Consolidated Document Relating to Intellectual Property and Genetic Resources, there seems to be convergence to exclude the application of that new instrument to genetic resources in ABNJ.

Furthermore, some delegations consider that only "genetic resources," but not "genetic material," should be subject to benefit sharing, however blurry the distinction between the two concepts. On the other hand, many delegations consider that the new regime should be able to set conditions on every stage of the MGR commercialization process, taking into account that, once collected, it is all "resource."

While some of the fundamental questions concerning the legal regime of MGRs in ABNJ are still quite controversial, that has not prevented delegations from moving forward in looking at pragmatic ways in which to ensure access and benefit sharing for such resources in the High Seas and in the Area. As has been seen, the question of monetary benefit sharing, as well as IP rights, is still one of the sticking points in the current negotiating process.

At the end of the third session of the Preparatory Committee, a list of issues was identified as requiring further deliberation by all participants. Such issues include: (1) what other guiding principles and approaches are applicable to marine genetic resources, including questions on sharing the benefits (2) inclusion of derivatives and access to in situ, ex silico, and in genetic sequence data (GSD), taking into account the experience of other forums; (3) departing from monetary and nonmonetary benefits and focusing on when benefits become available—in light of determining the commercial value of MGR in the early phases of research to consider earn-out provisions.

In conclusion, the current situation, toward the end of the Preparatory Committee phase, shows that there is still some work to be done, and legal research to be conducted, but taking into account that most participants do not want to extend the number of meetings and would rather keep the road map as established in Resolution 69/292, most probably the committee will end up making substantial recommendations of a future text to the General Assembly. In turn, the Assembly should decide on moving toward an intergovernmental conference before the end of its seventy-second session.

In my opinion, this should also include the possibility of having a negotiating text, something along the lines of the Informal Single Negotiating Text (ISNT) during the Third UN Conference on the Law of the Sea, which would help us continue bridging the gaps and achieve a new implementing treaty to adequately regulate one of our more precious global commons for the sake of future generations.

## Area-Based Management Tools, Including Marine Protected Areas

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*By Penelope Nevill**

### The Problem

The world's oceans are in peril. A few key facts paint a disturbing picture:

- 89.5 percent of the world's fish stocks are either overfished at a biologically unsustainable level (31.4 percent) or fully fished (58.1 percent).[1] That compares with 1974, when the

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[1] United Nations Food and Agricultural Organization (FAO), Report on the State of World Fisheries and Aquaculture 2016 5–6 (2016).

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share of fish stocks that were overexploited was 10 percent. It is estimated that up to 13 percent of global fisheries have collapsed.[2]

- 60 percent of the world's major marine ecosystems that underpin livelihoods have been degraded or are being used unsustainably.[3]
- Climate change is having a much greater effect on the world's oceans than on land. The consequent heating and acidification of the oceans—as they absorb 26 percent of the $CO^2$ and 93 percent of the heat that we humans pump out—is making "profound alterations of the ocean's physics and chemistry manifested in ocean warming and acidification, which together are predicted to result in ocean deoxygenation, sea level rise, a slowdown of ocean circulation and changes in the structure of marine ecosystems and ocean primary production."[4] This includes loss of calcification in reefs and shellfish. Fish embryos and larvae are more sensitive than juveniles and adults to elevated $CO^2$.[5]
- Approximately 20 percent of the world's coral reefs, which are the nurseries of tropical coastal fish stocks and a storehouse of biodiversity, have been lost due to human impacts and another 20 percent are degraded.[6] A scientific study published in March this year reported that two-thirds of Australia's iconic Great Barrier Reef is dead, something they had not expected to see for another thirty years.[7] According to one expert, without coral reefs

> [w]hat we will be left with is an algal-dominated hard ocean bottom… with lots of microbial life soaking up the sun's energy by photosynthesis, few fish but lots of jellyfish grazing on the microbes. It will be slimy and look a lot like the ecosystems of the Precambrian era, which ended more than 500 million years ago.[8]

## Role of ABMTs and MPAs

Area based management tools (ABMTs) such as marine protected areas (MPAs) are recognized by scientists and the international community as essential to promote the conservation and management of oceans and fisheries.[9] They have been shown to enhance population resilience to climate-driven disturbance.[10] In 2005 the Conference of the Parties to the Convention on Biological Diversity 1992 adopted a target MPA coverage of 10 percent of coastal and marine areas by 2012. In 2010 it extended the target deadline to 2020.[11] By then the global MPA coverage was just over 1

[2] UNESCO, Facts and Figures on Marine Biodiversity, *available at* http://www.unesco.org/new/en/natural-sciences/ioc-oceans/focus-areas/rio-20-ocean/blueprint-for-the-future-we-want/marine-biodiversity/facts-and-figures-on-marine-biodiversity/ (visited June 26, 2017).

[3] *Id.*

[4] International Union for the Conservation of Nature (IUCN), Submission Following the Second Session of the Prep-Com 9–10 (Dec. 5, 2016), *available at* http://www.un.org/depts/los/biodiversity/prepcom_files/rolling_comp/IUCN.pdf.

[5] FAO 2016, *supra* note 1, at 132.

[6] UNESCO, *supra* note 2, at 14.

[7] Editorial, *Shed a Tear for the Reefs*, N.Y. Times (Mar. 8, 2017), *available at* https://www.nytimes.com/2017/03/18/opinion/shed-a-tear-for-the-reefs.html?_r=0 (referring to Terry Hughes et al., *Global Warming and Recurrent Mass Bleaching of Corals*, 543 Nature 373 (March 16, 2017).

[8] Roger Bradbury, *A World Without Coral Reefs*, N.Y. Times (July 13, 2012), *available at* http://www.nytimes.com/2012/07/14/opinion/a-world-without-coral-reefs.html?_r=0.

[9] Johannesburg Plan of Implementation, 2002 World Summit on Sustainable Development; United Nations Food and Agricultural Organization (FAO), Report on the State of World Fisheries and Aquaculture 2012 164–65 (2012).

[10] IUCN, Explaining Ocean Warming: Causes, Scale, Effects and Consequences 249 (September 2016).

[11] FAO 2012, *supra* note 9, at 11.

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percent. Recent statistics are more encouraging, if only slightly: a UNEP report released in November 2014 found that 3.4 percent of the global ocean is now protected.[12] In any event 10 percent is not enough. A recent review of the scientific literature suggests that the figure needs to be 30 percent.[13]

What is a MPA? There is no one accepted definitive scientific or legal definition for the term "marine protected area." One commonly used is the IUCN's 2008 definition:[14]

> A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.[15]

MPAs can be "no-take" areas or allow restricted exploitation and activities, or combine both. Zones can be horizontal as well as vertical.

To date no one convention establishes "a" or "the" legal framework for MPAs in coastal states' maritime zones or areas beyond national jurisdiction. There is a patchwork (and patchy) legal framework, which includes the Convention on Biological Diversity and its 1995 Jakarta Mandate concerning coastal and marine areas, the RAMSAR wetlands convention, the World Heritage Convention, the International Convention for the Prevention of Pollution from Ships 1973 and 1978 Protocol (MARPOL 73/78), regional seas agreements,[16] and regional fisheries management organizations (RMFOs).[17] Four treaties make specific provision for MPAs in areas beyond national jurisdiction.[18] UNCLOS contains only one provision for the creation of special areas—in Article 211(6)(a) to prevent vessel pollution within the coastal state's EEZ. These must be approved by the International Maritime Organization.

A handful of high seas MPAs already exist.[19] The first was the no-take South Seas Orkney Islands Southern Shelf MPA designated by CCAMLR in 2009.[20] Seven high seas MPAs were created under the Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) as a network in the North-East Atlantic in 2010 and 2012, but do not regulate fishing because fisheries are not within the scope of that treaty.[21] They are however complemented by fisheries measures taken by the relevant RMFO, the North East Atlantic Fisheries

[12] UN Environment World Conservation Monitoring Centre, *New UNEP Report Unveils World on Track to Meet 2020 Target for Protected Areas on Land and Sea* (Nov. 13, 2014), *at* http://www.unep-wcmc.org/news/new-unep-report-unveils-world-on-track-to-meet-2020-target-for-protected-areas-on-land-and-sea.

[13] The Pew Charitable Trusts, *Protecting 30 Percent of the Ocean Brings Multiple Benefits*, *at* http://www.pewtrusts.org/en/research-and-analysis/analysis/2016/03/21/protecting-30-percent-of-the-ocean-brings-multiple-benefits (referring to Bethan C. O'Leary, Marit Winther-Janson, John M. Bainbridge, Jemma Aitken, Julie P. Hawkins & Callum M. Roberts, *Effective Coverage Targets for Ocean Protection*, 9 CONSERVATION LETTERS 398 (November/December 2016).

[14] IUCN, GUIDELINES FOR APPLYING PROTECTED AREA MANAGEMENT CATEGORIES 8 (Nigel Dudley ed., 2008).

[15] *Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas (Supplementary to the 2008 Guidelines), Second Draft* (June 2011), *available at* http://iucn.org/about/work/programmes/marine/marine_our_work/marine_MPAs/?8857/PAmanagementcategoriesforMPAs.

[16] UNEP lists regional seas programs in eighteen areas on its website.

[17] There are approximately seventeen RMFOs.

[18] These are the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), The Antarctic Treaty and its Madrid Environment Protocol, the OSPAR Convention, and the Noumea Convention.

[19] *See, e.g.*, K. Scott, *Conservation on the High Seas: Developing the Concept of High Seas Marine Protected Areas*, 27 INT'L J. MARINE & COASTAL L. 849 (2012); C. Ribiero, *The 'Rainbow': The First National Marine Protected Area Proposed Under the High Seas*, 27 INT'L J. MARINE & COASTAL L. 183 (2010); Yoshifumi Tanaka, *Reflections on High Seas Marine Protected Areas: A Comparative Analysis of the Mediterranean and the North-East Atlantic Models*, 81 NORDIC J. INT'L L. 295 (2012).

[20] Scott, *supra* note 19, 853.

[21] *Id.*

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Commission (NEAFC) (Article 4(1) of OSPAR makes provision for recommendations on fisheries measures to be made to relevant international and regional organizations). The FAO lists six high seas areas where RMFOs, regional seas programs, and an association of fishing companies have introduced restricted fishing areas in the high seas under their remit. [22] Most recently, in October 2016, the largest no-take MPA to date was established by CCAMLR in the Ross Sea in Antarctica. At 600,000 square miles it is twice the size of Texas, and provides for a thirty-five-year expiry date.

With more than two-thirds of the world's oceans beyond national jurisdiction, the anticipated treaty can play a crucial role in meeting targets for global MPA coverage and establishing the first comprehensive global legal framework.

## Progress to Date

One of the most difficult issues to arise in the PrepComs is what the relationship should be between the new treaty and existing international instruments, RMFOs, and regional seas bodies. Resolution A/RES/69/292 directed that the treaty "should not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies." This has led to much discussion of what "not undermining" might require.[23] To some extent this is a question of semantics, perception, and, no doubt, politics. In PrepCom III (March 27–April 7, 2017) some states rejected the idea of an oversight mechanism to review MPAs under other instruments,[24] rejected any reporting requirement or assessment function, and proposed that any new treaty body defer the adoption of measures to relevant regional or sectoral organizations and not impose obligations on third parties.[25] Other stakeholders argued for global-level cooperation with an institutional framework for monitoring, review, and long-term planning.[26] Chair Duarte summed it up in plenary by proposing three options: a global model, a hybrid model, and a regional and sectoral model.[27]

It is difficult to see how anything other than a global model would be practical, given that networked MPAs and ocean spatial planning across maritime boundaries are essential to provide protected corridors for species and ecosystems. As often said, fish don't observe boundaries. We need joined-up thinking to fill coverage gaps, to step in where regional bodies do not have a complete mandate across all biological diversity, and to act when they are unable or unwilling to do so. That is not to say that cooperation and coordination should not be the starting point. It must be. Getting all stakeholders on board, including fishermen, has long been identified as key in the design and enforcement of effective MPAs.[28] But, as the African Group very sensibly pointed out, if no gaps existed under the current regional schemes, there would have been no need to establish the PrepCom. It cannot be denied that RMFOs and regional seas bodies have failed to arrest the decline in the world's fisheries stocks and marine ecosystems.

Having said that, one important subject discussed separately from ABMTs and cross-cutting issues was institutional arrangements. Cost, efficiency, and the need to avoid duplication of

[22] Food and Agriculture Organization of the United Nations, *Marine Protected Areas in the High Seas*, *at* http://www.fao.org/fishery/topic/16204/en (visited June 26, 2017).

[23] 25 Earth Negot. Bull. (IISD) No. 125, 1–2; 25 Earth Negot. Bull. (IISD) No. 128, 2.

[24] United States. 25 Earth Negot. Bull. (IISD) No. 125, 2.

[25] Japan. *Id*. Canada also opposed a global oversight function. 25 Earth Negot. Bull. (IISD) No. 122, 1. Norway considered that making regional bodies accountable to a supranational mechanism could be seen as undermining them. 25 Earth Negot. Bull. (IISD) No. 125, 2.

[26] The IUCN and the High Seas Alliance. 25 Earth Negot. Bull. (IISD) No. 125, 2.

[27] 25 Earth Negot. Bull. (IISD) No. 129, 6.

[28] *See, e.g.*, IUCN, Guidelines for Marine Protected Areas xi, xii, xxiii, 9, ch. 4 (G. Kelleher ed., 1999).

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functions unsurprisingly came up in discussion.[29] Choices about institutional structures and funding will affect the effectiveness of any global mechanism and its relationship to other instruments and bodies, as will choices about decision-making procedures for creating MPAs. Topics covered included who or what should recommend the establishment of a MPA (e.g., the CBD model of Conference of the Parties and Subsidiary Body on Scientific, Technical and Technological Advice?),[30] whether only states should be able make submissions or other stakeholders as well,[31] the scientific and evidential approach required (precautionary principle, best available evidence), and consensus or qualified majority voting.[32] A qualified majority voting or reverse consensus procedure is likely to make it easier to establish MPAs.

What appeared to be missing was consideration of how individuals will be made subject to the law governing high seas MPAs and how they might be enforced, other than reference to the "polluter pays" principle. Enforcement is likely to depend on traditional flag state mechanisms, although these have been notoriously weak in ocean governance. Some states mooted the establishment of a centralized compliance mechanism and state responsibility,[33] but it is unclear whether any consideration was given to imposing legal obligations directly on individuals. An international inspectorate like that mooted for deep sea bed mining might be explored. Ideally any solution will also build in a form of universal jurisdiction, allowing or requiring any state to act even where there is no connecting nationality or territoriality link to the offender or vessel. This would go some way beyond the FAO's 2001 voluntary plan of action for IUU fishing[34] and the 2009 Port State Measures Agreement. Enforcement will depend on treaty participation, although there has been some discussion about provision for nonparty participation.[35] Experience shows that even MPAs within domestic jurisdictions can be very difficult and expensive to enforce, which is another reason why wide stakeholder commitment to MPAs in ABNJ is so important. Innovative solutions will need to be explored, including the employment of satellite-tracking technology,[36] deterrent bonds (rejected by the International Tribunal for the Law of the Sea (ITLOS) in *The Volga* prompt release case),[37] reverse standards of proof,[38] summary penalty fines enforceable across national jurisdictions, and law enforcement cooperation.

## Concluding Remarks

Turning to the conference theme, "what international law values," in this context we are talking about making law rather than international law with some kind of a priori existence and inherent moral or ethical content. What the finished law will value is what those involved in the negotiations value. As stressed by the Holy See during PrepCom III, this is a political choice,[39] to put aside differences and protect and conserve our world's oceans before it is too late.

[29] 25 Earth Negot. Bull. (IISD) No. 125, 2.

[30] To which it might be added, should any decision-making body include representatives from the relevant RMFOs and regional seas bodies alongside contracting parties?

[31] 25 Earth Negot. Bull. (IISD) No. 122, 1.

[32] 25 Earth Negot. Bull. (IISD) No. 122, 2.

[33] 25 Earth Negot. Bull. (IISD) No. 129, 13.

[34] Food and Agriculture Organization of the United Nations, *International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing* (2001), *available at* http://www.fao.org/docrep/003/y1224e/y1224e00.htm#IMPLEMENTATION.

[35] 25 Earth Negot. Bull. (IISD) No. 122, 2.

[36] Recommended by the FAO's 2001 plan of action, *supra* note 34.

[37] "Volga" (Russian Federation v. Australia), Case No. 11, Prompt Release, Judgment, ITLOS Reports 2002, 10.

[38] Recommended by the FAO's 2001 plan of action, *supra* note 34.

[39] 25 Earth Negot. Bull. (IISD) No. 126, 2.

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