub>2</sub>) dissolving in seawater, and OA is recognised as a global threat because the increased levels of atmospheric CO<sub>2</sub> disrupts the balance of this naturally occurring phenomena. OA is emphatically not a consequence of climate change. It is a sister (rather than daughter) problem, that if not treated independently will continue to be exacerbated by attempts to address climate change as an isolated consequence of greenhouse gas emissions.

Second, if OA is to be taken seriously it will be necessary to institute specific targets, either in the form of the reduction targets for atmospheric CO<sub>2</sub> levels or in the form of a ‘critical load of acidity’ in the oceans appropriate to protect BBNJ. The problem of OA has not been well served by vague commitments to prevent marine or atmospheric pollution, or from being subsumed within general greenhouse gas targets. Therefore, what is needed are specific targets based on scientific research to help States recognise the extent to which atmospheric CO<sub>2</sub> must be reduced in order to address the problem of OA.

Finally, the extent to which the legal regime can address a problem that is largely land-based is unclear. Whilst it is desirable that an agreement under UNCLOS targeted at protecting BBNJ should acknowledge the problem of OA, it can never be a complete solution to the problem. Caution should therefore be exercised in adding another “patch” to the already complex patchwork touching upon the problem of OA.<sup>147</sup> OA requires an approach that takes into account the entire ocean, and not just ABNJ. Given the literal fluidity of ocean water, ocean acidity does not stop at borders. Of course, the impacts of OA on marine biodiversity are pronounced and therefore there is sense in addressing OA

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145 D VanderZwag and A Powers, ‘The Protection of the Marine Environment from Land-Based Pollution and Activities: Gauging the Tides of Global and Regional Governance’ (2008) *International Journal of Marine and Coastal Law* 423, 441.

146 *Ibid.*, 439; Y Downing, (n 104) 263.

147 K Rakhyn (n 105) 247; for an explanation of the concept of ‘regime complex’ see: K Rausitala and D G Victor, ‘The regime complex for Plant Genetic Resources (2004) 58 *International Organisation* 277.

in the context of a marine biodiversity treaty. Nonetheless, as a number of commentators have argued, OA might be more appropriately addressed either in the form of a stand-alone agreement or as a protocol UNFCCC.<sup>148</sup>

## 3. LEGAL APPROACHES TO BBNJ

### 3.1. Overall approach

This section examines two legal techniques designed to help conserving marine biodiversity in ABNJ—area-based management tools and EIAs. The focus is on the use of these techniques for the purpose of conservation of BBNJ and does not cover the question of access to genetic resources and the sharing of their benefits. Of course these are not the only techniques that could be used to protection BBNJ but they deserve special attention because they have been expressly identified by the working group on BBNJ and in the enabling resolution of the UN General Assembly.<sup>149</sup>

As set out in Section 1, how marine biodiversity should be conceptualised when it occurs outside of national jurisdictions is complicated. Three different regimes apply to different aspects of BBNJ: the common concern of humankind; the freedom of the high seas; and the common heritage of mankind. The legal approach taken in respect of BBNJ will therefore depend in part on its status in international law. This is most important in relation to benefit sharing and marine genetic resources, but it is also important in a

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148 K Rakhyn (n 105), 257-8.

149 UNGA Resolution adopted by the General Assembly (19 June 2015) on development of an international legally binding instrument 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, A/Res/69/292 (UNGA Resolution 69/292).

general sense.<sup>150</sup> The legal fictions that classify marine biodiversity differently depending on where it appears means that activities, in particular fishing, that occur in different locations will have implications for how these resources might be managed and protected and for how they might be treated for the purposes of environmental impact assessment.

Further, any legal approach to protecting BBNJ can only be as effective as the scientific evidence available. Scientific understanding of the marine environment, particularly in ABNJ, and the impact of activities in it, is an emerging area of research. Not all impacts of the various threats identified will be fully understood or even known yet. Thus in developing a legal response there is a need for lawyers and scientists to work closely together in developing regulatory responses.

Something that is important to bear in mind in relation to the discussion that follows is that whilst there is a direct causal link between the first two threats considered above (fisheries depletion (2.3) and marine bed pollution (2.2)) and the two legal approaches considered here, the link between them and ocean acidification is more tangential. These two legal approaches are limited in what they can do to reduce OA. They might go some way to mitigate its impact, but the mitigation will be limited. This is because most activities that produce CO<sub>2</sub> and lead to OA are land-based. Therefore, legal techniques that apply specifically to the high seas and the Area cannot begin to approach the full scale of the problem. Legal approaches to ocean acidification must therefore be targeted at land based activities. If the Monaco Declaration—a report calling for swift and dramatic cuts to emissions to address the problem of OA—is to be taken seriously,<sup>151</sup> EIA and area-based management tools amount to little more than window dressing in the face of OA: ‘ocean acidification can be controlled only by limiting future atmospheric CO<sub>2</sub> levels.’<sup>152</sup>

Although coordinating conservation activities in a marine environment is challenging the EU Marine Strategy Framework Directive provides a useful illustration of how it might be possible to coordinate an approach to protecting marine biodiversity.<sup>153</sup> The Directive enshrines a commitment to biodiversity and an ecosystems approach

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150 T Scovazzi, ‘Negotiating Conservation and Sustainable use of Marine Biological Diversity in Areas Beyond National Jurisdiction: Prospects and Challenges’ (n 3) 87-93.

151 Monaco Declaration, second international symposium of the ocean in a high-CO<sub>2</sub> World (6-9 October 2008) <<https://www.iaea.org/nael/docrel/MonacoDeclaration.pdf>> accessed 29 April 2016.

152 R Baird, M Simons and T Stephens (n 114).

153 Council Directive (EC) 2008/56 establishing a framework for community action in the field of marine environmental policy [2008] OJ L 164 (Marine Strategy Framework Directive).

managing the impact of human activities on the environment. The EU Commission have also supplied a set of detailed criteria and indicators in order to assist states with implementation.<sup>154</sup> Of course, as the Directive applies to areas within national jurisdiction and operators within an existing legal framework, it does not need to address some of the governance issues that a new treaty may be limited by, it does provide an aspirational standard to aim for.

### 3.2. Environmental Principles

Environmental principles are fundamental to understanding and implementing legal approaches to the conservation and protection of BBNJ, for example, MPAs are based on an ecosystems approach to marine conservation.<sup>155</sup> Although they are not legally binding, they do provide guidance as to how to ‘implement a treaty, pursue its objective and balance conflicting interests.’<sup>156</sup> Therefore, before turning to the substantive discussion of the two specific legal approaches—area-based management tools and environmental impact assessment—this section will briefly survey the environmental principles that commentators have suggested ought to assist with the protection of BBNJ and thus will have implications for the operation of two approaches:

- i. **International cooperation** is a general principle of customary international law and underpins the operation of UNCLOS. It is particularly important in the context of ABNJ given the ‘governance vacuum’ that exists there.<sup>157</sup> Both the CBD and Fish Stocks Agreement have emphasised the importance of this principle, particularly in respect to the relationship between coastal states and RFMOs.

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154 The EU Commission have also supplied a set of detailed criteria and indicators in order to assist states with implementation.

155 T Scovazzi, ‘Marine Protected Areas on the High Seas: Some Legal and Policy Considerations’ (2004) 19 *International Journal of Marine and Coastal Law* 1, 2.

156 S Cole, M José Ortiz and C Schwarte, ‘Protecting the Marine Environment in Areas Beyond National Jurisdiction’ *Foundation for International Environmental Law and Development*, April 2012, 39.

157 *Ibid.*

Commentators have also emphasised the importance of this principle in the context of area-based management techniques that depend on collaborative efforts for their effectiveness.<sup>158</sup>

- ii. **Precautionary principle/approach** requires action to be taken in relation to potential threats to the environment, even though there is uncertainty about whether the risk will materialise.<sup>159</sup> It is of particular importance in the context of ABNJ where there is limited scientific knowledge about the impacts of human activities on the marine environment. Although the legal status of the precautionary principle in customary international law is contentious,<sup>160</sup> it has been incorporated into the Fish Stocks Agreement<sup>161</sup> and the 1996 Protocol to the London Convention 1972 and is an implicit feature of EIA.<sup>162</sup>
- iii. **Ecosystems approach** is an approach that operates on the scientific basis that it is better to protect and manage entire ecosystems, rather than specific species. It is therefore the antithesis of the largely sectoral approach that is that is presently taken in the context of the protection of BBNJ. The ecosystems approach is already recognised in UNGA Resolutions,<sup>163</sup> by the CBD<sup>164</sup> and in the Fish Stocks Agreement.<sup>165</sup>
- iv. **Science-based approach** is an approach that requires scientific data to be gathered and analysed so that it can inform management techniques and legal approaches to protecting BBNJ. States are required to base their fisheries management measures ‘on best scientific evidence available’<sup>166</sup> and the importance

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158 Ibid.

159 Antônio Augusto Cançado Trindade, ‘Principle 15’ in J E Viñuales (eds) *The Rio Declaration on the Environment: A Commentary* (OUP 2015), 404.

160 D L VanderZwagg, ‘The ICJ, ITLOS and the Precautionary Approach: Paltry Progressions, Jurisprudential Jousting’ (2013) 35 *University of Hawaii Law Review* 617.

161 S Cole, M José Ortiz and C Schwarte (n 152), 39.

162 D VanderZwagg and A Daniels, ‘International Law and Ocean Dumping: Steering a Precautionary Course Aboard the 1996 London Protocol, but Still an Unfinished Voyage’ in A Chircop, T L McDorman and S J Rolston (eds) *The Future of Ocean Regime-Building Building* (Brill 2009).

163 For example, UNGA Res 44/225 (22 December 1989) A/RES/44/225.

164 CBD (n 2) preamble.

165 Fish Stocks Agreement (n 79) Article 5(c).

166 UNCLOS (n 7) and Fish Stocks Agreement (n 81).

of scientific criteria has also been recognised in the context of managing pollution.<sup>167</sup> This approach therefore requires States to develop and share scientific data in relation to ABNJ.

- v. **Sustainable and equitable use** requires States exercising their high seas freedoms to recognised that they should do so in a way that is consistent with the concept of intergenerational equity. This principle is already part of UNCLOS to the extent that it requires states to ‘protect and preserve the marine environment and rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.’
- vi. **Stewardship of the marine environment in ABNJ.** Although stewardship is not strictly a principle of environmental law, it is nevertheless an important concept to consider in the context of protecting the marine environment. In part because it is closely connected to other principles—cooperation, the precautionary approach and sustainable use—but also because it might help shape the way in which marine resources in the high seas are understood.<sup>168</sup> For example, whether they are the ‘common heritage’ or ‘common concern’ of humankind.<sup>169</sup>
- vii. **Polluter pays principle** denotes the obligation under international law that States have to ‘ensure that activities within their jurisdiction or control do not cause damage to the marine environment of other states and in ABNJ.’<sup>170</sup>
- viii. **Transparency and accountability.** A growing dimension of international environmental law is the role that non-party stakeholders have in relation to it. This manifests most prominently in the increasing importance placed on public participation in the context of environmental decision making. Although it is difficult to conceive of how public participation in the traditional sense might operate in ABNJ, it is will nevertheless remain an important aspect of the legal approaches taken to address threats to BBNJ, in particular, environmental impact assessment.

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<sup>167</sup> S Cole, M José Ortiz and C Schwarte (n 156), 40.

<sup>168</sup> J Van Dyke, ‘Applying the Precautionary Principle to Ocean Shipments of Radioactive Materials (1996) 27 *Ocean Development and International Law*, 379.

<sup>169</sup> S Cole, M José Ortiz and C Schwarte (n 156), 40.

<sup>170</sup> *Ibid*, 41.



This discussion of environmental principles has been brief, and there is much more that can be said both about the individual nature of each of these principles but also about how they manifest in the specific context of protecting BBNJ. They have been highlighted here as important features of the backdrop to the specific legal techniques considered below.

### **3.3. Area-based management tools**

#### **3.3.1. Overview**

The use of area-based management tools (ABMT) to protect the oceans can manifest in a variety of ways—fisheries closures, marine spatial planning and Particularly Sensitive Sea Areas (‘PSSA’) are just a few examples. These tools protect biodiversity in direct and indirect ways, for example PSSAs restrict shipping routes, reduce pollution and thus indirectly protect biodiversity. As with the entire governance regime of ABNJ, the legal landscape of ABMT is fragmented. This is because there is no overarching framework and so they apply to specific sectors or issues and as a result they are governed by a number of international organisations that do not necessarily cooperate or coordinate.

This section will: survey the diverse legal regimes that implement and govern marine protection areas (the most widely utilised ABMT) and the existing attempts to unify them (3.3.2); briefly consider the other forms of area-based management techniques that apply to BBNJ (3.3.3); draw out some important lessons from the existing regime that should be borne in mind for developing an international instrument on BBNJ (3.3.4); explain the extent to which area-based management tools are an appropriate response to the threats discussed in Section 2 (3.3.5); and propose three different approaches that could be taken (3.3.6).

Before embarking on the scan and analysis, it is worth setting out some definitions. This is useful because in some literature the terms ‘area-based management tool’ and ‘marine protection areas’ (‘MPA’) appear to be used interchangeably. ABMT do not have a universally accepted definition, but can be understood to ‘include spatial and non-spatial tools that afford a specified area higher protection than its surroundings due to more

stringent regulation of one or more or all human activities.’<sup>171</sup> Regarding MPAs, although again there is no universally accepted definition for them, there has been more thought about how they should be defined.<sup>172</sup> Broadly, they are ‘an area of marine waters which is granted a special protection regime because of its significance for a number of reasons (ecological, biological, scientific, historical, educational, recreational, etc).’<sup>173</sup> As there is a proliferation of different approaches to MPA, they will be considered first.

### 3.3.2. Marine Protection Areas

#### A. Introductory remarks

MPAs are established so as to limit or prohibit human activities in marine areas in order to protect and conserve that environment.<sup>174</sup> Designating an area as a MPA offers it special protection because designation is linked with a variety management measures.<sup>175</sup> For example, some MPAs are ‘no-take’ zones, some place limits on the equipment that can be used in them and others require certain activities such as tourism or the use of sonar to be regulated.<sup>176</sup> MPA can be fixed in a particular area or ambulatory in order to protect changing habitats of migratory species.

A number of sectoral and regional organisations implement a number of different ABMT that impose different criteria for designation, employ a variety of management approaches and operate with varying degrees of success. Broadly speaking, designation of an MPA involves four steps:

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171 T Greiber, ‘An International Instrument on Conservation and Sustainable use of Biodiversity in Marine Areas beyond National Jurisdiction’ (2013) IUCN Series on Policy Briefs Paper V, 1.

172 G Wright, J Rochette and T Greiber, ‘Sustainable Development of the Oceans: Closing the Gaps in the International Legal Framework’ in V Mauerhofer (eds) *Legal Aspects of Sustainable Development* (Springer International Publishing 2016), 553.

173 T Scovazzi, ‘Marine Protected Areas on the High Seas: Some Legal and Policy Considerations’ (n 155) 2; it should be noted that there are a number of definitions IUCN Guidelines 2013.

174 S Cole, M José Ortiz and C Schwarte, (n 156) 7.

175 Ibid.

176 G Wright, J Rochetter an T Greiber, ‘Sustainable Development of the Oceans: Closing the Gaps in the International Legal Framework’ (n 172) 553.

(i) the description of a suitable area according to determined scientific criteria; (ii) the proposal of an MPA; (iii) the official designation by a competent authority; and (iv) the adoption of a management plan and management measures aimed at meeting the objectives of the MPA.<sup>177</sup>

Within these four steps there is significant room for approaches to diverge. For example, the scientific criteria used to decide whether to designate an area can differ both because of what is deemed scientifically significant differs and/or because the scientific basis of such information can differ. These divergences in approach will be seen in the different, international and regional approaches to MPAs.

## **B. International agreements**

There are a number of general obligations under UNCLOS that support the establishment of MPA:<sup>178</sup> the obligation to protect and preserve the marine environment;<sup>179</sup> the obligation to implement measure to protect rare or fragile ecosystems and the habitats of threatened species;<sup>180</sup> the obligation to cooperate<sup>181</sup> in the protection of the marine environment<sup>182</sup> and the conservation and management of high seas living resources.<sup>183</sup> Together, these provision support the establishment of MPA in ABNJ and these general obligation find expression in a number of different sectoral and regional instruments that more precisely set out the criteria for establishing MPA.

International instruments establishing MPA are typically sectoral, although a few implement general criteria for designation:

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177 Ibid, 554-5.

178 T Scovazzi, 'Marine Protected Areas on the High Seas: Some Legal and Policy Considerations' (n 155) 5-6; E Druel, 'Marine protected areas in areas beyond national jurisdiction: The state of play' Working Papers N°07/2011. IDDRI, 2011. 20 P.

179 UNCLOS (n 7) Article 192

180 UNCLOS (n 7) Article 194(5)

181 'The duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XIII of the Convention and general international law,' 'The MOX Plant Case' (*Ireland v United Kingdom*) (Provisional Measures, Order of 3 December 2001) IRLS Reports 2001, para 82.

182 UNCLOS (n 7) Article 197.

183 UNCLOS (n 7) Articles 117 and 118.

- i. Under MARPOL, there are provisions for the establishment of Special Areas. Annexes I-V set out strict standards for ship discharges, such as noxious substances, debris and oil, in areas designated as Special Areas.
- ii. The IMO can designate Particularly Sensitive Sea Areas ('PSSA') to protect areas that may be vulnerable to damage from shipping for ecological, socio-economic or scientific reasons.<sup>184</sup> The protective measures associated with PSSA 'have no mandatory character,' so a PSSA would need to be designated as Special Area for these measure to be binding.<sup>185</sup> Further, PSSA focus on reducing harm form shipping and therefore do not apply to other potential threats such as fishing or mining. No PSSA has been designated in an ABNJ to date.
- iii. The ISA can designate Areas of Particular Environmental Interest ('APEI') and preservation reference zones.<sup>186</sup> To date they have declared nine APEIs in the Clarion-Clipperton Zone.<sup>187</sup>
- iv. The IWC has established the Indian Ocean<sup>188</sup> and Southern Ocean<sup>189</sup> Sanctuaries to prohibit commercial whaling under the 1946 Convention for the Regulation of Whaling.<sup>190</sup> The Convention also imposes area limits for factory ships.<sup>191</sup>
- v. The CBD has facilitated a scientific process for identifying ecologically or biologically significant marine areas ('EBSAs').<sup>192</sup> The criteria adopted for designation of EBSA are: uniqueness or rarity; special importance for life-history stages of species; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, sensitivity or slow recovery; biological productivity;

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184 IMO Resolution (1 December 2005) A.982(24)

185 T Scovazzi, 'Marine Protected Areas on the High Seas: Some Legal and Policy Considerations' (n 155) 9.

186 Polymetallic Nodules Regulations (n 40) Section V.31.6.

187 ISA Decision of the Council relating to an environmental management plan for the Clarion-Clipperton Zone (2012) ISBA/18C/22.

188 International Convention on the Regulation of Whaling (2 December 1946, 10 November 1948) 161 UNTS 72 (Whaling Convention), Article III(7)(a).

189 Ibid, Article III(7)(b).

190 Ibid, Article V(1)(c)

191 Ibid, Article III(8).

192 CBD COP 9, Decision IX/20 on Marine and coastal biodiversity, Annex I.

biological diversity and naturalness. However, identification does not have any immediate legal effect, and the management of these marine areas remains in the hands of the relevant authorities.

- vi. The Convention on the Conservation of Migratory Species of Wild Animals ('CMS') applies to marine as well as terrestrial animals and permits the establishment of MPA as a conservation management technique.<sup>193</sup> A number of subsidiary agreement and memoranda of understanding have been negotiated under the CMS in order to protect specific species such as cetaceans and marine turtles.<sup>194</sup>

Although these international instruments are sector based, and so do not take account of complete ecosystems, it might be possible to encourage better 'synergy' between these different regimes, to produce a 'layering of protective measures.'<sup>195</sup> The UNGA could play some role in coordinating these different approaches and encouraging a more 'integrated regime.'<sup>196</sup> However, even with better coordination and also compliance, there are still gaps in terms of scientific understanding, regulation and geographic coverage.<sup>197</sup>

### **C. Regional initiatives**

Alongside these international regimes there are also a number of regional initiatives for the designation MPAs. Given that these regional treaties have geographical, as opposed to sectoral scope, they are more consistent with an ecosystems-based approach, however, they are limited as management measures only apply to States party to the relevant treaty and accordingly are legally weak. RFMOs can impose area-based closures of certain fisheries on high seas to protect or restore the stocks they manage, or to protect the vulnerable marine ecosystems (VMEs) located on the seabed.

- i. The Barcelona Convention with its Protocol on Specially Protected Areas, enables states to designate Specially Protected Areas of Mediterranean Importance ('SPAMI').

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193 Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 June 1979, entered into force 1 November 1983) 1651 UNTS 333 ('CMS').

194 S Cole, M José Ortiz and C Schwarte, (n 156) 23.

195 Ibid, 32.

196 Ibid, 32.

197 Ibid, 32.

- ii. The Madrid Protocol operates a twin system of MPAs: Antarctica Specially Protected Areas ('ASPAs') and Antarctica Specially Managed Areas ('ASMA'). Additionally, areas of cultural significance can be designated as Historic Sites and Monuments ('HSM'), HSM can exist within ASPA and ASMA. Decisions on whether to designate protected areas are taken at the annual Antarctic Treaty Consultative Meeting (ATCM).
- iii. The Commission to the OSPAR Convention has adopted seven MPAs through legally binding decisions that established the existence and geographical boundaries of the MPAs and non-legally binding recommendations as to their management.
- iv. The Commission on the Conservation of Antarctic Marine Living established by the CCAMLR has a mandate to identify and implement conservation measures appropriate to protect marine living resources in the Southern Ocean.

There are some clear advantages to a regional approach to MPA—different regions are unique, with different ecosystems, stressors and stakeholders. These areas therefore require a target rather than a generic approach. Further, regional approaches can be very effective at conducting a coordinated approach. For example, commentators have described the OSPAR Convention as a 'model for cooperation and coordination' calling for it to be replicated in other regions.<sup>198</sup> However, the geographical coverage of these regional approaches is incomplete and there is little political will to establish more regional seas organisations.<sup>199</sup> Further, in the case of RFMO in particular, their mandate applies only to fishing, so other activities such as laying cables or shipping are outside of the scope of what these organisations can control.<sup>200</sup> Finally, it is difficult to facilitate cooperation between regional approaches. For example, coastal States have no special control over ABNJ adjacent to their waters, thus although a RFMO may attempt to protect ABNJ enclosed within national waters, it has no control over States not party to the relevant agreement.

These international and region-based approaches can only go some way in the protection of BBNJ for a number of reasons. As has already been stated, they largely focus on specific sectors or regions and thus fail to take a comprehensive approach that accounts for the protection of BBNJ. There is therefore a clear need for international framework for the creation and coordination of area-based management tools in ABNJ.<sup>201</sup>

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198 S Cole, M José Ortiz and C Schwarte, (n 156), 32.

199 Ibid, 32.

200 Ibid, 30.

201 J Ardron and others 'Advancing governance of the high seas,' (2013) IDDRI-IASS, Policy Brief N°6/13, 8p.

## D. Voluntary initiatives

In addition to these regional treaty-based approaches for establishing MPAs, there are two MPAs that have arisen from voluntary, collective efforts: the Pelagos Sanctuary and the Sargasso Sea Commission (formerly the Sargasso Sea Alliance). These voluntary arrangements are not only examples of collective initiative, but also demonstrate that there is a synergy between the different MPA designations as these voluntary initiatives can lead to designation according to the different instruments considered above.

The Pelagos Sanctuary for Mediterranean Marine Mammals was established by the governments of France and Italy and the Principality of Monaco in 1999. The Sanctuary was designed to protect the eight cetacean species resident in the area and incorporated both terrestrial waters and ABNJ. The site was designated as a SPAMI in 2001 and a management plan was approved in 2004. Bottom fishing and the use of towed dreds is prohibited in the area by the General Fisheries Commission of the Mediterranean, the Italian Navy refrains from conducting certain activities and a number of fishing companies have agreed to use technology to prevent collisions with cetaceans. The founding States were at one point in discussions to seek designation of the area as a PSSA. Unfortunately however, the status of the Pelagos Sanctuary as a SPAMI is in jeopardy given the lack of cooperation between France, Italy and Monaco and there have been calls for a renewed commitment to this collaborative effort.<sup>202</sup> This example highlights the fundamental importance of international cooperation in ensuring the effectiveness of ABMT in ABNJ.

In 2010 the Government of Bermuda initiated the creation of the Sargasso Sea Commission ('SSC'),<sup>203</sup> to improve stewardship of the Sargasso Sea and to deal with key threats to the ecosystem, such as fishing and seabed mining.<sup>204</sup> The SSC has developed a management plan for the Sargasso Sea (which is largely in ABNJ) and works with the existing MPA regimes, such as the CBS's EBSA and UNESCO World Heritage Site scheme. This initiative is unusual because the alliance not only includes the Government of Bermuda but also NGOs, scientists and private donors. Thus the SSC demonstrates how it

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202 'The Pelagos sanctuary deserves more' (*IUCN*, 24 March 2015)

<[http://www.iucn.org/news\\_homepage/news\\_by\\_date/?20096/The-Pelagos-sanctuary-deserves-more](http://www.iucn.org/news_homepage/news_by_date/?20096/The-Pelagos-sanctuary-deserves-more)>  
accessed 30 April 2016.

203 R Warner, 'Marine Protected Areas – Developing Regulatory Frameworks for Areas beyond National Jurisdiction' (2015) *Australian Zoologist* 1, 3.

204 S Cole, M José Ortiz and C Schwarte, (n 156), 33

is possible to identify relevant stakeholders and NGOs in the context of ABNJ. This is particularly relevant for the EIA process considered below (3.3) where public consultation forms an essential part of the process.

The SSC is a paradigm of a coordinate, scientifically grounded and dedicated approach to protecting BBNJ through AMBT. It is particularly commendable in its ability to marshal financial support from private donors and to bring together different stakeholders in the effort of protecting a marine environment outside of state jurisdiction. However, this approach may not work well in other areas where there is less political will and support for the measures and thus a greater problem with compliance.

## E. A multi-sector approach

Conscious of the fragmentary nature of the current regime there have been a number of attempts within the international community to establish an ‘ecologically-coherent’ network of MPA.<sup>205</sup> In 2002 the World Summit on Sustainable Development called for the creation of a global network of representative MPAs by 2012 (the Johannesburg Plan of Implementation).<sup>206</sup> Similarly in 2011, parties to the CBD set a target for 2020 that 10 per cent of coastal and marine areas be ‘conserved through an effectively and equitably managed, ecologically representative and well connected systems of protected areas’ (the Aichi Biodiversity Targets).<sup>207</sup> Currently only about two per cent of the world’s marine waters have been designated<sup>208</sup>

In 2010, the UNGA, in its Resolution 65/37 on ‘Oceans and Law of the Sea’ declared that it

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205 Ibid, 12.

206 Plan of Implementation of the World Summit on Sustainable Development Johannesburg Plan of Implementation (4 September 2002) A/CONF.199/20.

207 Strategic Plan for Biodiversity 2011-2020 and Aichi Target, <<https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>> accessed 30 April 2016 (Aichi Targets).

208 ‘Protected Areas in Antarctica’ (*Umwelt Bundesamt* 28 January 2016) <<http://www.umweltbundesamt.de/en/protected-areas-in-antarctica>> accessed 30 April 2016.



encourages States to further progress towards the 2012 target for the establishment of marine protected areas, including representative networks, and calls upon States to further consider options to identify and protect ecologically or biologically significant areas, consistent with international law and on the basis of the best available scientific information.<sup>209</sup>

Moreover, the UNGA created two fora in which the issue of MPAs in ABNJ is regularly addressed. The first one is the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS), created in 1999 by Resolution 54/33 in order to facilitate the annual review by the UNGA of developments in oceans affairs.<sup>210</sup> In UNICPOLOS, several discussions were held between delegations on the management of marine biodiversity beyond national jurisdiction.

These international efforts to develop a more coordinated approach have culminated in the current negotiation process mandated by the UNGA resolution of 19 July 2015.<sup>211</sup> As stated above, the resolution specifically requires negotiations to address MPA (as part of the spectrum of other forms of ABMT) as a tool for conserving and promoting the sustainable use of BBNJ.<sup>212</sup>

### ***3.3.3. Other area-based management tools***

#### **A. Introductory remarks**

As stated above, commentary on ABMT frequently blurs the distinction between MPA and ABMT more generally. In this document some attempt is made to establish a distinction between these two terms.<sup>213</sup> This distinction is important because it is one that is made in Resolution 69/292, as it refers to ‘measures such as area-based management

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209 UNGA Res 65/37 (7 December 2010) A/RES/65/37(UNGA Resolution 65/37), paragraph 179.

210 UNGA Res 54/33 (18 January 2000) A/RES/54/33 (UNGA Resolution 54/33)

211 UNGA Res 69/292 (19 June 2015) A/RES/69/292 (UNGA Resolution 69/292)

212 Ibid, paragraph 2

213 Although it is accepted that the distinctions made might not be generally accepted, for example the CBD criteria has been described as ABMT and not MPAs.

tools, *including* marine protected areas'<sup>214</sup> and is also recognised in the Aichi Targets.<sup>215</sup> Something that will be noticed in the following discussion, is that this lack of definitional clarity is characteristic of other forms of ABMT, for example marine spatial planning is used synonymously with 'integrated management' and 'ocean zoning.'<sup>216</sup> This goes to a broader point therefore about the lack of consistency in defining these techniques. As one commentator has suggested, this is problematic because it means that these techniques are not considered more seriously at a policy and decision-making level in most countries.<sup>217</sup> Effort has therefore been made here to draw out the relevant distinctions between these terms.

In an effort to separate out the different techniques, this section will consider three key forms of ABMT that operate alongside MPAs: marine spatial planning (MSP); marine conservation agreements (MCA); and fisheries closures and no take zones. There are other ABMTs such as Mapping Ocean Wealth, spawning measures and seasonal closures that will not be discussed in detail here in part because there is little commentary on alternative forms of ABMT, the focus being almost exclusively on MPAs.<sup>218</sup> But also because they link to the specific techniques discussed, for example spawning closures would form part of MSP, and so do not warrant detailed consideration in this context.

## B. Marine spatial planning

Marine spatial planning is a 'process to allocate space for specific uses that can help to avoid user conflicts, to improve the management of marine spatial claims, and to sustain an ecosystem-based management of ocean and seas.'<sup>219</sup> It 'brings together multiple users of the ocean... to make informed and coordinated decisions about how to use marine

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214 UNGA Resolution 69/292, (emphasis added).

215 Aichi Targets (n 202) Target 11; G Wright, J Rochette, E Druel and K Gjerde, 'The Long and Winding Road Continues. (n 17).

216 F Douvere, 'The importance of marine spatial planning in advancing ecosystem-based sea use management' (2008) 32 Marine Policy 762.

217 Ibid, 762.

218 A process whereby the nature is evaluated as an asset and incorporating its benefits into all coastal planning decisions, Conservation Gateway, 'Mapping Ocean Wealth'

<<https://www.conservationgateway.org/ConservationPractices/Marine/Area-basedManagement/mow/Pages/default.aspx>> accessed 29 April 2016.

219 F Maes, 'The international legal framework for marine spatial planning' (2008) 32 Marine Policy 797, 797.

resources sustainably.<sup>220</sup> Through ocean zoning, different areas of the marine environment can be allocated for different uses and for different levels of protection. Thus, areas exhibiting the relevant characteristics and vulnerabilities of the criteria described in 3.3.3 will be declared MPAs, while other areas, with less ecologically precious features, may be designated as a fisheries.<sup>221</sup> There is therefore an important relationship between MSP and other ABMT, MSP sits above these other techniques, guiding their appropriate and coordinated use.

Accordingly, MSP is intended to address the lack of integrated and strategic planning in relation to activities taking place in marine areas. In a White Paper for the UK Government, MSP was described as a technique to:

establish a more rational organization of the use of marine space and the interactions between its uses, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives in an open and planned way.<sup>222</sup>

MSP therefore helps improve decision-making as it balances competing demands on marine spaces,<sup>223</sup> balancing economic considerations with environmental conservation.<sup>224</sup> It is a key tool in establishing an ecosystems based approach to sea use management.<sup>225</sup> Further, MSP is in part intended to address some of the shortcomings of the exiting MPA regime,<sup>226</sup> for example, commentators have described it as a particularly helpful approach where there are gaps in available data.<sup>227</sup>

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220 S Cole, M José Ortiz and C Schwarte (n 156) 13.

221 J Arden and others 'Marine spatial planning in the high seas' (2008) 32 Marine Policy 832, 836

222 DEFRA, 'A sea change. A Marine Bill White Paper', March 2007 Cm 7047

<[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/228719/7047.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228719/7047.pdf)>

accessed 30 April 2016; F Douvere (n 209) 766

223 J Arden and others (n 221) 836.

224 N Ban and others 'Systematic conservation planning: a better recipe for managing the high seas for biodiversity conservation and sustainable use.' (2013) Conservation Letters 00, 5.

225 F Douvere (n 209) 763.

226 T Agardy, G Notarbartolo di Sciara and P Christie, 'Mind the gap: Addressing the shortcomings of marine protected areas through large scale marine spatial planning' (2011) 35 Marine Policy, 226.

227 J Arden and others (n 221) 836.

There is no explicit provision for MSP in either UNCLOS or the CBD, however there are some general obligations that provide support for it, in the same way that they provided general support for MPA. The preamble of UNCLOS states that ‘the problems of oceans space are closely interrelated and need to be considered as a whole’ and the duty to cooperate in the conservation and management of living resources emphasise the need to deal with ABNJ in a strategic, coordinated manner.<sup>228</sup> Other relevant articles that lend support for MSP include Article 123 and 150(b) both of which require states to cooperate in order to manage resources in ABNJ. As the CBD promotes an ecosystems approach to protecting biodiversity, it is therefore also possible to identify support for MSP from this instrument. A number of MSP initiatives are already in operation including the Pelagos Sanctuary discussed above (3.3.2.).

Finally, MSP is inextricably linked with EIA, because in order to be effective commentators have said that ‘MSP needs to be conducted as a continuous, iterative, and adaptive process and consists of at least three ongoing phases:’ planning and analysis, implementation, monitoring and evaluation.<sup>229</sup> This is a process that relies heavily on EIA to assist in planning and to monitoring of the marine area being managed.

### C. Marine conservation agreements

Marine conservation agreements were developed by NGOs who felt that the system of formal MPAs were insufficient to protect marine biodiversity. As with other ABMT there is a certain degree of definitional fluidity when it comes to MCAs, and thus some ABMT might not be labelled as MCAs but can certainly be regarded as MCA.<sup>230</sup> However, they can be broadly defined as:

Any formal or informal contractual arrangement that aims to achieve ocean or coastal conservation goals in which one or more parties (usually right-holders) voluntarily commit to taking certain actions, refraining from certain actions, or

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228 UNCLOS (n 7) Article 118.

229 F Douvère (n 216) 766.

230 The Nature Conservancy, ‘Marine Conservation Agreements: A Practitioners Toolkit’

<<http://www.mcatoolkit.org/Overview/Overview.html>> accessed 29 April 2016.

transferring certain rights and responsibilities in exchange for one or more other parties (usually conservation-oriented entities) voluntarily committing to deliver explicit (direct or indirect) economic incentives.<sup>231</sup>

MCA are intended to be a complementary ABMT to further strengthen the conservation capacity of MPAs, they can also act as a trigger for a formal MPA to be established. One of the crucial differences between MCA and MPAs however, it that they can directly engage private entities. This is a significant advantage as it possible for NGOs initiating these agreements to directly target actors likely to pose a threat to marine biodiversity rather than simply relying on State enforcement.

At present, commentary on MCA indicates that they only operate in areas within national jurisdictions, perhaps because it is easier to identify a relevant ‘rights holder’ with whom the agreement can be made. However, there is no reason why MCA cannot be adopted as an ABMT to protect BBNJ. Relevant rights holders might be contractors carrying out mining activities in the seabed or fishing vessels operating in the high seas.

#### **D. Closed fishing areas and no take zones**

The final ABMT considered here are fisheries closures and no-take zones. Although technically different techniques they do broadly the same thing—prohibit extraction activities—and so are considered together. Both are important management techniques in the context of BBNJ because fisheries depletion in particular is one the most fraught and serious threats to BBNJ. Fisheries closures and no-take zones are both follow as the result of a MPA designation, so could technically be regarded as MPAs. However, within the spectrum of ABMT they are distinguished from MPAs because designation as a no-take zone or closure has specific consequences. Closed fishing areas are linked to the designation of a VME as fishing closure applies to bottom fishing specifically. Designation of an area as a fishing closure prohibits the use of bottom trawling and tow fishing. No-take zones apply to all extractive practices, thus they apply to fishing, biomass removal and mining activities. This can include archaeological and scientific research These two forms of ABMT are essential for prescribing more precisely how a MPA ought to be managed in order to protect and conserve marine biodiversity.

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231 Ibid.

### ***3.3.4. Lessons and challenges for the use of area-based management tools in ABNJ***

Commentators have identified five challenges and lessons from the existing regime that are relevant to the development of any comprehensive international approach: (1) a lack of coverage, due to the fact that only a few regional agreements have a mandate that covers ABNJ; (2) there is a lack of coordination between the different sectoral regimes that operate area-based management tools; (3) linked to the lack of coordination, there is a lack of leadership to develop an overarching vision for how ABNJ should be managed or to champion the need to protect BBNJ; (4) there is a need for ecological coherence and shared scientific understanding; (5) there is a lack of capacity particularly on the part of regional organisations which lack resources to adequately manage MPAs.

In addition to these five challenges, there are a number of lessons that can be drawn from the existing framework of ABMT in ABNJ. As set out in section 3.2.2. there already exist several sets of scientific criteria that could be used for identifying MPAs, or similar areas, for example, EBSAs, VMEs or PSSAs. A new international agreement could utilise any one of these approaches, establish a new set of criteria inspired by them, or both. There is the possibility that the criteria could go beyond merely scientific factors so as to include areas of socio-economic, cultural, and educational importance. This is already the case for PSSAs. The IMO criteria for identification of PSSAs lists ‘social, cultural, and economic criteria’ and ‘scientific and educational criteria’ as two of the three categories for designation of a PSSA.

As to the manner in which an MPA might be proposed, options include: proposal by one or a number of States; by a specific body convened under the auspices of a new international agreement; or by NGOs or organisations with State support. Provision may be needed to ensure that a dedicated scientific body considers proposals and that they are officially endorsed by a Conference of the Parties (‘COP’) or relevant organisational meeting.

There are also many potential structures that could be implemented for the adoption of management plans and management measures for meeting the objectives of an MPA. Indeed, adoption of a management plan may not even be necessary; the focus being placed instead on the adoption of specific management measures. Alternatively, a proponent may be required to submit a management plan when proposing a MPA, or one could be subsequently developed and adopted by an organ of the international agreement, or a regional organization.

In any event, management measures will be an essential part of ensuring the effectiveness of the MPA and mechanisms for their adoption will need to be clear. Such mechanisms could include a proposal along with the MPA, or development by States

cooperating directly and through competent international, regional, and sectoral organisations. To this end, regional working groups or advisory bodies could be established to bring together States, competent organisations, scientists, and other stakeholders in order to consider the management of MPAs in a given region.

Finally, it should be highlighted that there is a need for more research on other forms of ABMT. These techniques are largely underdeveloped in practice and perhaps as a consequence there is little commentary on them, meaning that it is difficult to assess their efficacy to protect BBNJ and the efficacy of the instruments and processes that implement them.

### ***3.3.5. How area-based management tools apply to the specific threats identified***

Area-based management tools, in particular MPAs, are ideally suited to addressing two of the identified threats: depletion of fisheries and biomass and pollution arising from seabed activities. Indeed, such techniques are already in operation to address these threats. For example, fisheries closures operate to help address the damage caused to VME from bottom trawling and the ISA has already established a network of marine protection areas in the Clarion-Clipperton Zone in order to control seabed pollution. However, as already noted, the role that these techniques play in relation ocean acidification is less obvious. Such tools can only ever mitigate the problem, and further, given the current trend towards sector-based approaches little can be done to address ocean acidification which cause problems for an ecosystems approach.

Although this document has treated with scepticism the role that ABMT can play in tackling ocean acidification, there are some small ways in which these techniques can alleviate some aspects of the problem. For example, MSP can involve consideration of the effects of land based activities on the ocean, thus at least in theory MSP is able to take into account territory sources of pollution. Although it is not obvious how MSP can enforce prohibitions on land based CO<sub>2</sub> emissions, it is at least a technique that allows tertiary causes to be taken into account when considering the state of the oceans. Further, as the ocean acidification does not occur in a uniform manner—the colder Southern and Arctic oceans are more vulnerable to OA, whereas the Western South Pacific is high in aragonite saturation and thus is yet to suffer seriously from the impact of OA—ABMT might therefore be used to protect and build resilience in particularly affected areas or to immunise unaffected areas from the consequence of OA. Thus, although the connection between ABMT and OA is less obvious, as compared to the other two treats considered, they still play an important role in reducing aspects of the problem.

Finally, ABMT (and also EIA) will only be effective in addressing these threats in so far as these provisions are effectively enforced. This is particularly the case in relation to fisheries and biomass depletion with the prevalence of IUU. A concerted effort will need to be made to resolve the problems with the flag state system. Strengthening efforts such as PSMA will be essential to ensure that ABMT are effective in protecting BBNJ.

### ***3.3.6. Three proposed approaches***

As has been shown there already exists an extensive, although incomplete, network of regional and sectoral instruments that can designate MPAs and employ other ABMT. The problem however is that implementation and coordination of these different arrangements is weak. A new treaty could oversee these existing frameworks and enforce soft law protective measures as follows:

1. The first option would be for the proposed treaty to focus on MPA, only making implicit reference the other ABMT. The treaty would set out the relevant criteria for designation, based on the CBD's EBSA criteria. In order to capture the need for other ABMT the treaty could reiterate the importance of cooperation between States, perhaps highlighting the need for 'strategic cooperation' to open the way for soft law measures on MSP. In addition to reinforcing the need for State cooperation, the treaty could include reference to the need for cooperation between relevant organisations such as the CBD, IMO and IUCN. In this way, coordination of ABMT could be done by the organisations without a need to for a more comprehensive coordination effort. Soft law management measures for MPAs could be recommended by a new body of the treaty Finally, the treat *should* reference the importance of an ecosystems approach to marine protection, although this could be done in the preamble rather than in the body of the treaty.
2. The second option, would be the same as the first option in the sense that it would focus on MPA and include a legally binding criteria for designation. It would also include a provision on the importance of State cooperation, but could make explicit reference to MSP as a potential tool to achieve this. As distinct from the first option, the treaty would include a list of relevant management measures for MPA, including for example fisheries closures and no-take zones. In order to encourage cooperation, the treaty could establish an informal forum to coordinate and enable



marine protection efforts of existing organisations.<sup>232</sup> It could also assist with the identification and management of MPAs, fundraising, scientific assessments, monitoring, compliance and enforcement, as well as help encourage the use of other ABMT such as MCA.<sup>233</sup> The forum could also step in to provide advice and assistance, impose interim management measures where existing organisations are struggling to manage relevant MPAs. Compliance could also be achieved through enhancing existing compliance mechanisms such as the Compliance Committee under the Barcelona Convention and encouraging other organisations to establish their own compliance mechanisms.<sup>234</sup> The treaty should also reference the ecosystem approach, either in the preamble or the main body.

3. The third option would again focus largely on MPA, but could make explicit reference to alternative forms of ABMT to encourage their use, for example by referring to MSP as a possible way to improve State cooperation. As with the other options, the treaty would include legally binding criteria for designation. It could also include a list existing MPA in the body of the treaty, that can be modified by the treaty body. Importantly, this option would create a central institutional structure along similar lines to ISA to govern the operation of ABMT. This institution would have responsibility for coordination between existing MPA mechanisms and regional initiatives; monitoring protective measures; and ensuring compliance. It could also operate some form of incubator for voluntary ABMT initiatives such as MCA or SSC. The institution would also have a scientific body that could act as a repository for relevant scientific research on BBNJ, to help assist with designation decisions. Finally, the treaty should include express reference to the ecosystems approach in the main body, perhaps as part of the aim or purpose of the treaty.

In deciding between these approaches there are two important considerations that will have implications for the desirability and efficacy of each of these approaches: finance and capacity. It should be noted that these concerns will also be relevant to other legal approaches, including environmental impact assessment, so these considerations apply in the following section as well (3.4.5 in particular).

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<sup>232</sup> S Cole, M José Ortiz and C Schwarte (n 156) 32

<sup>233</sup> Ibid, 32.

<sup>234</sup> Ibid, 38.

Institutional arrangements to manage and regulate ABNJ will undoubtedly be expensive and so it will be necessary to think carefully about how much a particular option might cost and where funding might come from. The SSC, provides a novel example, as it is part financed by private donors. However, not all oceans will be able to attract the level of philanthropy that has been attracted by the ‘golden rainforest of the oceans’ (Sargasso Sea). Therefore, how to finance international coordination of these techniques will be an important consideration. One area of focus might be on why the Global Environment Facility does not fund many of these initiatives in spite having ‘international waters’ as a ‘funding window.’<sup>235</sup> Other possibilities that have been suggested include: mandatory contributions from States, shipping levies, levies on extraction of marine resources, market approaches and payments for access and benefit-sharing.<sup>236</sup> The financial concerns will obviously increase as the approach strengthens.

Related to financial considerations are issues of capacity (again this will be relevant to EIA). The efficacy of these AMBT will depend on the organisational structures available to consider, designate and manage MPAs, to deploy and manage other ABMT to ensure compliance with relevant management measures. It will also depend on the the availability and quality of scientific information about the relevant areas. There is therefore, a particular need for targeted capacity-building to develop mechanisms to share scientific research and understanding on the marine environment, so that ABMT can be deployed appropriately and effectively.

## 3.4. Environmental Impact Assessments

### 3.4.1. Overview

Environmental impact assessment, including Strategic Environmental Assessment (SEA),<sup>237</sup> is an important tool of international environmental law<sup>238</sup> that operates on the basis that ‘decisions relating to the environment should be made in light of a

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<sup>235</sup> Ibid, 29

<sup>236</sup> Ibid, 37

<sup>237</sup> EIAs are directed at assessing the impact of projects whereas SEAs are designed to assess the impacts of policy decisions.

comprehensive understanding of their effects.’<sup>239</sup> Rather than automatically prohibiting certain activities, EIAs ensure that decision-makers are apprised of all the relevant environmental impacts of certain activities—thus their focus is procedural rather than substantive.<sup>240</sup>

EIA has great potential in relation to at least two of the threats already identified. As has already been noted earlier, EIA has already emerged as a tool for addressing particular threats to BBNJ, for example exploration of the seabed. However, the impact that EIA in ABNJ can have in relation to ocean acidification is less obvious. Whilst an EIA might identify a particular problem with OA and thus lead a decision-maker not to prohibit a certain activity in that area, it cannot address the root cause of the problem, only the effects. The suitability of EIA for these three threats will be considered further below in section 3.3.4.

### **3.4.2. The current legal regime for EIA in ABNJ**

#### **A. Introductory remarks**

As already noted, the current regime for EIA in ABNJ is fragmented and manifests on a sectoral and regional basis. The fragmentation is such that there is even fragmentation within sectors, for example there are guidelines on conducting EIA for deep sea fishing but not fishing of the high seas.<sup>241</sup> This section surveys the international legal landscape in relation to EIA. It identifies provisions and instruments that deal specifically with ABNJ as well as instruments that do not apply to ABNJ but provide a good example of how a new instrument might deal with EIA in ABNJ. It examines the broad-brush approach to EIA found in UNCLOS, the more detailed international legal instruments whose relationship to ABNJ is tangential and the regional and sectoral instruments that include EIA provisions. Before commencing with this however, it is first helpful to set out the basic elements of an EIA.

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238 As recognised by the ICJ in the *Pulp Mills on the River Uruguay (Argentina v Uruguay)* (Merits) ICJ Reports 2010, p.3

239 N Craik, *The International Law of Environmental Impact Assessment* (CUP 2008) 4

240 Ibid, 5.

241 R. Warner, 'Tools to conserve ocean biodiversity: developing the legal framework for environmental impact assessment in marine areas beyond national jurisdiction' (2012) 26 *Ocean Yearbook* 317.

The process of conducting an EIA can be split into a number of different stages. The International Association for Impact Assessment (IAIA), a best-practice network for the use of impact assessment, have defined the EIA process in terms of ten steps: screening; scoping; examination of alternatives; impact analysis; mitigation and impact analysis; evaluation of significance of impacts that cannot be mitigated; preparation of an environmental impact statement ('EIS') (including public consultation); review of EIS; decision-making; follow up.<sup>242</sup> Others have defined the steps of EIA differently, for example one commentator describes only six steps.<sup>243</sup> However the IAIA model teases out the various different elements of EIA that can be identified in most international EIA agreements. The importance placed on each of these sections can vary depending on the legal instrument or context that the EIA requirements are found in.<sup>244</sup> For example, in the EU context where there is a significant interest in public participation, great importance is placed on public notification and consultation and accordingly there are detailed legal provisions to ensure that participation is broad and effective.<sup>245</sup> Whereas in the Madrid protocol, where the concern is to meticulously protect a fragile ecosystem, the screening requirements are rigorous and the threshold set for whether scoping should be undertaken is low.

## B. International EIA instruments

At present there are no detailed, global and legally-binding requirements with regards to EIA in ABNJ, and certainly none that set out the steps for EIA in ABNJ. Instead, there is a very general obligation under Article 206 of UNCLOS that requires States to assess the potential effects of proposed activities under their jurisdiction or control where they have reasonable grounds for believing that they may cause significant harmful changes to

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242 International Association for Impact Assessment <<http://www.iaia.org>> accessed 30 April 2016

243 Screening; scoping; reporting; public notification and consultation; decision-making; post-decision monitoring. R Warner, 'Tools to conserve ocean biodiversity: developing the legal framework for environmental impact assessment in marine areas beyond national jurisdiction' (n 241).

244 E Druel, 'Environmental impact assessment in areas beyond national jurisdiction' (2013) Studies N°01/13, IDDRI Paris, France 42 p.

245 For example, UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 28 June 1998, entered into force 30 October 2001) 2161 UNTS 447 (Aarhus Convention).

or pollution in the marine environment.<sup>246</sup> States, however, have a wide discretion as this requirement is tempered by the phrase ‘as far as practicable.’ Thus, Article 206 reiterates an already established aspect of international environmental law—the importance of conducting EIAs, but does nothing to elaborate on how they should be conducted. The general requirement to conduct EIA in ABNJ was confirmed by the ITLOS Advisory Opinion in 2011.<sup>247</sup> However, the tribunal also referred to the ICJ judgment in the *Pulp Mills* case, confirming that general international law does not ‘specify the scope and content of an environmental impact assessment.’<sup>248</sup>

Supplementing these general requirements therefore, there are a number of instruments that deal with EIA in the international arena, which provide guidance as to how a bespoke EIA regime might be developed in relation to ABNJ. Alongside this loose EIA commitment, there is also a requirement on States to monitor the risks or effects of pollution on the marine environment<sup>249</sup> and to publish reports from the monitoring of marine pollution.<sup>250</sup> Accordingly, even though all the steps of EIA, identified above, are not defined in UNCLOS, it does at least appear to include requirements to monitor and notify.

The United Nations Environment Programme: Goals and Principles of EIA (‘UNEP Principles’) specify the minimum requirements for an EIA,<sup>251</sup> the sorts of mechanisms States can use to determine whether an activity is likely to have a significant environmental impact,<sup>252</sup> and imposes a requirement of justification for any decision taken.<sup>253</sup> In particular, there is an emphasis on the need to take into account impacts that extend beyond areas of national jurisdiction.<sup>254</sup> The UNEP Principles adopt a due diligence approach,<sup>255</sup> which when coupled with the international law duty to prevent transboundary harm<sup>256</sup> (embodied in UNCLOS Part XII),<sup>257</sup> means that, if significant harm is likely to be caused to the marine environment in ABNJ, the State conducting the

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246 Neil Craik, ‘Principle 17: Environmental Impact Assessment’ in J E Viñuales (eds) *The Rio Declaration on the Environment: A Commentary* (OUP 2015), 458.

247 ITLOS Advisory Opinion 2011 (n 49) paras 141-150.

248 *Pulp Mills Case* (n 230) para 205.

249 UNCLOS (n 7) Article 204.

250 UNCLOS (n 7) Article 205.

251 United Nations Environment Programme Goals and Principles of EIA (adopted 17 January 1987) (UNEP Principles). Principle 4 e.g. a description of the proposed activity and a description of practical alternatives.

252 Ibid, Principle 5, Principle 7.

253 Ibid, Principle 9

proposed activity would be under a positive duty to mitigate or refrain from the proposed activity.<sup>258</sup> In this way, the requirement to conduct an EIA in a transboundary context can impose substantive as well as procedural obligations.<sup>259</sup>

Addressing biodiversity specifically, the CBD requires its Contracting Parties to introduce appropriate procedures requiring EIA of projects likely to have a significant adverse effect on biological diversity.<sup>260</sup> Once projects are identified, Contracting Parties are required to monitor such activities,<sup>261</sup> irrespective of whether the impacts are understood to be in areas within or beyond their national jurisdiction.<sup>262</sup> Further, States are encouraged to exchange information and consult on activities that are likely to have a transboundary effect on ABNJ.<sup>263</sup> The CBD have also introduced more detailed, scientific guidance on EIA through their Voluntary Guidelines for the consideration of biodiversity in environmental impact assessments. These guidelines are developed specifically with biodiversity in mind and thus represent a ‘best practice standard for EIA’ of activities with the potential to impact biodiversity.<sup>264</sup> They also represent a best practice standard in the sense that they have defined broadly the same procedural steps as those defined by

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254 Ibid, Principle 1: minimum requirement to include an indication of whether a proposed activity with effect ABNJ; Principle 11: encourages States to conclude bilateral, regional or multilateral arrangements so as to provide reciprocal notification exchange of information and agreed upon consultation on the potential environmental effects of activity under their control or jurisdiction which are likely to significant affect other States or ABNJ.

255 R Warner, ‘Environmental assessment in marine areas beyond national jurisdiction’ in R Rayfuse (eds) *Research Handbook on International Marine Environmental Law* (Edward Elgar 2015), 294.

256 Declaration of the United Nations Conference on the Human Environment (adopted 16 June 1972) 11 ILM 1416 (Stockholm Declaration) Principle 21; Principle 2, Declaration of the United Nations Conference on Environment and Development (adopted 14 June 1992) 31 ILM 874 (Rio Declaration); ICJ Advisory Opinion on the Legality of the Treat or Use of Nuclear Weapons;

257 L Duvic-Paoli and J E Viñuales, ‘Principle 2: Prevention’ in J E Viñuales (eds) *The Rio Declaration on the Environment: A Commentary* (OUP 2015)121.

258 R Warner, ‘Tools to conserve ocean biodiversity: developing the legal framework for environmental impact assessment in marine areas beyond national jurisdiction’ (n 233).

259 Craik, *The International Law of Environmental Impact Assessment* (n 231) 54, 77 and 224

260 CBD (n 2) Article 14(1)(a)

261 CBD (n 2) Article 7(c)

262 CBD (n 2) Article 4(b)

263 CBD (n 2) Article 14(1)(c)

IAIA. Of particular note, the CBD identifies four approaches to the screening stage of EIA: (i) a list of activities; (ii) a list of geographical areas (linking with EBSA criteria); (iii) expert judgment; and (iv) a combination of list and expert judgment. However, as these guidelines are voluntary they do not address issues of governance or implementation of such a scheme.<sup>265</sup>

The Espoo Convention is a dedicated international law instrument that focuses specifically on EIA.<sup>266</sup> Although it does not require EIAs to be carried out in ABNJ it does provide a 'detailed template' for the impact assessment of transboundary effects in marine areas.<sup>267</sup> It lists activities that are likely to cause significant transboundary effect and sets out criteria for assessing the likelihood of activities having transboundary effect. For example, the location of a proposed activity might increase the need for an EIA, particularly if the area in question is 'located in or close to an area of special environmental sensitivity or importance.'<sup>268</sup> Note therefore that there is an overlap with EIA and area-based management tools such as marine protected areas discussed earlier. The Espoo Convention is also accompanied by the Kiev Protocol on Strategic Environmental Assessment ('SEA') which requires States to evaluate the environmental impact of their plans and policies. In the present context it is important to consider this strategic approach to EIA, as threats such as fisheries depletion and ocean acidification are more likely to be caused by policy decisions than by individual project proposals.

There are a number of other international legal instruments that are of relevance to EIA of ABNJ, which are referenced but not discussed here for the sake of brevity. They include: the 1979 Convention on the Conservation of Migratory Species of Wild Animals;<sup>269</sup> the 2006 Agreement for the Conservation of Albatross and Petrels;<sup>270</sup> the 1996 Agreement on the Conservation of Cetaceans of the Black Sea Mediterranean Sea and Contiguous

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264 R Warner, 'Tools to conserve ocean biodiversity: developing the legal framework for environmental impact assessment in marine areas beyond national jurisdiction' (n 243).

265 Ibid.

266 Convention on Environmental Impact Assessment in a Transboundary Context (adopted 25 February 1991, entered into force 10 September 1997) 1989 UNTS 309 (Espoo Convention). The Espoo Convention is one of only two formally binding treaties that set out detailed requirements for the conduct of EIA, Craik, *The International Law of Environmental Impact Assessment* (n 231) 101.

267 R Warner, 'Tools to conserve ocean biodiversity: developing the legal framework for environmental impact assessment in marine areas beyond national jurisdiction' (n 243).

268 Espoo Convention (n 266) Annex III.

269 CMS (n 193).

Atlantic Area;<sup>271</sup> and the 1991 Agreement on Small Cetaceans of the Baltic and North Seas.<sup>272</sup> Each of these agreements imposes obligations to conduct EIA, and sometimes SEA, which may have an impact on ABNJ, given that the species that they deal with may be found in either the high seas or the Area.

### C. Sectoral and regional EIA instruments

In addition to these international legal instruments there are sector and region specific instruments that also include detailed EIA requirements. The most developed EIA requirements are those that relate to the seabed: bottom trawling and seabed mining. Other sectors with more general EIA requirements include dumping from ships and ocean fertilization. There is also a broad requirement under which States must assess the impacts of fishing, other human activities and environmental factors on target stocks and species in the UN Fish stocks agreement, but this has only been fleshed out in respect of bottom trawling.<sup>273</sup>

The 2009 FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas (Deep Sea Fisheries Guidelines) provide a detailed EIA framework for EIA of bottom trawling.<sup>274</sup> They were developed in response to the UNGA Resolution 61/105 which called on States to prevent significant adverse impacts on VME and to better regulate the practice of bottom fishing, and potentially stop it occurring in VME.<sup>275</sup> The Guidelines require EIA to be undertaken where there is a risk of significant adverse impact on VMEs. Unusually in international law they define significant adverse impacts<sup>276</sup> and list factors to determine the scale and significance of an impact.<sup>277</sup> They also detail the

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270 Agreement for the Conservation of Albatross and Petrels (adopted 19 June 2001, entered into force February 2004) (ACAP)

271 Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (adopted 24 November 1996, entered into force 1 June 2001) 2183 UNTS 321 (CCBSMSCAA).

272 Agreement on Small Cetaceans of the Baltic and North Seas (adopted 13 September 1991, entered into force 29 March 1994) 1772 UNTS 217 (ASCOBANS).

273 Fish Stocks Agreement (n 81) Article 5(d).

274 2009 FAO International Guidelines for the Management of Deep Sea Fisheries in the High Seas (Deep Sea Fisheries Guidelines) <<http://www.fao.org/docrep/011/i0816t/i0816t00.HTM>> accessed 30 April 2016.

275 UNGA Res 61/105 (8 December 2006) UN Doc A/res/61/105.

276 Ibid, paragraph 17.

277 Ibid, paragraph 18



content of the EIA, for example requiring it to identify, describe and map VMEs likely to occur in the area in question, and impose general management conditions, such as the need to develop data collection and research programmes.<sup>278</sup> The Guidelines are implemented with varying degrees of success within RFMO. For example, there is disagreement over whether EIA should be carried out in to existing bottom fisheries.<sup>279</sup> And even though there are detailed guidelines as to what constitutes a significant adverse impact, different standards are applied within different regions. Thus demonstrating that even with detailed guidelines as to how an EIA should be conducted, the reliance on regional and State implementation still leaves room for inconsistency of application.

With respect to seabed mining, the need for EIA is contemplated in both UNCLOS and in the 1994 Implementing Agreement to Part XI.<sup>280</sup> Indeed, the ISA have already implemented a ‘well developed framework’ of EIA,<sup>281</sup> that has been affirmed and elaborated by ITLOS in its aforementioned 2011 advisory opinion. The three Regulations that are already part of the Mining Code require that an applicant submit a description of the programme for oceanographic and environmental baseline studies, a preliminary assessment of possible impact on the marine environment and a description of proposed measures to prevent, reduce or control pollution and other hazards, in order for planned exploration work to gain approval.<sup>282</sup> In respect of the two later sets of Regulations, there is also a specific requirement to assess environmental impact of proposed exploration activities on marine biodiversity. Supplementing these regulations, the ISA have also issued Guidelines on the assessment of possible environmental impacts arising from exploration of the Area.<sup>283</sup> These Guidelines list activities which do and do not require

<sup>278</sup> Ibid, paragraph 21-22.

<sup>279</sup> E Druel, (n 244) 25.

<sup>280</sup> UNCLOS (n 7) Article 145; Section 1, Article 7

<sup>281</sup> R Warner, ‘Conserving Marine Biodiversity in beyond Boundaries: Developing Environmental Impact Assessment Frameworks’ in S Marsden (eds) *Transboundary Environmental Governance* (Routledge 2016).

<sup>282</sup> Polymetallic Nodules Regulations (n 40) Regulation 18; Polymetallic Sulphide Regulations (n 41) Regulation 20; Cobalt Rich Crusts Regulations (n 40) Regulation 20

<sup>283</sup> Recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for marine minerals in the Area (adopted 26 July 2013) ISBA/19/LTC/8 <[https://www.isa.org.jm/sites/default/files/files/documents/isba-19ltc-8\\_0.pdf](https://www.isa.org.jm/sites/default/files/files/documents/isba-19ltc-8_0.pdf)> accessed 29 April 2016.

EIA,<sup>284</sup> the information the EIA must contain<sup>285</sup> as well as the measurements and observations contractors must make during and after the performance of a particular activity.<sup>286</sup>

The Legal and Technical Commission of the ISA has a mandate to assess the environmental implications of proposed activities in the Area, and so the decision-making stage of the EIA process is overseen by an expert body. Accordingly, there is a notable difference in the way that this framework is able to operate as compared to the deep seas fisheries framework. As the ISA, supported by the due diligence obligation of States, is able to directly supervise and make decisions in respect to EIA requirements, there is a consistency of approach as compared to fisheries arrangements which rely on State delegated oversight for their effective implementation. This is a result of two different levels of ABNJ which are governed by two different principles: freedom of the high seas *v.* common heritage. Thus the ISA are empowered with a jurisdiction to tightly regulate and monitor EIA requirements that other international organisations lack, given their dependence on State jurisdiction.

Other sectors that engage EIA provisions include shipping and ocean fertilization, both of which have already been referred to in the discussion of the specific threats. In the context of shipping, both the London Convention and the later London Protocol impose EIA requirements for dumping. The London Convention imposes EIA, permitting an ongoing monitoring prior to the dumping of non-prohibited wastes. And in reverse, the London Protocol prohibits dumping except in respect of five listed categories of substances which are then subject to EIA, permitting and monitoring requirements. The London Protocol, sets out the assessment procedure and substantive requirements of the EIA in Annex III. These requirements include, the need to assess the alternatives, a detailed description of the waste in question and information on the proposed waste site along with an assessment of potential effects. Further to these requirements, Contracting Parties have developed Guidelines for all wastes included in the Protocols Annex I list.

There have also been specific measures imposed in the context of ocean fertilization which is prohibited except for the purposes of scientific research. These guidelines arose from international concern about the lack of information on the effects of ocean fertilization and thus embody the precautionary approach. Any plan to conduct scientific

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284 Ibid, section IV, A and B.

285 Ibid, section II, C.

286 Ibid, section IV, C, D, E.

research into ocean fertilization will need to comply with prescribed EIA requirements.<sup>287</sup> All proposals must engage with a two-step process to first identify whether it constitutes legitimate scientific research and then, if it does, to comply with an EIA that imposes risk management and monitoring requirements. These requirements will soon be imposed as part of a mandatory risk assessment framework adopted as an amendment to the London Protocol.

Alongside these sectoral arrangements there are also EIA requirements implemented through both UNEP and non-UNEP regional treaties. Of the three UNEP treaties that apply to ABNJ, only the Barcelona Convention and Nouméa Convention contain explicit EIA provisions.<sup>288</sup> Although neither convention implements a detailed EIA regime, relying on States for this implementation, both emphasise the importance of cooperation between States in conducting EIAs<sup>289</sup> and the Barcelona Convention makes specific reference to ABNJ. Although the OSPAR Convention does not contain an explicit EIA commitment,<sup>290</sup> the OSPAR Commission has produced a Code of Conduct for Responsible Marine Research in the Deep-Seas and High Seas of the OSPAR Maritime Area which requires risk assessments to be undertaken for research carried out in areas that contain particular threatened species or habits. The Commission is also initiating collaborative arrangements between relevant authorities in order to implement EIA requirements for the MPA in ABNJ that they have instituted.

The Madrid Protocol, which is outside of the UNEP scheme, has a particularly rigorous approach to EIA which requires some form of EIA to be carried out in the context of any activity conducted in the treaty area. The screening process involves two steps with different options depending on the first step. The first step requires a preliminary assessment of whether or not an activity has more than a minor or transitory

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287 Assessment Framework for Scientific Research Involving Ocean Fertilization (adopted on 14 October 2010)

LC 32/15 Annex 6 <<https://docs.google.com/file/d/0BxLMteFpPQ08cHNsYzVjSDNUaUE/edit?pref=2&pli=1>> accessed 30 April 2016, 5-19.

288 The Nouméa Convention (n 15) only contains a general commitment to EIA along similar lines to that found in UNCLOS (n 7) Article 16.

289 Barcelona Convention (n 12) Article 4(3)(d); Nouméa Convention (n 15) Article 16(3).

290 The OSPAR Convention (n 14) refers to EIA in ambiguous terms, e.g. Article 2(1) requires Contracting Parties to take 'necessary measures to protect the maritime area against the adverse effects of human activities' and in Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area, the OSPAR Commission has the duty to 'develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measure...'

impact. If it does not, an initial environmental evaluation must be carried out at a national level. If it does, then a comprehensive environmental evaluation must be carried out under the supervision of the Committee of Environmental Protection of the Madrid Protocol and all other Contracting Parties to the Convention. This multi-level approach might usefully be adopted in the proposed instrument on BBNJ, particularly in light of the proposed network of MPAs, as such protected areas might warrant an enhanced EIA process under the supervision of a designated international institution and all other areas would require a lighter version of the EIA, supervised by States.

Finally, there are also EIA requirements in respect of the Arctic as ministers of Arctic countries adopted Guidelines for Arctic EIA.<sup>291</sup> The Guidelines require that ‘EIA should be applied to activities associated with the exploitation of both renewable and non-renewable natural resources, public use, military activities and the developments and infrastructure for different purposes that may cause significant environmental impacts.’<sup>292</sup> These guidelines do not apply directly to ABNJ, although they do require transboundary impacts to be taken into account when conducting EIA in relation to the prescribed activities.

#### D. National EIA instruments

There are a number of other domestic and transnational EIA regimes that that could provide inspiration for a new instrument on BBNJ, for example, the US, EU and Australia.<sup>293</sup> In the EU environmental assessments are based on two directives—the EIA Directive<sup>294</sup> and the SEA Directive.<sup>295</sup> The EIA Directive employs two routes to assessment. The first relies on a list of activities which give rise to a mandatory EIA and the second, a list of activities that might give rise to an EIA at Member States discretion,

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291 Finish Ministry of Environment, ‘Arctic Environmental Protection Strategy 1997: Guidelines for Environmental Impact Assessment in the Arctic’ Sustainable Development and Utilization <[https://www.unece.org/fileadmin/DAM/env/eia/documents/EIAGuides/Arctic\\_EIA\\_guide.pdf](https://www.unece.org/fileadmin/DAM/env/eia/documents/EIAGuides/Arctic_EIA_guide.pdf)> accessed 30 April 2016.

292 Ibid.

293 Environment Protection and Biodiversity Conservation Act 1999.

294 Council Directive 2011/92/EU of 13 December 2011 on the assessment of the affects of certain public and private projects on the environment [2011] OJ L 26.

295 Council Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment [2001] OJ L 197.

depending on certain criteria, the use of natural resources such as biodiversity or the absorption capacity of the marine environment. Thus the EIA Directive demonstrates how threshold criteria might be tailored to address specific marine biodiversity concerns. The SEA Directive does not rely on a list of specific plans like the EIA Directive. Instead it imposes mandatory environmental assessment requirements with regards to certain plans, e.g. agricultural, that might set the framework for future development consents of projects listed in the EIA Directive, or, where one is required under the Habitats Directive.<sup>296</sup> In this way, the SEA Directive illustrates the importance of coordinating legal techniques.

Finally, both the World Bank and the European Bank of Reconstruction and Development (EBRD) impose EIA requirements on the activities they choose to fund.<sup>297</sup> The World Bank requires EIAs for projects that are likely to have ‘significant adverse impacts that may be sensitive, irreversible, and diverse’ and the EBRD requires EIAs for projects with the potential to cause environmental impacts outside the area occupied by the project, for example. Thus if States or private actors apply to either bank to fund proposed activities in ABNJ, the proposed activities will be subject to the international EIA procedures.

## **E. A summary of the different approaches**

By way of a summary of the current regime for EIA and ABNJ, it is possible to identify three aspects of the regime that manifest a variety approaches within specific instruments: the screening stage; the content of the environmental impact statement; and the management of the EIA process. This summary will be helpful for the final part of this section 3.3.5, the identification of three possible approaches, as it summaries the different options available.

As has been show in section 3.3.2 there are a number of ways to decide whether an EIA should be undertaken, by listing activities that will automatically generate an EIA requirement, by identifying particular geographical areas, by setting threshold criteria for the impact of those actives, or through a combination of a list/area designation and associated threshold criteria. There are of course advantages and disadvantages of these different approaches. The list approach to screening is simple, and eliminates the risk of

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296 Council Directive (EC) 92/43 on the conservation of natural habitats and of wild fauna and flora [1992] OJ L 206 (Habitats Directive).

297 As the EBRD funds private as well as public actors, this EIA route is another way for an international body to directly supervise the EIA commitments of private actors.

regional differences in the interpretation of criteria, as lists do not leave room for discretionary application of EIA requirements. A geographical approach is advantageous because it can be tied to existing MPA areas, and thus these complimentary legal techniques can be used to enforce each other. However, as has been seen, new activities can emerge as having impacts on the marine environment, but if they are not included on the relevant list then they can be conducted without the need to assess the EIA, e.g. bioprospecting. Thus, although lists can offer both clarity and simplicity, reliance on lists means that EIA provisions cannot react to new threats and thus risks continuing the problem of sectoral fragmentation identified above.

The content of any given EIS varies depending on the requirements of the different EIA instruments. To a certain extent this nuance is necessary because different activities will have different consequences and therefore will require the consideration of different pieces of information. For example, the standard clause for exploration contracts imposed by the ISA, requires contractors to provide a statement based on meteorological information, a requirement that is likely to be unnecessary in the context of a fisheries. Even so, it is still possible to identify minimum standard for the EIS. A good example of a set of minimum requirements are those found in Appendix II of the Espoo Convention. Minimum requirements include: a description of the proposed activity and its purpose, a description of reasonable alternatives, a description of the environment likely to be effected, and a description of the mitigation measures that can be used to reduce any adverse impacts.

As can be seen from the above discussion, there are a number of different ways to manage and monitor EIA requirements, by placing the responsibility on individual States,<sup>298</sup> to management by a specially constituted body,<sup>299</sup> or through a combination of both.<sup>300</sup> Reliance on State implementation has exacerbated the fragmentary system of EIA in ABNJ. Given that more stringent application of EIA requirements are likely to have significant cost implications, particularly in ABNJ as they are more difficult to access in order to assess and monitor, it is not in States interests to employ rigorous EIA procedures. However, a specially constituted body such as the ISA would likely become overloaded if required to be responsible for the management of all EIA requirements. A two-tier approach to management, with corresponding two-tier screening process, as in the Antarctic Treaty System, could ensure that the management of activities likely to have the

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298 To monitor issues such as fisheries or marine pollution.

299 Madrid Protocol (n 54).

300 For example, in relation to the seabed which is governed both by the ISA and on a regional basis.

most significant impact are properly and consistently supervised by a specially constituted management body, and that activities with a more minor impact are monitored by states. Thus freeing up capacity for the overseeing body.

### **3.4.3. Lessons and challenges for EIA in ABNJ**

The fundamental problem with the existing regime of EIA for ABNJ is that it lacks a ‘default international law framework or network of institutions.’<sup>301</sup> This is problematic for a number of reasons. In the first place, the consequent overreliance on sectoral arrangements allows certain activities, such as the laying of submarine cables, ecotourism, bioprospecting and marine geo-engineering to fall through the cracks.<sup>302</sup> Further, even with a comprehensive network of sectoral instruments, it is likely that new activities that might adversely affect BBNJ may arise, as bioprospecting and marine geo-engineering have, that are not contemplated by existing arrangements. Therefore, any new agreement ought to consider the possibility that new and as yet unidentified ocean activities may develop. It would therefore be advisable to ensure that the EIA provisions are able to account for new activities that might have a significant impact on BBNJ. This can be done by adopting a threshold approach to the screening phase of the EIA rather than, or in addition to, a list approach.

The lack of an overriding framework also provides a considerable challenge to the governance of EIA in ABNJ. As shown by the EIA regime governing deep-sea fisheries, regional implementation of even a very detailed instrument has led to varying standards of approach.<sup>303</sup> Without a coordinated authority, it would appear that the system of EIA for ABNJ will remain ‘fragmentary and disjunctive.’<sup>304</sup> Accordingly, there is a need for a single

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301 R Warner, ‘Oceans Beyond Boundaries: Environmental Assessment Frameworks’ (2012) 27 *The International Journal of Marine and Coastal Law* 482.

302 Other activities not covered include, oil and gas exploration, marine scientific research, survey activities, deep sea tourism and military activities. ‘Oceans Beyond Boundaries: Environmental Assessment Frameworks’ (n 208); K Gjerde ‘Regulatory and Governance Gaps in the International Regime for Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction’ (2008) IUCN Environmental Policy and Law Papers online, Marine Series N°1, <[https://cmsdata.iucn.org/downloads/iucn\\_marine\\_paper\\_1\\_2.pdf](https://cmsdata.iucn.org/downloads/iucn_marine_paper_1_2.pdf)> accessed 30 April 2016.

303 E Druel (n 244) 26.

304 Ibid.

authority, with technical expertise, perhaps along similar lines to the Legal and Technical Commission of the ISA. This need not be the case for all EIAs. As noted earlier in our discussion, the approach to EIA taken by the Madrid Protocol provides a useful template. In the Madrid Protocol, activities with only a minor or transitory impact are subject to a national environmental evaluation and those with more than a minor or transitory impact are subject to the oversight the Protocol's Committee of Environmental Protection.

Related to this, there is also a need to coordinate the different legal techniques that might be applied to protecting BBNJ. The application of more stringent EIA requirements in respect of MPAs would strengthen their protection and perhaps facilitate better governance of the EIA regime. MPA might require a low threshold test to trigger EIA requirements along similar lines 'minor or transitory' test employed by the Madrid Protocol. A multi-level approach that imposes different requirements in relation to different sorts of commitment, along similar lines to the EU EIA regime, provides both clarity with respect to activities giving rise to mandatory and nuance to consider certain threshold criteria that might exacerbate certain activities to trigger an EIA.

A further challenge for EIA in the context of ABNJ is the challenge of identifying relevant stakeholders to be integrated at the consultation phase of the EIA. There is a need to consider carefully which stakeholders ought to participate. In a regional context other contracting States or those whose waters might be affected by certain activities will be obvious candidates for consultation. However, in areas of ABNJ not covered by regional instruments, identifying stakeholders will be less straightforward. This is not just a problem of geographical impact but also about the value of contribution. In a terrestrial context, it is important to consult individual citizens as they are able to speak to the impacts of the proposed activity. As it is not possible to include the citizens of the oceans in a consultation process, there will be a need to identify and encourage relevant entities (including NGOs, scientific bodies and perhaps commissioners representing the environment and/or future generations) who might be able to contribute to the consultation.

There is also need to consider both cumulative impacts of activities and to assess impacts more strategically. Cumulative impacts are those that 'results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions.'<sup>305</sup> Whilst some instruments include the need to assess the

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305 Council on Environmental Quality Regulations for Implementing the procedural provisions of the National Environmental Policy Act (USA) <[https://ceq.doe.gov/ceq\\_regulations/regulations.html](https://ceq.doe.gov/ceq_regulations/regulations.html)> accessed 30 April 2016, section 1508.7.



cumulative impacts of activities, for example in relation to deep-sea fisheries or in the Antarctic Treaty System, in most cases the requirement to consider cumulative impacts is rare.<sup>306</sup> Similarly, strategic environmental impact assessment is beginning to emerge in the context of ABNJ, for example the CBD Voluntary Guides contemplate both EIA and SEA requirements in respect to marine biodiversity. But again, SEA is only considered in a few of the instruments in the existing regime of EIA in ABNJ.

Finally, it is helpful to have a general objective or set of principles against which the outcome of the EIA can be evaluated, in order to assist decision-makers in deciding whether to permit certain activities. Within the Antarctic Treaty system, Article 3 sets out criteria which activities conducted in the Antarctic should avoid, for example adverse effects on climate or weather patterns, or adverse effects on air or water quality. One commentator has variously suggested adopting a ‘zero-biodiversity loss’ approach<sup>307</sup> and an approach based on the precautionary principle that only permits human activities that will not lead to further erosion of biodiversity,<sup>308</sup> and other commentators have suggested ‘no net environmental deterioration’ backed up by the precautionary principle.<sup>309</sup> Including an objective standard can help to ensure consistency of approach particularly if the management of the EIA system is regional or State based.

#### ***3.4.4. How EIA might apply in the context of the specific threats identified***

As already noted, EIA procedures already operate to varying degrees in respect of two of the threats identified—seabed pollution and fisheries depletion. In respect of the seabed the regime is fairly well evolved, and in respect of fisheries and biomass depletion there are isolated instances of EIAs being adopted to address the problem. With respect to OA however, the role that EIA can play seems limited. The following considers in more detail the extent to which EIA can address the three threats discussed in Section 2.

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306 E Druel (n 244).

307 Ibid, 34.

308 E Druel, R Billé and S Treyer, ‘A legal scenario analysis for marine protected areas in areas beyond national jurisdiction’ (2011) *Stuies N°06/2011. IDDR*, 2011. 28 p.

309 S Jay and others ‘Environmental Impact Assessment Retrospect and Prospect’ (2007) 27 *Environmental Impact Assessment Review* 287, 298.

As discussed earlier, potentially harmful activities in the Area are covered by two independent regimes: the ISA Regulations; and the Deep Sea Fisheries Guidelines. The ISA Regulations already require those engaging in extractive activities to carry out an EIA and EIA has been deemed by ITLOS as an essential for States to demonstrate due diligence in sponsoring entities to carry out activities on the seabed. In relation to bottom trawling, EIAs operate alongside fisheries closures as part of a mosaic of protection for VME. EIA is required in for bottom trawling, in areas of the seabed not sufficiently fragile to be designated as VME, demonstrating how different legal approaches can work together to provide comprehensive protection. Accordingly, EIA is already entrenched in the task of address seabed pollution.

As far as fisheries and biomass depletion more generally are concerned, there is no single regime for EIA. Without a coordinated approach EIAs may be conducted independently of each other, and develop on the basis of an inaccurate picture of the marine environment. Fisheries might therefore be more appropriately dealt with via SEA. Indeed, within the EU, fisheries are listed under the SEA Directive. Requiring States and RFMO to conduct SEA before making decisions in respect of fisheries, could ensure, for example, that the migratory and straddling nature of many species is properly taken into account. Of course, EIA along with all other regulatory measures intended to conserve BBNJ, will be ineffective at directly addressing the problem of IUU, as someone engaged in illegal fishing is unlikely to feel the need to conduct an EIA before embarking on their illegal activities. However, SEA could require RFMO to source accurate information on the impact of IUU and take proper account of its consequences when making decisions.

The impact that any ocean specific legal technique can have in relation to ocean acidification is limited. The same must be said of EIA in ABNJ. The main source of the problem of OA—excessive, anthropogenic CO<sub>2</sub> emissions—is land-based, thus the way to address the problem will also need to be land-based. This can already be seen in relation to terrestrial EIA regimes, for example the EU Directive requires States to consider the absorption capacity of the marine environment in deciding whether Annex II activities should be subject to EIA requirements. However, as stated in section 3.2, there are a number of smaller scale, ocean-based management techniques that can at least alleviate the problem.<sup>310</sup> These techniques may therefore be subject to EIA requirements. Most prominently, ocean fertilisation designed to absorb excess CO<sub>2</sub> and thus reduce OA (and global warming), are subject to very strict EIA requirements under the dumping regime of

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310 R Billé, 'Taking Action Against Ocean Acidification: A Review of Management and Policy Options' (2013) 52 *Environmental Management* 761, 761.

both the London Convention and the Protocol.<sup>311</sup> This is to ensure that the consequences and efficacy of these techniques are properly understood, thus EIA in this context does not operate to address the threat of OA directly. Another way in which EIA might be used to address OA is by including specific OA considerations as part of the content of an environmental statement, for example an indication of how activities might affect the pH of the ocean.<sup>312</sup> Strategic environmental assessment, particularly if used in conjunction with marine special planning, might also help to address broader policy and planning decisions that impact OA. Finally, the extent to which EIAs address other threats, such as fisheries depletion, will also help to tackle OA, as healthy fish populations are essential to reducing OA.<sup>313</sup>

### ***3.4.5. Three proposed approaches***

As in previous sections, this final section will suggest three approaches to EIA that might be adopted in the case of a new agreement designed to address BBNJ.

1. The first option would be for the treaty to contain a list of activities to which EIA requirements apply and to set out the minimum content of the environmental statement. But that would still require further detail in domestic law. The EIA process would however be managed entirely by domestic authorities. Further, the requirements set out in the treaty could be expressly described as a floor and not a ceiling, thus empowering States to employ more elaborate EIA requirements. This treaty would add some flesh to the bones of Article 206 of UNCLOS and capture activities not yet covered by existing instruments, e.g. marine geo-engineering and thus address some of the concerns with regards to fragmentation of the existing system, but without the need to constitute an expensive management or compliance body for EIA.
2. The second option would be a treaty employing a threshold test for the screening stage of the EIA, for example ‘minor or transitory effect’ or ‘significant adverse impact.’ The treaty would set out the relevant criteria for determining whether an

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311 Resolution LC-LP.1 On the Regulation of Ocean Fertilization (adopted on 31 October 2008), LC 30/16 Annex 6 <[http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Documents/LC.%20LDC%20-%20London/LC-LP%201\(30\).pdf#search=ocean%20fertilization](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Documents/LC.%20LDC%20-%20London/LC-LP%201(30).pdf#search=ocean%20fertilization)> accessed 29 April 2016.

312 R Billé (n 310) 769.

313 Ibid, 769.

activity had a significant adverse impact. The treaty could also set out the minimum criteria for the content of the EIS, perhaps adopting those set out in the Espoo Convention. However, management of the EIA process would be devolved entirely to States, within this broad framework. In order to ensure compliance and consistency of approach there could be some form of limited oversight by a compliance committee along similar lines to that instituted by the Aarhus Convention.<sup>314</sup> States and interested NGOs (e.g. NGOs with a specific remit to protect marine biodiversity) would be able to report issues of non-compliance of other States to the compliance committee. The role of this committee would not be to oversee the EIA process itself, rather to review the EIA procedures of States and to identify where States have failed to comply with their obligations.

3. The third option would be a multi-level EIA which would combine a list of activities (Annex I) along with threshold tests for another list of activities (Annex II) and with a dedicated regime for EIAs in the context of MPAs. The treaty would detail both the list of activities and the threshold criteria but would allow States to govern the operation of EIAs in relation to Annex II activities or activities in MPAs that have minor or transitory effects. In the cases of Annex I activities and any activity in a MPA that will have more than a minor or transitory effect, there would be a dedicated environmental protection scientific body that would manage the operation of EIA. The scientific and technical body could either operate as an independent entity along similar lines to the ISA, or as a subsidiary body to the Conference of the Parties, akin to the Committee of Environmental Protection of the Madrid Protocol in the Antarctic Treaty. As with the second option, there could also be a compliance committee to ensure that where EIA management is delegated to States, there is still a consistent management approach.

There will be financial and capacity implications for each of these approaches, as identified above (3.3.6). Where the burden for supervising and implementing EIA requirements falls on States, it is likely that developing States will need financial assistance to institute these requirements. In the case of options 2 and 3, the oversight bodies will need to be adequately resourced and thus there is a significant cost involved.

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<sup>314</sup> Svitlana Kravchenko, 'The Aarhus Convention and Innovations in Compliance with Multilateral Environmental Agreements' (2007) 18 *Colorado Journal of International Environmental Law and Policy*

Thinking about legal approaches in the round, another way to determine whether an EIA should be conducted would be through combining EIA requirements with MPA designations. Thus rather than a specific activity giving rise to an EIA, the location of activities would necessitate the carrying out of EIA. Again this form of designation could be combined with threshold criteria as is the case in the Madrid protocol.

## **4. THE WAY FORWARD**

The aim of this legal scan has been to identify the most relevant instruments relating to the governance of BBNJ and, more specifically, to the three threats discussed in the companion scientific scan. However, given the breadth of the areas covered it is likely that there will be gaps. We hope that workshop participants will be able to help: (i) consider the major existing legal frameworks set out here that address the three selected threats; (ii) build upon the scan to suggest additional, or more appropriate, options with respect to ABMT and EIA; (iii) identify other legal techniques that might address the three threats, specifically in relation to ocean acidification; (iv) consider the institutional and implementation of these various proposals, specifically as concerns the identification (or establishment) of a relevant authority as well as the provision of capacity building and finance.

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