The BBNJ Agreement: Strengthening the Oceans-Climate Nexus?

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Abstract

This paper explores the question of whether and to what extent the BBNJ Agreement, currently under negotiation under the auspices of the UN, will provide opportunities to develop and support measures relating to the mitigation of, and adaptation to, the impacts of climate change and ocean acidification on high seas biodiversity and ecosystems. While there are obvious connections between the BBNJ Agreement and climate change, particularly in respect of the parts relating to area-based protection and environmental impact assessment, this paper examines more generally the extent to which the BBNJ agreement provides an opportunity to connect the law of the sea and the climate regime, and to integrate climate concerns into high seas decision-making affecting biodiversity and ecosystems.

1. Introduction

This paper explores the ocean-climate nexus in the context of the proposed internationally 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 (ILBI). The ILBI – often referred to as the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement – is arguably the most significant global oceans instrument to be negotiated in almost 30 years, and proposes to "ensure the [long-term] conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction through effective implementation of the relevant provisions" of the 1982 United Nations Convention on the Law of the Sea (UNCLOS).[1] Work exploring options for managing activities in areas beyond national jurisdiction (ABNJ) began as early as 2004,[2] but it was a decade before the BBNJ working group recommended to the United Nations General Assembly (UNGA) that an internationally legally binding instrument (ILBI) be adopted.[3] A Preparatory Committee (PrepCom) was established by the UNGA in 2015[4] and, in 2017, the UNGA decided to convene an intergovernmental conference, under the auspices of the UN, to consider the recommendations of the PrepCom.[5] The Intergovernmental Conference was slated to run for four sessions. The third session took place in August 2019, but the fourth session has been postponed at the time of writing owing to the

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[1] Revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A.CONF.232/202/3 (18 November 2019), Art 2 [hereinafter, ILBI Draft Text] available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/N19/372/88/PDF/N1937288.pdf?OpenElement.

[2] UNGA, *Report on the Work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea,* 5th Meeting, UN Doc. A/59/122 (2004); UNGA Res. 59/24 *Oceans and the Law of the Sea* (17 November 2004) [73].

[3] *Letter dated 13 February 2015 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly* A/69/780 (2015).

[4] UNGA Res. 69/292, *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*, (19 June 2015).

[5] UNGA Res. 72/249, *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 Statement of financial implications*, (24 December 2017). See the *Report of the Preparatory Committee established by General Assembly resolution 69/292: 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/AC.287/2017/PC.4/2 (2017).

COVID-19 pandemic. Nevertheless a comprehensive revised draft text of the ILBI was circulated by the President of the Intergovernmental Conference in November 2019.[6]

Over the twenty years or so that the work relating to the BBNJ Agreement has been undertaken, understanding of the impacts of climate change and ocean acidification on the oceans has increased. Impacts include, but are not limited to, sea level rise, coral bleaching, toxic algae events, latitudinal abundance shifts in marine species including fisheries, reduced biodiversity and decline in fish populations owing to falling oxygen levels, and an increase in the number of extreme weather events.[7] Although more is known about the potential impacts of climate change on coastal water ecosystems, it is generally acknowledged that climate change and ocean acidification are significant threats to the deep ocean, in particular, to deep seafloor ecosystems and cold water corals and sponges.[8] The Second World Ocean Assessment, released in 2021,[9] highlighted the increase in marine heat waves over the last two decades that can penetrate multiple hundreds of metres into the deep ocean and which have affected all ocean basins.[10] The authors estimate that marine heat waves have doubled in frequency between 1982 and 2016.[11] It is predicted that rising ocean temperatures may lead to enhanced stratification, nutrient limitation and shifts towards small phytoplankton, and this will impact pelagic species.[12] The Assessment also highlights the potential impact of ocean acidification, including changes in gene expression, physiology, reproduction and behaviour with particular risk to deep-water corals.[13]

The climate-oceans nexus, while increasingly understood from a scientific and ecological perspective, has yet to fully underpin legal-policy approaches to climate change and oceans governance.[14] This paper will explore the climate-oceans nexus in the context of the BBNJ Agreement and examine the extent to which this instrument is likely to address mitigation of and adaptation to the impacts of climate change on the oceans. It will highlight the specific references to climate change and ocean acidification in the current draft of the Agreement and focus on the two areas where these two issues are most relevant: area-based protection and environmental impact assessment. This paper will conclude, however, with the observation that while there is potential in the BBNJ Agreement to integrate climate issues more effectively into the conservation of biodiversity and ecosystems beyond national jurisdiction, it is unlikely to do so owing to a lack of ambition and to resistance by some negotiating states.

2. The Climate-Oceans Nexus

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[6] ILBI Draft Text, note 1.
[7] See generally, *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H-O Pörtner, DC Roberts, V Masson-Delmotte et al.] (1999) available at: https://www.ipcc.ch/srocc/ especially chapters 4, and 5.
[8] NL Bindoff, WWL Cheung, JG Kairo et al., "Changing Ocean, Marine Ecosystems, and Dependent Communities" in *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate,* ibid, 448, 486 – 492.
[9] United Nations, *The Second World Ocean Assessment, Volumes I and II* (2021) available at: https://www.un.org/regularprocess/woa2launch.
[10] Ibid, Volume II, 58.
[11] Ibid.
[12] Ibid, 62.
[13] Ibid, 63 – 64.
[14] See for example, Karen N. Scott, "Climate Change and the Oceans: Navigating Legal Orders" in Myron H. Nordquist, John Norton Moore, and Ronán Long (eds), *Legal Order and the World's Oceans: UN Convention on the Law of the Sea* (Koninklijke Brill, Leiden) (2017) 124. For a comprehensive discussion of the ocean-climate nexus see: Jan McDonald, Jeffrey McGee and Richard Barnes (eds), *Research Handbook on Climate Change, Oceans and Coasts* (Edward Elgar, 2020); Elise Johansen, Signe Veireud Busch and Ingvild Ulrikke Jakobsen (eds), *The Law of the Sea and Climate Change. Solutions and Constraints* (CUP, 2021).

There is no comprehensive, overarching global strategy or regime that addresses the impacts of climate change and ocean acidification on the oceans. Rather, this issue is the subject of what is commonly described as a regime complex: functionally overlapping parallel regimes and institutions that are non-hierarchical but which nevertheless affect one another's sphere of operations.[15] Obligations to mitigate climate change, including emissions reductions, are largely confined to the climate change regime, comprising the 1992 United Nations Framework Convention on Climate Change (UNFCCC),[16] 1997 Kyoto Protocol[17] and 2015 Paris Agreement.[18] However, the climate change regime is primarily focused on the atmosphere and has historically marginalised the oceans. While the climate system is defined under the 1992 UNFCCC as "the totality of the atmosphere, *hydrosphere*, biosphere and geosphere and their interactions",[19] climate change is defined as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global *atmosphere*…".[20] Although the oceans constitute the largest sink for carbon dioxide (CO_2),[21] the focus of the climate regime has been on forests and other land-based sinks in the context of climate change mitigation.[22] The emission reduction targets under the 1997 Kyoto Protocol allowed parties to choose from 'basket' of six (increased to seven)[23] greenhouse gases in order to meet the global commitment of a reduction in greenhouse gas emissions of 5 percent below 1990 levels,[24] but no specific targets were set in respect of CO_2, the principal cause of ocean acidification. Under the 2015 Paris Agreement, parties determine their own commitments at the national level in order to meet the Agreement's overarching objective to limit global temperature rise to 2° C with the aim of limiting the rise to 1.5° C.[25] The legally binding temperature target of 2° is generally agreed to be too high in the context of ocean temperature rise,[26] and there is no equivalent target relating to ocean pH.

States party to the 1982 United Nations Convention on the Law of the Sea (UNCLOS)[27] are under a general obligation to protect and preserve the marine environment,[28] to prevent pollution from

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[15] See further K. J. Atler and S. Meunier, "The Politics of International Regime Complexity" (2009) 7 *Perspectives on Politics* 13; T. Gehring and B. Faude, "The Dynamics of Regime Complexes: Microfoundations and Systemic Effects" (2013) 19 *Global Governance* 119.

[16] United Nations Framework Convention on Climate Change (UNFCCC), adopted on 9 May 1992, entered into force 21 March 1994, 1771 UNTS 107.

[17] Kyoto Protocol to the United Nations Framework Convention on Climate Change, adopted on 11 December 1997, entered into force 16 February 2005, 2303 UNTS 214.

[18] Paris Agreement on Climate Change, adopted on 12 December 2015, in force 4 November 2016, (2016) 55 *ILM* 743.

[19] 1992 UNFCCC, Art 1(3) [emphasis added].

[20] 1992 UNFCCC, Art 1(2) [emphasis added].

[21] M Rhein et al, 'Observations: Ocean' in T F Stocker et al (eds), *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge, Cambridge University Press 2013) 255, 260.

[22] 1992 UNFCCC, Art 4(2)(a) and 1997 Kyoto Protocol, Art 4(2)(a).

[23] The list of greenhouse gases under the 1997 Kyoto Protocol was amended in Doha in 2012. See Decision 1/CMP.8 (2012) *Amendment to the Kyoto Protocol pursuant to its Article 3, paragraph 9 (the Doha Amendment)*.

[24] 1997 Kyoto Protocol, Article 3(1).

[25] 2015 Paris Agreement, Article 2.

[26] See OD Hoegh-Guldberg, M Jacob, M Taylor, et al., "Impacts of 1.5°C Global Warming on Natural and Human Systems" in *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [VP Masson-Delmotte, HO Zhai, D Pörtner, et al. (eds)] (2018) available at: https://www.ipcc.ch/sr15/ 221 – 235.

[27] United Nations Convention on the Law of the Sea (UNCLOS), adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 397.

[28] 1982 UNCLOS, Art 192.

any source,[29] and to specifically adopt laws and regulations to prevent, reduce and control pollution from land-based sources[30] and from or through the atmosphere.[31] These obligations provide a clear mandate for states to address climate change and ocean acidification, and, arguably states have a due diligence obligation to take such action.[32] However, outside of the specific context of vessel-source air emissions,[33] parties to UNCLOS have largely left such action to the climate change regime. Thus, climate change and ocean acidification and, in particular, their mitigation, have largely fallen between the climate and the ocean regimes.

This legal-policy disconnect in the ocean-climate nexus is, however, changing. Increasingly, regional fisheries management organisations and regional seas organisations are considering the implications of climate change in the context of fisheries or ocean management.[34] The UNGA, in its 2020 resolution on oceans and the law of the sea, commended the efforts of the 25th conference of the parties (COP) to the UNFCCC to "the mainstreaming of issues relating to the ocean and climate nexus into the relevant multilateral ocean and climate change processes."[35] This momentum was carried forward by COP 26 in Glasgow in 2021. The Glasgow Climate Pact notably invites the Chair of the Subsidiary Body for Scientific and Technical Advice to hold an annual dialogue, beginning in 2022, in order "to strengthen ocean-based action".[36] More generally, the Pact calls on relevant work programmes and constituted bodies under the UNFCCC to "consider how to integrate and strengthen ocean-based action in their existing mandates."[37] Importantly, from an oceans perspective, the Glasgow Pact strengthened the commitment to limit temperature increases to 1.5° compared with 2°[38] and, for the first time, introduced a specific target to reduce CO_2 by 45 percent by 2030 relative to 2010 levels and to net zero around mid-century.[39] This is specifically relevant to ocean acidification, which is largely caused by excess emissions of CO_2. Equally relevant is the first explicit reference to fossil fuels (a significant source of CO_2), although the call to "phase out unabated coal power" was weakened to "phasedown"[40] during the final stages of the negotiation.[41]

As, arguably, the most important global instrument of application to biodiversity beyond national jurisdiction, the negotiation of the BBNJ Agreement provides an opportunity to deepen and strengthen the ocean-climate legal-policy nexus. The indications thus far, however, indicate that this may be an opportunity missed.

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[29] 1982 UNCLOS, Art 194(1).
[30] 1982 UNCLOS, Art 207.
[31] 1982 UNCLOS, Art 212.
[32] See Karen N. Scott, "Ocean Acidification: A Due Diligence Obligation under the LOSC?" 35 (2020) *International Journal of Marine and Coastal Law* 382. On the relationship more generally between Part XII of UNCLOS and climate change see Alan Boyle, "Protecting the Marine Environment from Climate Change. The LOSC Part XII Regime" in Elise Johansen, Signe Veireud Busch and Ingvild Ulrikke Jakobsen (eds), note 14, 81.
[33] See International Convention for the Prevention of Pollution from Ships as modified by the Protocol of 1978 Relating Thereto (MARPOL 73/78), adopted on 2 November 1973, entered into force 2 October 1983, 1340 UNTS 62, Annex VI.
[34] See Erik J. Molenaar, "Integrating Climate Change in International Fisheries Law" in Elise Johansen, Signe Veireud Busch and Ingvild Ulrikke Jakobsen (eds), note 14, 263.
[35] UNGA Res. 75/340 (2020) *Oceans and the Law of the Sea* [56].
[36] Decision -/CP.26 *Glasgow Climate Pact* (2021) [61].
[37] Ibid, [58].
[38] Ibid, [16].
[39] Ibid, [17].
[40] Ibid, [20].
[41] Valerie Volcovici, "How a dispute over coal nearly sank the Glasgow Climate Pact" *Reuters*, 15 November 2021 available at: https://www.reuters.com/business/cop/how-dispute-over-coal-nearly-sank-glasgow-climate-pact-2021-11-14/.

3. The BBNJ Agreement, Climate Change and Ocean Acidification

In advance of the postponed fourth negotiating session for the ILBI, in November 2019, the Chair of the BBNJ negotiations released a revised draft text of the proposed Agreement.[42] It is anticipated that the Agreement will cover four broad areas relating to the conservation and sustainable use of biodiversity in ABNJ: marine genetic resources including questions relating to the sharing of their benefits; area-based management tools including marine protected areas; environmental impact assessment (EIA); and capacity building and transfer of technology.[43] The Agreement explicitly operates within the framework of UNCLOS and is intended to implement the relevant provisions of UNCLOS in order to ensure the conservation and sustainable use of biodiversity.[44]

It is clear from the draft text that neither climate change nor ocean acidification are priority issues for the Agreement. Although identified early on by the working group as "an area of concern for oceans and biodiversity",[45] the focus has been on their relevance to ecosystem resilience and area-based measures rather than as stand-alone issues.[46] Thus, the Agreement will not provide for express obligations to mitigate climate change and ocean acidification, notwithstanding their status as significant threats to biodiversity and ecosystems beyond national jurisdiction. This is unsurprising. The BBNJ Agreement is designed to support and work in conjunction with existing sectoral and regional agreements,[47] which would include the climate regime. Although it might be argued that the climate regime does *not* in fact adequately address the impacts of climate change and ocean acidification on the oceans, and is therefore not sufficient to comply with the due diligence obligations under UNCLOS to prevent marine pollution,[48] there has never been any serious discussion about developing specific mitigation obligations under the Agreement. Similarly, there is no indication that the BBNJ Agreement will expressly regulate activities that seek to exploit the oceans in order to mitigate climate change, such as marine geoengineering. There is in fact no overarching regime applicable to marine geoengineering, although the 1996 Protocol to

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[42] ILBI Draft Text, note 1.

[43] Ibid. For an overview of issues and progress relating to the BBNJ negotiations see: Robin Warner, "Conserving Marine Biodiversity in Areas Beyond National Jurisdiction: Co-Evolution and Interaction with the Law of the Sea" in Donald R. Rothwell, Alex G Oude Elferink, Karen N. Scott et al., (eds), *The Oxford Handbook of the Law of the Sea* (OUP, Oxford, 2015) 752; Rachel Tiller, Elizabeth De Santo and Elizabeth Mendenhall et al., "The Once and Future Treaty: Towards a New Regime for Biodiversity in Areas Beyond National Jurisdiction" (2019) 99 *Marine Policy* 239; Elizabeth M De Santo, Elizabeth Mendenhall, Elizabeth Nyma, et al., 'Stuck in the middle with you (and not much time left): the third intergovernmental conference on by adversity beyond national jurisdiction'(2020) 117 *Marine Policy* 103957.

[44] ILBI Draft Text, note 1, Art 2.

[45] Nilifur Oral, 'Ocean acidification: falling between the legal cracks of UNCLOS and the UNFCCC?' (2018) 45 *Ecology Law Quarterly* 9, 27.

[46] Ibid. See also Joanna Mossop, "Ocean acidification and a new treaty on marine biodiversity in areas beyond national jurisdiction" in David L VanderZwaag, Nilüfer Oral and Tim Stephens, *Research Handbook on Ocean Acidification Law and Policy* (Edward Elgar, 2021) 61, 67; Christian Pip, "Integrating Climate Change in the Goverance of Areas beyond National Jurisdiction" in Elise Johansen, Signe Veireud Busch and Ingvild Ulrikke Jakobsen (eds), note 14, 336, 342 – 345; Siddharth Shekhar, Kristina Maria Gjerde, "The ocean, climate change and resilience: making ocean areas beyond national jurisdiction more resilient to climate change and other anthropogenic activities" (2020) 122 *Marine Policy* 104184.

[47] ILBI Draft Text, note 1, Art 4.

[48] I have argued this elsewhere in Karen N. Scott, note 32.

the 1972 London Convention[49] regulates ocean fertilization for scientific purposes[50] and does provide a potential platform from which to regulate other forms of marine geoengineering.[51] Marine geoengineering for climate – or indeed any other purpose – however, will not be directly addressed by the BBNJ Agreement, although the Agreement's provisions relating to environmental impact assessment and area-based protection are likely to be indirectly relevant to future marine geoengineering activities.

Nevertheless, the draft text of the Agreement does currently explicitly refer to both climate change and ocean acidification in a number of different places. The first reference is in the definition section of the draft Agreement (draft Article 1) in the context of the definition of "cumulative impacts" as "[impacts on the same ecosystems resulting from different activities, including past, present or reasonably foreseeable activities, or from the repetition of similar activities over time, including *climate change*, *ocean acidification* and related impacts.]"[52] It is notable that the entire definition is in square brackets, indicating a current lack of consensus among negotiating states on this draft article. Draft Article 5 sets out General [principles] [and] [approaches] and includes a strong endorsement of ecosystem resilience, defined as "[a]n approach that builds ecosystem resilience to the adverse effects of *climate change* and *ocean acidification* and restores ecosystem integrity".[53] Both threats are also explicitly identified in draft Article 14, which sets out the objectives of area-based management measures, including marine protected areas (MPA) under the Agreement. Draft sub-paragraph E, which in its entirety is currently in square brackets, exhorts states to "[[r]ehabilitate and restore biodiversity and ecosystems, including with a view to enhancing their productivity and health and building resilience to stressors, including those related to *climate change*, *ocean acidification* and marine pollution;]".[54] The indicative criteria for the identification of areas appropriate for protection includes, in draft paragraph F, vulnerability, including to *climate change* and *ocean acidification*.[55] Indirectly, a number of the principles and/ or approaches endorsed or proposed for inclusion in the Agreement under draft Article 5 are strongly supportive of directly considering climate change and ocean acidification in decision-making. These include, in addition to ecosystem resilience, an ecosystem approach, the precautionary [principle] [approach] and [an integrated approach].[56]

What emerges from these express references to climate change and ocean acidification, as well as from the PrepCom negotiations,[57] is that these threats are most relevant to decision-makers in the context of area-based protection and environmental impact assessment.

(a) The BBNJ Agreement, Climate Change and Area-based Management

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[49] Protocol to the London Convention on the Prevention of Maine Pollution by Dumping of Wastes and Other Matter, adopted on 8 November 1996, entered into force 24 March 2006, (1997) 36 ILM 1.
[50] The Protocol was amended in 2013 in order to prohibit ocean fertilization activities for any purpose other than scientific research. See the 1996 London Protocol, Art 6*bis* and Annexes 4 and 5. The amendments have yet to enter into force.
[51] 1996 London Protocol, Art 1(5*bis*) and Art 6*bis* (1) as amended in 2013 (amendments not yet in force).
[52] ILBI Draft Text, note 1, Art 1(6) [emphasis added].
[53] ILBI Draft Text, note 1, Art 5(h) [emphasis added]. See generally, Catherine Blanchard, Carole Durussel, Ben Boteler, "Socio ecological resilience and the law: exploring the adaptive capacity of the BBNJ agreement" (2019) 108 *Marine Policy* 103612.
[54] ILBI Draft Text, note 1, Art 14(E) [emphasis added].
[55] ILBI Draft Text, note 1, Annex I(f) [emphasis added]. At the time of writing, Annex I in its entirely is in square brackets, indicating a current lack of consensus on the text of the draft.
[56] ILBI Draft Text, note 1, Art 5 (f), (e) and (g).
[57] Nilifur Oral, note 45, 28.

Thus far, the part of the BBNJ Agreement that most actively responds to the risks posed by climate change and ocean acidification is Part III, which sets out the provisions relating to area-based management tools, including marine protected areas. While less politically fraught than the issue of access to and benefit sharing of deep-sea marine genetic resources, the question of area-based protection on the high seas is arguably more legally complex.[58] Issues yet to be resolved through negotiation include the impact of area-based protection on traditional high seas freedoms such as navigation and fishing, and the relationship between area-based protection under the BBNJ Agreement and comparable measures under other global and regional instruments.

The 2019 draft text defines an "area-based management tool" as "a tool, including a marine protected area, for a geographically defined area through which one or several sectors or activities are managed with the aim of achieving particular conservation and sustainable use objectives [and affording higher protection than that provided in the surrounding areas]."[59] At the time of writing all the objectives of area-based protection are listed in square brackets, but will potentially include: the promotion of a "holistic and cross-sectoral approach" to ocean management/ conservation; the establishment of a system of ecologically representative marine protected areas; the designation of areas that support food security, safeguard aesthetic, natural or wilderness values and that create scientific reference areas for baseline research.[60] As noted above, draft Article 14(e) refers to the designation of protected areas for the rehabilitation and restoration of biodiversity and ecosystems in order to build resilience to stressors, including those related to climate change and ocean acidification. Areas requiring protection "shall be identified on the basis of the best available [science] [scientific information and relevant traditional knowledge of indigenous peoples and local communities], the precautionary [approach] [principle] and an ecosystem approach."[61] Specifically, vulnerability, "including to climate change and ocean acidification" comprises one of 21 indicative criteria that can be used in order to identify areas to be protected.[62] Thus, if adopted as per the current draft, the BBNJ Agreement will be the first global instrument to provide an undisputed legal mandate for the establishment of area-based conservation measures beyond national jurisdiction with the objective of enhancing ecosystem resilience in the context of climate change and ocean acidification.[63]

At the time of writing, the process of establishing protected areas has yet to be decided. Currently there is disagreement on whether a BBNJ institution (such as a conference of parties) will have a mandate to designate protected areas generally or, more likely, in areas that are not covered by any existing organization or regime, or whether the BBNJ agreement will rely on existing institutions to designate protected areas, with its role confined to a coordinating or advisory body.[64] Therefore, while a mandate to designate marine protected areas or other area-based measures in order to respond to the threats of climate change and ocean acidification and to increase ecosystem resilience is likely to be created under the Agreement, the extent to which that mandate will be implemented depends, to a large extent, on how active BBNJ institutions are permitted to be in

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[58] See Karen N. Scott, "Area-based Protection Beyond National Jurisdiction: Opportunities and Obstacles" 4 (2019) *Asia-Pacific Journal of Ocean Law and Policy* 158, 173 – 180.
[59] ILBI Draft Text, note 1, Art 1(3).
[60] ILBI Draft Text, note 1, Art 14.
[61] ILBI Draft Text, note 1, Art 16(1).
[62] ILBI Draft Text, note 1, Annex I. It should be noted that the text of Annex I is currently in square brackets.
[63] On the contribution that MPAs may make to enhancing ecosystem resilience in the context of climate change see: Ingvild Ulrikke Jakobsen, "Marine Protected Areas and Climate Change" in Elise Johnasen, Signe Veierud Busch and Ingvild Ulrikke Jakobsen (eds), note 14, 234; Danielle Smith, "A global network of MPAs: an important tool in addressing climate change" in Jan McDonald, Jeffrey McGee and Richard Barnes (eds), note 14, 425.
[64] ILBI Draft Text, note 1, Art 19 at the time of writing provides for the three alternative models in its draft text.

designating or coordinating the designation of such protection. Positively, the draft Agreement provides for a process of monitoring and periodic review by the Scientific and Technical Body and a process whereby the Conference of the Parties may decide to extend, amend or revoke area-based management tools on the basis of an adaptive management approach, taking into account best available science, traditional knowledge, the precautionary [principle] [approach] and an ecosystem approach.[65] The inclusion of regular review and adaptive management is crucial in the context of area-based protection in dynamic ecosystems and in the context of climate change where the nature of the impact of warming and acidifying oceans will inevitably lead to changes in ecosystem nature and function.

Nevertheless, taken as whole, Part III of the BBNJ Agreement, as currently drafted, is arguably wholly inadequate in supporting area-based protection for climate change and ocean acidification purposes.

First, notwithstanding the endorsement of an ecosystem approach, it is unclear, at the time of writing, whether fisheries will be excluded from the general mandate of the BBNJ Agreement.[66] In terms of ecosystem impact, fishing is undoubtedly the most important activity taking place on the high seas. Implementing area-based protection in order to enhance ecosystem resilience against climate change and ocean acidification would arguably be undermined if such measures are not also able to address fisheries.

Second, the BBNJ Agreement makes no reference to climate refugia in the area-based measures objectives in Part III of the 2019 draft or in the criteria for selecting areas for protection in draft Annex I. Climate refugia refer to areas or ecosystems that are not currently impacted by or are believed to be resilient to climate change and ocean acidification, and therefore should be protected in order to manage other activities in order to create climate refuges.[67] Although it could be argued that draft Article 14(e), which refers to "building resilience to stressors, including those related to climate change [and] ocean acidification", is broad enough to permit the designation of climate refugia, its emphasis on "rehabilitat[ing] and restor[ing] biodiversity and ecosystems" may preclude its application to ecosystems that are currently healthy and resilient. A more robust approach to climate resilience would explicitly provide for a right if not an obligation to create climate refugia.

Finally, the 2019 draft BBNJ Agreement does not adequately address the inherent tension between the static nature of an area-based measure and the highly dynamic nature of the ocean environment, exacerbated by the impacts of climate change and ocean acidification. Although, as noted above, the draft Agreement does provide for a process of review, and also refers briefly to the concept of adaptive management, it is unlikely that these provisions will prove adequate in face of the level of change likely to occur as a consequence of climate change and ocean acidification. In this context it is useful to refer to a recent assessment of area-based management tools in the north Atlantic, which was highly critical of the relatively well-developed network of area-based protection in the region, finding that the majority of measures adopted are likely to become redundant or less fit for purpose within the next 15 to 20 years owing to climate change.[68]

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[65] ILBI Draft Text, note 1, Art 21.

[66] See B Haas, M Haward, J McGee et al., "Regional fisheries management organizations and the new biodiversity agreement: Challenge or opportunity?" 22 (2021) *Fish and Fisheries* 226.

[67] See Kendall R. Jones, Carissa J. Klein, Benjamin S. Halpern et al., 'The Location and Protection, Status of Earth's Diminishing Marine Wilderness' (2018) 28 *Current Biology* 2506, 2506.

[68] David Johnson, Maria Adelaide Ferreira and Ellen Kenchington, "Climate change is likely to severely limit the effectiveness of deep-sea ABMTs in the north Atlantic"' (2018) 87 *Marine Policy* 112, 119.

This was primarily because, notwithstanding references to climate change in the relevant regimes, the area-based management measures are "still being applied on the basis of contemporary environmental conditions and habitat distributions."[69] The authors recommended the application of adaptive management, a focus on ecosystem function[70] and the identification of refugia so that "areas that are not currently seen as high biomass or density areas for a species of conservation interest… [are] included in the implementation of ABMTs to safeguard against climate change."[71] More generally, there is increasing recognition that area-based management must be temporally and biologically as well as spatially adaptive.[72] In addition to an explicit mandate for such an approach, this form of adaptive management also requires responsive and expert-based institutional infrastructure that can review and adapt area-based measures as appropriate. The current draft of the BBNJ Agreement not only adopts a narrow, spatially focused definition of area-based protection, but is also unlikely to establish decision-making bodies with the appropriate mandate and expertise to respond to the challenges posed by climate change and ocean acidification.

(b) The BBNJ Agreement, Climate Change and Environmental Impact Assessment

The second area in which the BBNJ agreement can potentially contribute towards measures related to climate change and ocean acidification is environmental impact assessment and strategic environmental assessment as set out in draft Part IV of the Agreement.[73] As is the case for area-based protection, much of Part IV of the draft Agreement remains in square brackets and there are significant differences between the alternative proposed obligations relating to the nature and extent of an EIA, the threshold at which an EIA is required and the relationship between the BBNJ agreement and other international and regional instruments as they relate to EIA. Depending on the decisions made between these alternative texts, the impacts of climate change and acidification on the oceans could be important factors to consider in the assessment of activities within or affecting ABNJ, or entirely peripheral to such processes.

In contrast to Part III of the draft BBNJ Agreement, there is no explicit reference in draft Part IV to climate change and ocean acidification. However, Article 21bis, which sets out the objectives of the Part, expressly refers to the consideration of cumulative impacts when carrying out an EIA.[74] As noted above, cumulative impacts, as defined in draft Article 1(6), includes "climate change, ocean acidification and related impacts". Moreover, draft Article 25 is devoted to the issue of cumulative impacts, which "shall [, as far as possible,] be [taken into account] [considered] in the conduct of environmental impact assessments."[75] This would create, for the first time, an express obligation to consider climate change and ocean acidification as part of the EIA for all activities carried out in ABNJ.

Unsurprisingly, the question of which activities in ABNJ are subject to EIA processes under the Agreement is contested. The first option would require an EIA when states have reasonable grounds to believe that activities under their jurisdiction or control may cause substantial pollution

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[69] Ibid, 113.
[70] Ibid, 120.
[71] Ibid.
[72] See Guillermo Ortuño Crespo, Joanna Mossop, Daniel Dunn et al., 'Beyond static spatial management: scientific and legal considerations for dynamic management in the high seas' (2020) 122 *Marine Policy* 104102.
[73] See generally, Robin Warner, "Oceans in transition: incorporating climate change impacts into environmental impact assessment for marine areas beyond national jurisdiction" (2018) 45 *Ecology Law Quarterly* 31.
[74] ILBI Draft Text, note 1, Art 21bis [(b)]. This text is at the time of writing in square brackets.
[75] ILBI Draft Text, note 1, Art 25(1).

of or significant harmful changes to the marine environment, or, more boldly, more than a minor or transitory impact on the environment.[76] The second option, draws inspiration from the 1991 Environmental Protocol to the 1959 Antarctic Treaty,[77] and provides for a two stage assessment process depending on whether the activity is likely to have more than a minor or transitory effect or cause substantial pollution or significant harmful changes to the marine environment.[78] In the latter case, the results of the EIA must be submitted for a technical review in accordance with Part IV of the Draft Agreement.[79] There is provision in the current draft of the Agreement for the EIA threshold and criteria to be set out in the Agreement or developed, at a later date, by the Scientific and Technical Body.[80] From the perspective of climate change and ocean acidification, it is clear that the lower threshold for carrying out an EIA is more appropriate. The nature of an EIA is that it is the individual activity that is subject to assessment, and while the Agreement requires cumulative effects to be considered, it is unlikely, outside the context of geoengineering, that any individual activity in ABNJ will lead to "significant and harmful" climate change and ocean acidification effects.

One option under consideration is for a list of activities that require, or which do not require an EIA to be specified in an annex to the BBNJ Agreement or set out in voluntary guidelines prepared by the Conference of the Parties on the basis of recommendations from the Scientific and Technical Body.[81] This option provides an opportunity for the BBNJ Agreement to regulate activities in ABNJ that directly contribute to or are closely connected with climate change or ocean acidification. The obvious example of such an activity is marine geoengineering. As noted above, while the 1996 Protocol to the London Convention will regulate ocean fertilisation once the 2013 amendments to the Protocol enter into force, and has a mandate to regulate other forms of geoengineering, its scope is arguably limited to geoengineering that involves the placement of matter into the oceans.[82] There is currently no global organisation with a mandate to regulate marine geoengineering more generally.[83] This lacunae could be partially filled by a BBNJ Agreement that specifies that geoengineering activities in ABNJ must comply with an EIA subject to the terms of the Agreement. A similar argument could be made in relation to other activities that have climate implications such as renewable energy technologies.

Arguably the most significant factor that will influence how relevant the BBNJ Agreement EIA provisions are to activities with climate change or acidification implications for the oceans is whether the EIA process will apply only to activities carried out in ABNJ or whether it will apply to activities that have an *effect* "on areas within or beyond national jurisdiction".[84] The latter option is potentially very broad and, in theory, might encompass activities under the jurisdiction of states (within their territory) but which affect the oceans – in terms of temperature rise, deoxygenation or pH change – beyond national jurisdiction. In fact, it is largely land-based activities, rather than

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[76] ILBI Draft Text, note 1, Art 24(1) [Alt 1].
[77] Protocol on Environmental Protection to the 1959 Antarctic Treaty, adopted on 4 October 1991, entered into force 14 January 1998, 30 ILM 1461, Art 8 and Annex I.
[78] ILBI Draft Text, note 1, Art 24(1) [Alt 2].
[79] Ibid.
[80] ILBI Draft Text, note 1, Art 24[(2)]. The entire provision is in square brackets in addition to the two alternative options set out within the paragraph.
[81] ILBI Draft Text, note 1, Art 29(1). This option is currently in square brackets.
[82] 1996 London Protocol, Art 6*bis* (1). Article 6*bis* (1) was adopted as an amendment to the Protocol in 2013 and has not yet entered into force.
[83] See generally, Karen N. Scott, "Geoengineering and the Law of the Sea" in Rosemary Rayfuse (ed), *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing, 2015) 451.
[84] ILBI Draft Text, note 1, Art 7 [Alt. 1].

activities within ABNJ, that are contributing to climate change and ocean acidification. At the time of writing, one option in the draft BBNJ Agreement defines an EIA (draft Article 1(7) [Alt.1]) as "a process to evaluate the environmental impact of an activity [to be carried out in areas beyond national jurisdiction [, *with an effect on areas within or beyond national jurisdiction*]] [, taking into account [, interrelated [socioeconomic] [social and economic], cultural and human health impacts, both beneficial and adverse].][85] The alternative definition confines the process to activities taking placed beyond national jurisdiction.[86] From the perspective of addressing the climate-related impacts on the oceans, it is clear that the broader definition that would require an EIA in respect of activities under the control of states wherever they are located if they affect ABNJ, is preferred. Politically, however, it is unlikely that states will agree to such a far-reaching obligation.

Finally, connected to the issue of EIA breadth, draft Article 28 provides for a process of strategic environmental assessment (SEA) of plans and programmes. Currently poorly defined under the draft BBNJ Agreement,[87] SEA builds on and is broader than the process of EIA in that it focuses on an assessment of the environmental and other impacts (such as health) of government programmes and plans.[88] It therefore has the potential to be highly relevant to programmes, plans and policies that have implications for climate change and ocean acidification such as shipping and offshore oil and gas production. Again, a key question is whether the BBNJ SEA obligation will be confined to activities conducted in ABNJ or whether it will apply to activities under the control of parties that affect ABNJ. Both options are currently provided for in square brackets in draft Article 28. The broader option is potentially very far reaching with the SEA obligation, in principle, of application to industrial and energy plans and programmes under a state's jurisdiction, including on its territory, where those plans and programs contribute to the cumulative effects of climate change and ocean acidification in ABNJ. While extremely positive from the perspective of climate change, it is again unlikely that states will agree to such a far-reaching SEA obligation.

(iii) The BBNJ Agreement, Institutional Infrastructure and Climate Change

The final area worthy of consideration is the institutional infrastructure associated with the BBNJ agreement. A challenge in developing the global law of the sea is that UNCLOS has few institutions that have the capacity to develop and implement the Convention.[89] In contrast to the UNFCCC and indeed most other multilateral environmental treaties, the UNCLOS conference of the parties deals only with technical matters and does not provide a forum for the discussion of substantive issues.[90] By contrast, it is proposed a number of institutions be established to support the implementation of the BBNJ Agreement. The creation of dynamic institutional infrastructure is important in the context of responding to an equally dynamic ocean environment.

Draft Article 48 of the BBNJ Agreement establishes a conference of the parties with a potentially broad mandate to adopt decisions on all aspects of the agreement. It is likely that the standard

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[85] Emphasis added.

[86] ILBI Draft Text, note 1, Art 7 [Alt. 2]: ["Environmental impact assessment" means a process for assessing the potential effects of planned activities, carried out in areas beyond national jurisdiction, under the jurisdiction and control of State Parties that may cause substantial pollution of or significant and harmful changes to the marine environment.]

[87] See ILBI Draft Text, note 1, Art 1[13].

[88] See generally, Robin Warner, "Strategic Environmental Assessment and Its Application to Marine Areas beyond National Jurisdiction" in Richard Barnes and Ronán Long (eds), *Frontiers in International Environmental Law: Oceans and Climate Challenges* (Brill, 2021) 430.

[89] See generally, James Harrison, "The Law of the Sea Convention Institutions" in Donald R. Rothwell, Alex G Oude Elferink, Karen N. Scott et al., note 43, 373.

[90] 1982 UNCLOS, Art 319(2)(e). See also ibid, 376 – 378.

model of consensus decision-making will be adopted[91] and in practical terms this may inhibit progressive action in the context of climate change and ocean acidification. Positively, draft Article 49 is slated to establish a Scientific and Technical Body to provide scientific and technical advice to the conference of the parties. The Body may have the power to make recommendations associated with the assessment of area-based protection measures and EIA proposals, although all of these functions are currently in square brackets and there is no consensus yet on the extent of the mandate of the Scientific and Technical Body. Other bodies likely to be established by the Agreement include a secretariat,[92] a clearing house mechanism for information exchange and dissemination[93] and a financial mechanism.[94] Although not directly connected to climate change and ocean acidification, the establishment of responsive and scientifically-based institutions are fundamental in supporting the adoption of adaptive measures appropriate to the dynamic ocean environment in the context of climate change and ocean acidification.

4. Concluding Remarks

The ocean-climate nexus is now largely acknowledged by policy-makers, although progress towards implementing integrated oceans-climate measures is slow. The BBNJ Agreement provides a meaningful opportunity to more effectively integrate climate change and ocean acidification impacts into the management and conservation of high seas biodiversity and ecosystems. Climate change and ocean acidification are both expressly identified as factors relevant to oceans resilience, and as such, need to be considered as part of EIA and SEA processes, assuming the bracketed definition of cumulative effects remains as it is currently drafted. It has yet to be agreed as to whether the BBNJ EIA/ SEA processes will apply to activities taking place outside ABNJ under a state's jurisdiction, but which may impact on biodiversity beyond national jurisdiction. This is currently an option in the draft Agreement, and from the perspective of integrating climate change and ocean acidification into broader decision-making, would undoubtedly be preferable to the narrower approach which restricts EIA/ SEA processes to activities actually taking place beyond national jurisdiction. The inclusion of an SEA process in the draft BBNJ Agreement is particularly notable in the context of climate change and ocean acidification as the SEA obligation applies to programs and plans more generally that take place within or potentially impact on ABNJ. A broad interpretation of this obligation could require states to consider activities such as shipping or offshore oil and gas exploitation from the perspective of climate change and ocean acidification.

More particularly, climate change and ocean acidification are expressly identified as factors that undermine ecosystem resilience, justifying area-based management mechanisms under the Agreement. However, Part III of the Agreement on area-based protection is arguably inadequate as currently drafted as a response to the dynamic challenges posed by climate change and ocean acidification. The definition of area-based management is spatially focused and lacks a meaningful temporal and biological adaptive dimension. Moreover, while acknowledging that the process of designating protected areas has yet to be determined under the BBNJ Agreement, the provisions in the draft that relate to review and adaptation are arguably insufficient to respond to the very dynamic nature of ocean ecosystems. This constitutes something of a lost opportunity to develop processes and principles for area-based management on the basis of modern scientific and

[91] ILBI Draft Agreement, note 1, Art 48 [3bis]. The article provides for the procedures adopted by the conference of the parties to apply if consensus cannot be achieved.
[92] ILBI Draft Agreement, note 1, Art 50.
[93] ILBI Draft Agreement, note 1, Art 51.
[94] ILBI Draft Agreement, note 1, Part VII.

ecological research. Finally, the conception of area-based protection is quite narrow under the 2019 draft of the BBNJ Agreement in that the focus is on areas that are currently vulnerable to climate change and ocean acidification, and there is no express provision for protecting so-called climate refugia. That is, areas that are currently resilient and should be protected in order to maximise ecosystem resilience, or areas that are likely to become vulnerable in the future.

More generally, the apparent exclusion of fisheries from the draft BBNJ Agreement inevitably limits the application of an integrated and ecosystem approach and, in practice, undermines the potential effectiveness of measures adopted under the Agreement seeking to build resilience in the face of climate change and ocean acidification.

While climate change and ocean acidification are expressly identified as cumulative impacts, and as factors that contribute towards ecosystem vulnerability, neither threat is front and centre of the draft Agreement. The BBNJ Agreement will not contribute to obligations to mitigate carbon dioxide emissions and other causes of climate change and ocean acidification, and it will not address the regulatory in lacuna which exists in relation to ocean acidification. It is unlikely to provide a forum within which marine geoengineering can be generally regulated outside of the broad provisions relating to environmental impact assessment and area-based protection.

Significantly however, climate change and ocean acidification are at risk of being entirely marginalised within the BBNJ Agreement. In the textual proposals submitted by state and other delegations in February 2020,[95] in response to the 2019 draft, a number of states indicated a desire to water down or omit altogether the references to climate change and ocean acidification. For example, the EU and its member states have proposed the deletion of "climate change, ocean acidification and related impacts" from the definition of cumulative impacts in Article 1(6).[96] The Republic of Korea has suggested that the entire definition of cumulative impacts be removed altogether.[97] Indonesia has suggested the omission of Article 14(e), which includes building resilience stressors, including those related to climate change and ocean acidification, among the objectives of area-based protection.[98] This proposal is endorsed by the Republic of Korea, which has suggested paragraph (e) of Article 14 be moved to the Preamble of the Agreement.[99] In relation to EIA, the EU, Indonesia and the Republic of Korea have all endorsed confining the process to activities taking place in ABNJ.[100] Korea is in favour of removing Article 25 (on cumulative impacts) entirely from the draft and dealing with cumulative and transboundary impacts in draft Article 35(2)(d), which sets out a description of the potential effects of a planned activity as part of the preparation and content of EIA reports.[101] The EU, Indonesia and the Philippines favour limiting the obligation to carry an SEA under draft Article 28 of the Agreement to activities taking

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[95] Textual proposals submitted by delegations by 20 February 2020, for consideration at the fourth session of the Intergovernmental conference on 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 (the Conference), in response to the invitation by the President of the Conference in her Note of 18 November 2019 (A/CONF.232/2020/3) at: https://www.un.org/bbnj/sites/www.un.org.bbnj/files/textual_proposals_compilation_article-by-article_-_15_april_2020.pdf.

[96] Ibid, 9.

[97] Ibid, 15. By contrast, South Africa, has indicated its very strong support for including a definition of cumulative effects, including the reference to climate change and ocean acidification. See ibid, 17.

[98] Ibid, 122.

[99] Ibid, 125.

[100] Ibid, 219 – 221.

[101] Ibid, 242.

place within ABNJ[102] and Korea has suggested that Article 28 and SEA be omitted altogether.[103] This compilation of proposals is far from complete and notably does not include the views of China and Russia.

At the time of writing therefore, the BBNJ Agreement has the potential to strengthen the ocean-climate nexus and to better integrate climate and ocean acidification into the conservation and management of biodiversity and ecosystems beyond national jurisdiction. However, it is very unlikely that this potential will be realised in a way that is meaningful and effective. Not only is the BBNJ Agreement unambitious in relation to climate change and ocean acidification, but the few references and innovations the current draft provides for are at distinct risk of being diluted by the negotiating states, including, rather surprisingly, the EU. Bridging the climate and law of the sea regimes and integrating climate concerns into oceans governance is a global priority and this is slowly being recognised by institutions such as the UNFCCC. But the BBNJ Agreement is unlikely to be the instrument that constitutes such a bridge.

[102] Ibid, 249.
[103] Ibid, 250.