Rethinking Conservation of Marine Biodiversity Beyond National Boundaries: Justice, Property, and the Commons

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ABSTRACT

In this Article, I examine a previously quite overlooked yet problematic interdependence between the international law of the sea, international law of intellectual property, and international law of biodiversity conservation. Such interdependence results from economic dynamics associated with the "property-sovereignty" and "biotechnology-biodiversity" nexuses and affects the two-thirds of the World Ocean beyond national jurisdiction. The main contribution of this Article is a critical analysis of: (i) the legal space that currently and prospectively governs marine biodiversity of areas beyond national jurisdiction, and (ii) the discursive space that impacts the legal mechanisms at play and dominates current treaty negotiations in the field. The 2020 outbreak of the COVID-19 pandemic paralyzed the negotiations of the treaty on global marine biodiversity: the fourth session of the conference on the future binding treaty keeps being postponed, now to 2022. The pandemic thus offered to international lawyers an opportunity to thoroughly re-think this project. The broader contribution is to provide a more integrated perspective on existing challenges and likelihoods, and ultimately expose to what extent, in terms of justice, the current doctrine, policy, and agenda of conservation of marine biodiversity are based on different and often only irreconcilable projects. Finally, I propose an alternative understanding of the "conservation-justice" nexus regarding marine biodiversity, as well as regarding Earth biodiversity more generally.

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INTRODUCTION

A contemporary ecological crisis has spurred a new name for this time in which we live. Our epoch is now often referred to as the "Anthropocene" (Greek: *anthropo,* "human," and *cene*, "new"). This term highlights how human activities dramatically affect biogeochemical systems and the physical geography of our planet, and the resulting new geological age is said to be marked by this relation.[1] Such anthropogenic impact results from certain activities of a handful of humans —namely those inspired by a paradigm of human-nature hierarchy. This anthropogenic impact on the biological diversity of our planet, from particular genes to whole landscapes, only grows, thus affecting us as an entire species[2]—those who

1. The term "Anthropocene" was originally coined in the 1980s by ecologist Eugene F. Stoermer and entered the mainstream discourse in 2000 through Nobel laureate, atmospheric chemist Paul Crutzen. To date, the term serves rather as an informal reference than a part of the official nomenclature in sciences. *See, e.g.*, Paul J. Crutzen & Eugene F. Stoermer, *The Anthropocene*, 41 GLOBAL CH. NEWSL. 17 (2000); and Paul J. Crutzen, *Geology of Mankind*, 415 NAT. 23 (2002). However, "Anthropocene" is quickly becoming a nomenclature term, as the Working Group on the Anthropocene (of which Crutzen is a member) has been created and has presented its first provisional report in 2016 at the thirty fifth International Geological Congress in South Africa. University of Leicester, Media note: Anthropocene Working Group (Aug., 2016) https://perma.cc/G69H-B74C.

2. Notably, whereas some effects can be said to affect humans as an entire species, these effects impact different human groups in very different manners, both in social and geographical terms (*e.g,* such vulnerable groupings as women, ethnic minorities, migrants, the poor) in ways that the environmental justice movement and certain critical legal scholarship have described. For more details, see *infra* section I of this Article.

actively contribute to the destruction of nature and those who do not. This empirical fact may and must have normative consequences. The question is, however, how should international lawyers think and act regarding the decline of biodiversity as a subset of a larger ecological crisis?

The advent of biotechnology in 1980 has profoundly changed the attitude of scientists, and more recently of lawyers (especially those working with international marine environmental law, science and technology, and intellectual property and patent law) towards biological diversity in remote marine areas, including the deep seabed. Deep in the ocean, a variety of unique beings have evolved to adapt to the extreme temperatures, toxicity, and pressure of their habitats by acquiring extraordinary and unique features.[3] This high degree of complexity creates immense biodiversity, ranging from the unicellular microbes (such as bacteria) to the more complex secondary macro-consumers (such as fish and shellfish).[4] Scientists suggest that the degree of biodiversity can have a significant effect on organism features like productivity.[5] More recently, scientists have discovered that the unusual adaptability and self-protection properties of the deep seabed forms of life have a vast potential for numerous cutting-edge life science applications, and subsequently their patentability.[6]

One of the main tools of biotechnological exploration of the deep seabed is bioprospecting.[7] Simply put, bioprospecting is an in-situ kind of research on valuable potential of marine biological resources, including marine genetic resources ("MGRs").[8] Yet, more precisely, bioprospecting is a technique that consists of exploring the ocean's biodiversity by identifying and harvesting commercially valuable biological resources and the genetic material derived from those.[9] It has

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3. Kirsten E. Zewers writes as follows:

> Due to their tectonic nature, areas of hydrothermal vents are very volatile and subject to extreme geological events such as tsunamis, volcanic eruptions and earthquakes. Extreme changes in temperature [up to 400° C], pressure and hydrothermal fluid create difficult environments for sustainable life. Nevertheless, the majority of macro and micro-organisms living in hydrothermal vents have been able to convert hydrothermal vent fluid into useful chemical energy.

Kirsten E. Zewers, *Bright Future for Marine Genetic Resources, Bleak Future for Settlement of Ownership Rights: Reflections on the United Nations Law of the Sea Consultative Process on Marine Genetic Resources*, 5 LOY. U. CHI. INT'L L. REV. 151, at 155 (2008).

4. *See generally* Marianna Lozada & Hebe M. Dionisi, *Microbial Bioprospecting in Marine Environments, in* SPRINGER HANDBOOK OF MARINE BIOTECHNOLOGY 307 (Se-Kwon. Kim ed. 2015); Ivan Valiela, MARINE ECOLOGICAL PROCESSES (2010).

5. *See, e.g.*, David Tilman, Johannes Knops, David Wedin, Peter Reich, Mark Ritchie & Evan Siemann, *The Influence of Functional Diversity and Composition on Ecosystem Processes*, 277 SCI. 1300, 1300–01 (1997).

6. *See generally* Fernando De la Calle, *Marine Genetic Resources. A Source of New Drugs. The Experience of the Biotechnology Sector*, 24 INT'L J MAR & COAST L. 209 (2009).

7. *See generally* David K. Leary, *Bioprospecting and the Genetic Resources of Hydrothermal Vents on the High Seas: What is the Existing Legal Position, Where Are we Heading and What are our Options?*, 1 MACQ J INT'L & C ENV'T L. 137 (2004).

8. *See generally id.*

9. *See generally id.*

recently alerted the international community about the need, on a global level, for greater legal certainty in this area.[10] Specifically, bioprospecting triggers a discussion about the scope of ownership rights over these discoveries, as well as a discussion about which discoveries, and to what extent, represent inventions, involving questions of intellectual property and patent deposition.[11]

In 2015, the United Nations ("UN") members launched the consultative process on a global agreement "on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction" ("ABNJs").[12] Although it would be a new instrument, it is intended to be an "implementing agreement"—that is, an implementation of the principles of the existing United Nations Convention on the Law of the Sea ("UNCLOS")[13]—rather than a self-standing treaty with new principles.[14]

On Christmas Eve in 2017, the UN General Assembly ("GA") made a joint formal decision to kick-off official negotiations regarding the 2015 consultative process for 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."[15] The talks cover the two-thirds of the World Ocean that lie beyond any national boundary including the deep seabed. This decision came after more than ten years of discussions and consultations at the UN on potential avenues for exploitation of MGRs, their conservation and sustainable use, as well as risks- and benefits-sharing related to resources in those areas. The talks in New York have been scheduled for four sessions lasting ten days each between fall 2018 and spring 2020. Three sessions took place in 2018 and 2019. However, the fourth and last session scheduled for March-April 2020, has been indefinitely postponed due to the coronavirus ("COVID-19") pandemic. The talks came to a standstill, offering to the international community an excellent opportunity to think thoroughly about the pros and cons of the future treaty. To date, the negotiation positions vary. Some countries focus on the exploitation of MGRs and the rights to those resources on a first-come, first-served basis; others put forward concerns with MGRs' conservation and sustainable use; some states are discussing a fair, equitable, and transparent risk and benefits-sharing relating to those resources.[16]

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10. *See generally id.*

11. Zewers, *supra* note 3, at 152; *see generally* Lozada and Dionisi, *supra* note 4.

12. *See* G.A. Res. 69/292 (June 19, 2015).

13. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397, 21 I.L.M. 1261 [hereinafter UNCLOS].

14. *See* R. FLETCHER ET. AL, BIODIVERSITY BEYOND NATIONAL JURISDICTION: LEGAL OPTIONS FOR A NEW INTERNATIONAL AGREEMENT 13 (U.N. Environment World Conservation Monitoring Centre (UNEP-WCMC) 2017), https://www.unep-wcmc.org/system/comfy/cms/files/files/000/000/875/original/LegalOptions_v14_FINAL.pdf [https://perma.cc/S6ZF-H4X4].

15. G.A. 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 (Dec. 24, 2017).

16. *See, e.g.*, Dire Tladi, *The Common Heritage of Mankind and the Proposed New Treaty on Biodiversity in Areas Beyond National Jurisdiction: The Choice between Pragmatism and Sustainability,*

Indeed, these multifaceted and complex processes (that is, relevant research, biotechnological production and commercialization, UN consultations and talks) form both policy and normative dilemmas between protection and conservation of biodiversity, on the one hand, and its exploitation (either private or collective, in either more or less sustainable manner), on the other. Today there is very little knowledge of how possibly dramatic perturbations due to the most cutting-edge interventions, whether scientific or commercial, will likely affect the deep seabed's ecosystems and habitats.[17] Destruction or even damage of one link of the alimentary chain carries a risk of disrupting it thoroughly, especially in those deep ocean environments. Bioprospectors may seek to sustainably explore and exploit relevant natural resources for the welfare of (at least some) humans, and ultimately distribute risks and benefits amongst all humans fairly. However, both the UN talks and related biotechnological practices form actual and future challenges to global marine biodiversity.

On top of biodiversity issues, the described processes bear significant justice flaws. Specifically, those life forms that would be used as 'resources' would, in a way, be denied access to the resources *they* might need for *their* welfare, and possibly, for mere survival. Consequently, it is essential to address the following question: Given the prevailing narratives and course for the action of the future UNCLOS implementing agreement, as well as existing international law instruments relevant for that agreement, can we support related international law in terms of justice? In short, the main subject of this Article is the part of justice—and what kind of justice—in the prospective instrument with relation to the eventual place of biodiversity and its *conservation* in that agreement and related arrangements.

The expediency of such inquiries is twofold. On a practical plane, current and prospective instruments on biodiversity, patentability and benefit-sharing of genetic resources, and different marine zones form an institutional architecture that is likely to set standards for global ocean governance in the near future. On a more theoretical level, such existing and future mechanisms inform us about directions and dynamics of international law approaches to marine biodiversity and the biodiversity of our planet more generally; about the questions of justice, both regarding (re)distribution and non-domination; and about relevant actors and actors' behaviors, strategies and struggles for power that shape those institutions and processes. Here lies an opportunity to scrutinize the objectives and challenges characteristic of existing and upcoming global ocean governance and to advance the debate about the nexus 'conservation-justice' in such instruments.

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25 Y.B. INT'L ENV'T L. 113, 114 (2015) [hereinafter Tladi, *Pragmatism and Sustainability*]; L'INSTITUT DU DÉVELOPPEMENT DURABLE ET DES RELATIONS INTERNATIONALES (IDDRI), THE LONG AND WINDING ROAD CONTINUES: TOWARDS A NEW AGREEMENT ON HIGH SEAS GOVERNANCE, STUDY N°01/16, (2016).

17. For examples of some concrete problems, see *infra* Section I.A.

Regarding marine ABNJs, and particularly, the deep seabed, there are two different cases to examine:

- deep seabed mineral resources (raw materials) and their exploration and exploitation, called "deep seabed mining";[18] and
- biological, genetic, or living, resources, and the matters related to their exploration and exploitation, called "bioprospecting"—also as an activity potentially different from "marine scientific research" ("MSR").[19]

In this Article, I focus only on the second case, namely, the exploration and exploitation of marine biodiversity and its genetic resources, as well as aspects related to their conservation, thus remaining within the scope of the agenda of the prospective UNCLOS instrument. I critically describe and assess those events and developments that led to, and are relevant for, the GA's 2017 resolution that triggered the negotiations on the instrument.

Detailed doctrinal analyses of the existing law of the sea, as well as forecasts on the new instrument, have been extensively narrated elsewhere.[20] So, there is no need for me to paint their full canvas here. What represents a genuine interest for me is the nexus between conservation and justice relating to an actual and future place of conservation of marine biodiversity in international law.

This Article proceeds as follows: To set the stage, I introduce the problem and key standing concepts inherent for the ideational context of biodiversity in ABNJs (I). Next, I briefly present an overview of general socio-economic aspects of exploration and exploitation of MGRs (II); and examine the existing legal framework and ongoing consultative processes reaching beyond national jurisdictions (III).

The thrust of this Article's contribution is twofold (IV and V). On the one hand, I critically scrutinize projects and proposals that have set the agenda of the ongoing negotiations for a new global legal regime on marine biodiversity of ABNJs. On the other hand, I look at the main doctrinal and ideational contexts of conservation of the marine biodiversity of ABJNs. Overall, my aim is to analyze key present challenges and opportunities and ultimately expose to what extent, in

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18. *See generally, e.g.*, *The International Seabed Authority and Deep Seabed Mining*, UNITED NATIONS, https://www.un.org/en/chronicle/article/international-seabed-authority-and-deep-seabed-mining [https://perma.cc/S9WK-UJFT] (last visited Oct. 17, 2021).

19. *See generally* Leary, *supra* note 7.

20. To quote just a few, see generally Tladi, *Pragmatism and Sustainability, supra* note 16; IDDRI, *supra* note 16; Dire Tladi, *The Proposed Implementing Agreement: Options for Coherence and Consistency in the Establishment of Protected Areas Beyond National Jurisdiction*, 30 INT'L J. MAR. & COAST. L. 654 (2015) [hereinafter Tladi, *The Proposed Implementing Agreement*]; IDDRI, TOWARDS A NEW GOVERNANCE OF HIGH SEAS BIODIVERSITY: REPORT OF THE INTERNATIONAL SEMINAR ORGANIZED IN THE PRINCIPALITY OF MONACO, MARCH 20–21, 2008 (2008) [hereinafter IDDRI NEW GOVERNANCE]; EMILY BARRITT & JORGE E. VIÑUALES, LEGAL SCAN: A CONSERVATION AGENDA FOR BIODIVERSITY BEYOND NATIONAL JURISDICTION (2016) (on file with author).

terms of justice, the existing theory, instruments, agenda and course for action are based on differing and often irreconcilable projects. More precisely, my argument is that, to date, the UNCLOS talks and the related international law on global marine biodiversity conservation are permeated with the approach of environmental pragmatism. Environmental pragmatism blends quite opposed concepts and practices of the freedom of the high seas, the common heritage of mankind, and even the common concern of mankind, and thus tries to reconcile biotechnology with biodiversity, and, more generally, (private) property with the commons. This blending, I argue, is an arduous feat in policy terms. Moreover, it is hardly comprehensible from the normative perspective. I close the Article by proposing alternative visions of the "conservation-justice" nexus. Lastly, I offer some concluding remarks.

I. THE PROBLEM AND KEY STANDING CONCEPTS

In this section, I present the problem of bioprospecting and further commercialization of the MGRs (A). I then introduce key standing concepts inherent in the ideational context of biodiversity in ABNJs, as well as the possible conservation thereof (B). This first section thus sets the stage and tone for an analysis of commodification of marine biodiversity and, hence, of the complexity of a 'biotechnology-biodiversity' alliance that follows in the next sections of the paper.

A. THE PROBLEM

The general subject of this analysis is not new. It is a continuation of the discussion of the well-studied, although still unresolved, asymmetries between the international law of property in general, intellectual property rights (IPRs), and international biodiversity law.[21] The particularity of this Article is that it analyzes certain areas of marine biodiversity in ABJNs in light of the talks that promote a global binding instrument applying to these areas, thus fully involving the international law of the sea. Accordingly, on the conceptual level, the debate is between biodiversity conservation and its appropriation in international areas. Paradoxically, the debate is not only about property, but also about sovereignty, as we will see in the analysis of the ongoing UNCLOS talks.[22]

The specific issue of marine biodiversity arises from different anthropogenic impacts on the world ocean. The effects of anthropogenic climate change on the

21. *See Klaus Bosselmann, Plants and Politics: The International Legal Regime Concerning Biotechnology and Biodiversity*, 7 COLO. J. INT'L ENV'T L. & POLICY 111 (1995); Paul Oldham, Stephen Hall & Oscar Forero, *Biological Diversity in the Patent System*, 8 PLoS ONE 18 (2013). Sabrina Safrin, *Hyperownership in a Time of Biotechnological Promise: The International Conflict to Control the Building Blocks of Life*, 98 AM. J. INT'L L. 640, 641-685 (2004).

22. It is quite unexpected in the sense that, formally, the principle of sovereignty does not apply to ABNJs.

aquatic ecosystems[23] or of deep seabed mining on the ocean's floor[24] are essential for general debates on ocean use and conservation, but outside the scope of this Article. One such issue, that I suggest to be one of the most relevant anthropogenic threats to the deep seabed is bioprospecting—the exploration, including sampling, of living organisms for molecules and biochemical and genetic information that could be developed into commercially valuable products, especially in the pharmaceutical industry.[25] A multitude of the ocean's primary producers, such as unicellular microbes, produce, through their metabolism and growth, the means of sustenance for bigger marine species that are situated further along the alimentary chain; they thus contribute to the regulation of the global climate and "local" ocean life—ecological processes essential for the functioning of the aquatic ecosystem as a whole.[26] Pollution of a particular system, such as hydrothermal vents, would threaten the primary producers and hence all of their dependent life forms along the whole alimentary chain of the ocean ecosystem.

Since countless organisms of the deep seabed (which includes hydrothermal vents where the forms of life with valuable genes live) are potential sources of novel genes that could be of both scientific and commercial interest, bioprospecting has dramatically increased in ABNJs in recent years.[27] Bioprospecting may affect water temperature and produce a considerable degree of pollution, mainly due to discharge from bioprospecting vessels and wreckages.[28] It can equally introduce light and noise to environments that would otherwise remain intact.[29] Inadvertent movement or the introduction of organisms can also lead to contamination.[30] There is also a risk that sampling or collection of promising organisms

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23. In addition to absorbing heat, oceans are the largest long-term sink for carbon, store some ninety three percent of the Earth's CO_2, and capture more than thirty percent of the CO_2 released annually. FOOD AND AGRIC. ORG., THE STATE OF WORLD FISHERIES AND AQUACULTURE 118 (2010); *see generally* CLIMATE CHANGE IMPACTS OF OCEAN AND COASTAL LAW (R. S. Abate ed. 2015).

24. *See generally, e.g.*, *The International Seabed Authority and Deep Seabed Mining*, UNITED NATIONS, https://www.un.org/en/chronicle/article/international-seabed-authority-and-deep-seabed-mining [https://perma.cc/S9WK-UJFT] (last visited Oct. 17, 2021).

25. One may argue that, in this case, fisheries produce similar and even greater negative effects. However, here impacts of bioprospecting cannot be properly compared with those of fisheries, because the places affected by the bioprospecting are such areas as hydrothermal vents that are situated in the deepest seabed. Hence, for example, the bioprospecting vessels per se, as well as relevant effects thereof, are different from fishing ones.

26. *See* Valiela, *supra* note 4; Tilman et al., *supra* note 5.

27. *See generally* Sophie Arnaud-Haond, Jesús Arrieta and Carlos Duarte, *Marine Biodiversity and Gene Patents*, 331 SCI. 1521 (2011), https://perma.cc/Y8VA-3U4B; Sophie Arnaud-Haond, *Marine Genetic Resources: Scientific Intellectual Property Right and Patentability*, presentation at Concameau (Oct. 16, 2015), http://concarneau.mnhn.fr/sites/concarneau.mnhn.fr/files/upload/arnaudhaond_rvcc_2015.pdf [https://perma.cc/6BED-S7PB].

28. *See generally* Robin Churchill, *The LOSC Regime for the Protection of the Marine Environment – Fit for the Twenty-first Century? in* RESEARCH HANDBOOK ON INTERNATIONAL MARINE ENVIRONMENTAL LAW 22 (R. Rayfuse ed., 2015).

29. *Id.*

30. IDDRI, *supra* note 16, at 14.

may introduce a particular pressure on those organisms and the environments from which they are harvested.[31]

Despite a range of harmful potential impacts, the overall impact of bioprospecting is currently debated and is generally described in relevant mainstream discourse as "considerable."[32] The most industrialized actors claim that "bioprospecting activities are logically presumed to have fewer ecosystem impacts than exploration for commercial-scale mining."[33] To date, three countries (the US, Germany and Japan) possess more than seventy percent of the patents on marine genetic resources.[34] Several emerging economies underlined this equity concern at the dedicated global fora, including the UN.[35] This issue involves an interconnected problem. The development, commercialization, and possible upscaling associated with the market entry of numerous crucial medicines and related biotech health products using marine genetic resources (MGRs) may be artificially accelerated or delayed depending on market saturation and price volatility.[36] The MGRs value chains thus appear to be currently governed by mere market cost-benefit considerations.

When it comes to exploitation of MGRs, legally speaking, the ownership in the ocean varies depending on the exact seabed location—i.e., whether it is an exclusive economic zone ("EEZ") or an ABNJ, or else part of the continental shelf of the "Area."[37] It might, therefore, be subject to national, regional or international laws and regulations. Relevant processes of consultation on conservation, exploration, exploitation, use and ownership of ABNJs thus become more complicated due to general divergence of views on concepts and definitions.

B. CONCEPTUAL AND IDEATIONAL CONTEXT OF BIODIVERSITY IN ABNJS

Traditionally, in international law, three approaches to the ocean floor and resources outside the jurisdiction of sovereign states prevailed:

1) dividing the whole deep seabed between coastal states according to the 'exploitability' criterion under article 1 of the 1958 Geneva Convention on

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31. At this point, I do not yet make the distinction between bioprospecting and marine scientific research, as the harms described above could be produced by both.

32. IDDRI, *supra* note 16, at 14.

33. EU Parliament, Deep-seabed Exploitation—Tackling Economic, Environmental and Societal Challenges, Study IP/G/STOA/FWC/2013-001/Lot3/C4, at 43 (Mar. 2015), https://perma.cc/7HZ7-2ELV.

34. Arnaud-Haond, *Marine Genetic Resources*, *supra* note 27.

35. IDDRI, *supra* note 16, at 14.

36. *See, e.g.*, Soundarapandian Sekar & Dondayuthapani Kandavel, *The Future of Patent Deposition of Microorganisms?* 5 TRENDS BIOTECH. 210, at 213–218 (2004), https://perma.cc/NNG7-3TSZ.

37. For details, *see infra* Section III. For a critical-historical account of the ways different ocean zones were determined, *see* Surabhi Ranganathan, *Ocean Floor Grab: International Law and the Making of an Extractive Imaginary*, 30(2) EJIL 573, at 575–76 and 583–84 (2019), https://perma.cc/NJT3-HY8M.

the Continental Shelf, making the seabed's natural resources subject to the sovereign rights of the coastal States;
2) recognizing the deep seabed as *res communis,* thus submitting the seabed and its resources to the freedom of the high seas (FOHS) and recognizing that the Area and its resources could be used by any actor capable of exploring and exploiting it; and
3) declaring the ocean floor *res nullius,* basically implying the same as in the case of *res communis*, with a possibility of appropriation of the Area and its resources through occupation on top of the features of *res communis*.[38]

The ABNJ is not defined in UNCLOS but covers the high seas, which is the water column of the sea beyond any national jurisdiction, including their "seabed and ocean floor and subsoil thereof."[39] According to the above threefold conceptual and ideational framework, all three approaches lead to the same result regarding the exploration and exploitation of the deep seabed natural resources. Namely, such exploration and exploitation are restricted to few actors who have the necessary technological and financial capacities. Such exclusion, in turn, may only further exacerbate injustice and inequality between countries, starting with the most obvious—land-locked emerging economies.[40] Hence, neither the sovereignty ("exploitability") approach nor the freedom (*res nullius* and *res communis*) approaches provide for a minimally just legal framework for the Area and its biodiversity.

The term 'biodiversity' became official in 1986 during the US National Forum on BioDiversity, co-sponsored by the Smithsonian Institution and the National Academy of Sciences.[41] Initially used as a mere contraction of the long-existing term 'biological diversity' (mainly meaning diversity of species), today biodiversity is a multidimensional concept covering the diversity of all forms of life.[42] Scholars also suggest that biodiversity is a concept different from that of nature, the former pointing to any information contained at any level of organization,

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38. Based on YOSHIFUMI TANAKA, THE INTERNATIONAL LAW OF THE SEA at 178–79 (2nd ed., 2015). For a critical account, *see* Feichtner, *Sharing the Riches of the Sea: The Redistributive and Fiscal Dimension of Deep Seabed Exploitation*, 30(2) EJIL 601, at 606–07 (2019), https://perma.cc/ZL9F-FAJ3.

39. UNCLOS, *supra* note 13, arts. 1.1(1), 86; *see also* Yoshifumi Tanaka, *Principles of International Marine Environmental Law in* RESEARCH HANDBOOK ON INTERNATIONAL MARINE ENVIRONMENTAL LAW 31, 35 (R. Rayfuse ed., 2015); *Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use: Institutional arrangements and cross-sectoral cooperation in the Western Indian Ocean and the South East Pacific* , UNEP-WCMC 27 (2017), https://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/446/original/ABNJ_Institutional_Arrangements_final_for_publication_300517.pdf?1496144106 [https://perma.cc/6Y4Z-6NCW].

40. TANAKA, THE INTERNATIONAL LAW OF THE SEA, *supra* note 38, at 179.

41. *Biodiversity, 1986 Teleconference on Biodiversity*, THE NATIONAL ACADEMIES (Sept. 21–25, 1986), https://perma.cc/LH4M-GWQT.

42. *See* VIRGINIE MARIS, PHILOSOPHIE DE LA BIODIVERSITÉ. PETITE ÉTHIQUE POUR UNE NATURE EN PÉRIL 47 (2d ed. 2016).

such as genes, individuals, species and ecosystems.[43] In this Article, biodiversity is specifically deployed as biological diversity of all forms of life at all levels of their organization, as a whole, in contrast with the diversity of individual species, for example.

The potential of the conservation, exploration, and exploitation of biodiversity of the ABNJs appears to be a complex issue. On the one hand, ABNJs may be subject to the regime of the common heritage of mankind (CHM)—equitable common management of international marine areas, such as deep seabed, and their resources, in view to preserve concerned areas for posterity. On the other hand, ABNJs could yet be, by default, covered by the regime of the freedom of the high seas (FOHS) in the absence of the clear contrary indication. Beginning with the latter, FOHS means the freedom of access, exploitation, and marine scientific research on a 'first-come-first-served' basis. However, such grounds may only work in the high seas, and FOHS arguably does not apply to the deep seabed, including the Area. FOHS is not a total freedom, but a defined number of freedoms governed by international customary and treaty law, such as "freedom of fishing," "freedom of overflight," "freedom of navigation," "freedom of scientific research," "freedom to construct artificial islands and other installations," and "freedom to lay submarine cables and pipelines."[44] FOHS establishes freedom of exploration and exploitation of marine resources by economic actors, including private ones, whereas CHM aims at preventing such freedom.

CHM is referred to as a concept encompassing:[45]

1) a principle of non-appropriation;
2) common management of areas, and their resources, subject to common heritage;
3) peaceful use of such areas;
4) duty to preserve concerned areas for posterity—or future generations (of humans)—as implied by the terms "heritage" and "mankind"; and
5) equitable considerations, in particular of the interests and needs of developing States, including the equitable sharing of monetary and non-monetary benefits, transfer of technology, and capacity building.[46]

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43. *See id.* at 48–49. *See generally* Gilles Boeuf, *Preface to the Second Edition* of VIRGINIE MARIS, PHILOSOPHIE DE LA BIODIVERSITÉ. PETITE ÉTHIQUE POUR UNE NATURE EN PÉRIL (2d ed. 2016).

44. UNCLOS, *supra* note 13, at art. 87(1)(a)–(f).

45. *Id.* at pt. XI, arts. 136–37; *see also* G.A. Res. 2749, Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction, at 24 (Dec. 17, 1970); RUDIGER WOLFRUM, COMMON HERITAGE OF MANKIND, Max Planck Encyclopedia of Public International Law (2009), https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1149 [https://perma.cc/L4YT-XNAX]; Tladi, *Pragmatism and Sustainability, supra* note 16, at 125–127; Tanaka, *Principles of International Marine Environmental Law, supra* note 39, at 180–81.

46. For historical accounts of coining the term CHM within the UN circles, and especially its fifth element—that is, development and North-South equity—see, for example, U.N. GAOR, 22nd Sess., 1515th mtg. at 1, U.N. Doc. A/6716 (Nov. 1, 1967) (discussing Maltese Ambassador Pardo's Proposal

René-Jean Dupuy otherwise regrouped these elements under two banners: trans-spatiality and trans-temporality.[47] Scholarship offers some other alternative taxonomies of CHM, but the five above items generally cover them.

Several of the above elements also relate to the questions of justice. The beginnings of the justice argument in this paper are as follows. Distributive justice means that something is being distributed by a distributor equally between all entitled recipients who are to be treated equally.[48] Environmental justice is generally referred to as a more equal distribution of environmental risks and benefits between countries of the Global North and South.[49] Environmental justice hence seeks both intra- and inter-generational justice between different groups as well as between present and future generations of humans. Alternatively, I believe there should be a broader notion of justice—what I call "pan-anthropic environmental justice." Pan-anthropic environmental justice, I argue, builds on environmental justice as it is defined above, but additionally requires equal distribution among all humans and emphasizes vulnerable human groups who are discriminated against along social, gender, racial, economic, and geographical lines.

The above discussion suggests that any such justice argument ultimately creates a principled obligation (whether legal or moral) towards human beings, actual or potential. It thus leads to the attribution of principled obligations and any subsequent considerations exclusively to humans, which some might qualify as "anthropocentrism."[50] As a broader account, anthropocentrism is premised on objectivizing and mastering nature by dominating and exploiting nature through the development of science and technology.[51]

It is crucial to specify that only certain attitudes and activities of only some humans fit that narrative. Indeed, it is challenging to compare CO_2 emissions

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that the seabed is part of the CHM); Economic and Social Council Res. 1112 (XL) (Mar. 7, 1966), https://perma.cc/PQ7Q-9QWU; Comm'n to Study the Org. for Peace, New Dimensions for the United Nations: the Problems of the next decade 44–66 (New York: Oceana Publications, 1966); G.A. Res. 2749, *supra* note 45 (declaring the ocean floor to be beyond natural jurisdiction and to be the common heritage of mankind); UNCLOS, *supra* note 13, at ¶ 6–7 of the pmbl. and arts. 136–37; and such early academic writings on the subject matter as Larschan & Brennan, *The Common Heritage of Mankind Principle in International Law*, 21 COLUM. J. TRANSNAT'L L. 305 (1983).

47. RENÉ JEAN DUPUY, DANIEL VIGNES & MOHAMMED BENNOUNA, *LA ZONE, PATRIMOINE COMMUN DE L'HUMANITE,* 1 TRAITÉ DU NOUVEU DROIT DE LA MER [the, area, common heritage of humanity, Treaty on the new law of the sea] 499, at 500–505 (1985).

48. MARCEL WISSENBURG, *The Idea of Nature and the Nature of Distributive Justice, in* THE POLITICS OF NATURE: EXPLORATIONS IN GREEN POLITICAL THEORY 3, at 6 (Andrew Dobson & Paul Lucardie eds., 1993).

49. *See generally* PHILLIPE CULLET, *Environmental Justice in the Use, Knowledge and Exploitation of Genetic Resources, in* ENVIRONMENTAL LAW AND JUSTICE CONTEXT 371 (Jonas Ebbesson & Phoebe Okowa eds., 2009) (discussing use of genetic resources); Stoll, *ABS, Justice, Pools and the Nagoya Protocol, in* COMMON POOLS OF GENETIC RESOURCES, EQUITY AND INNOVATION IN INTERNATIONAL BIODIVERSITY LAW 305 (E. C. Kamau & G. Winter eds., 2013).

50. *See* MARIS, *supra* note 42, at 133–34.

51. *See* Vito de Lucia, *Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law,* 27 J. ENV'T L. 91, 115 (2015).

from aviation fuel with those from a peasant's cow; or emissions from organized industrial agriculture with definite for-profit industrial ends with those from subsistence activities of rural farmers.[52] More concretely to the topic of this Article, the exploration and further exploitation of biodiversity, both in the deep seabed and high seas, are restricted to those few states and private actors who have the necessary technological capacity and financial resources.[53] Therefore, a system of values and institutions, and a set of practices of some humans, which led to the age labelled the Anthropocene, should not be called "human," because that term otherwise designates the entirety of humanity. The human race should not (nor could, should they want to) be categorized as belonging to the anthropocentric system of values, institutions and practices. Such a system of values and institutions and a way of production and consumption are not necessarily only capitalist, as they seem to go beyond modern liberal capitalism.[54] I suggest that the mainstream anthropocentrism as a system, which also ultimately led to the Anthropocene, is a hierarchical relationship with nature, based on conquest, mastery, exploration and exploitation and on modes of industrial production and consumption that adopt utilitarian and instrumental approaches to nature.[55] Therefore, however sustainable they might be, anthropocentric approaches, if applied alone, ultimately exhaust natural resources and disturb biodiversity.

An intuitive counter-project formulated in opposition to anthropocentrism is ecocentrism. However, aside from values of ecocentrism, the ecocentric institutions and modes of production and consumption seem to still be far from mainstream as compared to those of anthropocentrism. Therefore, for the moment, it appears that ecocentrism could not be properly juxtaposed to anthropocentrism as another system of modern institutions (including particular legal institutions) and socio-economic and industrial organization (including the modes of production and consumption). For the sake of contrast, it is expedient to look at anthropocentrism and ecocentrism as

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52. The recommendation of the Working Group on the Anthropocene that the mid-twentieth century be viewed as the starting point of the Anthropocene (see University of Leicester, *supra* note 1) only confirms the assertion that it is certainly not the emissions from methane produced by rural farms' cattle and other comparable subsistence survival sources that triggered the so-called Great Acceleration in the middle of the past century.

53. *See supra* Section I.B.; *infra* Part II, Table 1.

54. Some may rightly point out that, in this reasoning, if one substitutes 'nature' with 'working class,' the result would be a typical Marxian capitalist hierarchy. However, most of known alternative systems, such as socialism or communism, while claiming that social strains are the root cause of unsustainability, equally rely on environmentally devastating systems of industrial production. That is, a long pre-capitalist phase was equally characterized by a comparable nature exploitation and destruction based on the same type of 'man-nature' hierarchy, and was also the foundation of the general industrial progress inherent in communist and socialist systems, seeing nature and its resources as *infinite*.

55. In this sense, *see, e.g.*, De Lucia, *supra* note 51, at 94–96; Helen Kopnina, *Half the Earth for People (or More)? Addressing Ethical Questions in Conservation*, 203 BIOLOGICAL CONSERVATION 176, at 179 (2016).

two major *idioms* encompassing—to varying degrees—ethics, concepts, political thought, and even parties, economic theories, and social movements.

Viewed as such, various shades of ecocentrism stretch from biocentrism,[56] through deep ecology (or ecologism),[57] which principally fights against industrialism, capitalism and, ultimately, modern consumerism, but typically blames the whole humanity for those conditions and resulting circumstances,[58] to the wilderness and a consequent rewilding, some going so far as claiming 'half the Earth' for those purposes.[59]

On the other end of the spectrum, various developments that may, so to speak, navigate under the banner "anthropocentrism," stretch from "hard" or mainstream anthropocentrism (as delineated above,[60] which some also call bold resourcism[61]) to speciesism,[62] to pathocentrism[63] (and pathospeciesism[64] as a derivative), to "soft" or "weak" anthropocentrism,[65] sometimes also labelled as "shallow" ecology[66] or environmentalism. The contemporary idiom of anthropocentrism is currently based on sustainable use of natural resources and the vision of anthropogenic

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56. It includes all forms of life in the scope of "individuals" deserving direct moral considerations. *See* MARIS, *supra* note 42, at 144–45, 157–58.

57. It underlines an intrinsic value of nature which is 'objective,' i.e., independent from any external (mostly human) values. *See, e.g.*, The World Charter for Nature, Oct. 28, 1982: G.A., U.N. Doc. A/37/251 21 (Oct. 28, 1982) (underlining an intrinsic value of nature which is 'objective,' i.e., independent from external, mostly human values).

58. It considers human species as a threat to the whole of nature. *See generally,* Garrett Hardin, *The Tragedy of the Commons,* 162 SCIENCE 1234–47 (1968) (discussing tension between biocentrism and industrialism); and, of course, Stoermer's and Crutzen's theory of the Anthropocene outlined above, *supra* note 1.

59. Not to confound with the activities of Wilderness Society founded in the US in 1935, advocating for embeddedness of humans and their physical and built environments in nature, for the autonomy of Native Americans, etc. The contemporary wilderness movement claims that important parts of Earth are being protected altogether from any human interventions. Michael Soulé, *Rewilding and Biodiversity: Complimentary Goals for Continental Conservation,* 8 WILD EARTH 19 (1998) (introducing the idea of rewilding). Dave Foreman, *The Wildlands Project and the Rewilding of North America,* 76 DENV. U. L. REV. 535, 544 (1998) (discussing concept of rewilding as a conservation strategy); REED F. NOSS & ALLEN Y. COOPERRIDER, SAVING NATURE'S LEGACY: PROTECTING AND RESTORING BIODIVERSITY (2d ed. 1994); Recent claims for allocating half the Earth for humans and 'half for the rest of life,' which triggered a few controversies and debates, come from Edward O Wilson, *Half Earth*, Aeon (Feb. 29, 2016), https://perma.cc/5828-Y62Z.

60. That is, based on a hierarchical relationship with nature, and on modes of production and consumption that adopt utilitarian and instrumental approaches to nature, see *supra* this section.

61. De Lucia, *supra* note 51, at 94.

62. It posits that human species possess both instrumental and moral rationality, characteristics that make humans the autonomous agents endowed with greater moral rights than all other species. *See* MARIS, *supra* note 42, at 140–41.

63. This is the making of moral considerations based on the sensibility of any life form, that is, on the capacity of sensible beings to feel pleasure and especially pain (Greek: *pathein*, "suffer"). *See* MARIS, *supra* note 42, at 148.

64. This is a claim that, because humans have greater moral rights, they have greater responsibilities towards all other species. *See generally* PETER SINGER, ANIMAL LIBERATION (2nd ed., 1995).

65. De Lucia, *supra* note 51, at 94–95.

66. Wissenburg, *supra* note 48, at 4.

changes, such as the loss of biodiversity as a current and future problem for humanity. Its main narratives are sustainable development and science and technology, and its ultimate objective is sustainable societal welfare—where "societal" also stands for 'human'. Anthropocentrism dressed in environmentalism thus represents an underlying rationale of virtually all current national and international objectives, initiatives and arrangements that relate to the protection and preservation of nature and biodiversity.

Overall, the multilayered idiom of anthropocentrism places humanity at the heart of its system of values, whereas ecocentrism puts nature at the center. Such categorization points to differences in moral and legal objectification. Particularly, in anthropocentrism, nature is an object and humans are a subject, whereas, in ecocentrism, humanity ought to decide and act in the best interests of nature. However, in both cases, there is a certain degree of hierarchy: namely, humankind is at the heart of anthropocentric preoccupations, while ecocentrists place nature in the center. Of course, this is a generalization. Some lines of ecocentrism, such as biocentrism and ecologism, are preoccupied with the unification of humans and nature in a non-hierarchical manner, hence aiming at uniting all forms of life, including humans, in one system of values.

Yet, in general, both approaches have two critical flaws. First, it seems that the modern vision of nature is a categorical "either-or": nature either represents an object of utilitarian and instrumental use with attached ownership or is seen as "wilderness to be preserved apart from human society".[67] Second, and consequently, such vision, called by Bruno Latour a modern "bifocal vision",[68] suggests that ecocentrists do not seem preoccupied with justice[69] as anthropocentrists, both are more concerned with the relationship of "man-nature" rather than "conservation-justice."[70]

I suggest that a broader justice for biodiversity should seek to include protectionist elements of pan-anthropic environmental justice as defined in this Article but go beyond its distributional aspects. That is, it should aim to bring all other forms of life into the realm of justice.[71] In a way, it is justice between all forms of life at all levels of its organization, which would thus intend to conserve not only

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67. De Lucia, *supra* note 51, at 115.

68. Bruno Latour, Facing Gaia: Eight Lectures on the New Climate Regime 125, 127–28 (2017); *see also* De Lucia, *supra* note 51, at 115 (discussing Vito de Lucia use of the term 'modern bifurcated vision of nature').

69. However, there is literature emphasizing justice in this debate. *See, e.g.*, CLIMATE JUSTICE: CHALLENGES AND PERSPECTIVES OF COP 21 (Agnès Michelot ed., 2016); Luc Abbadie, Agnès Michelot, Charles Figuières, *Inégalités Écologiques et Justice Environnementale, in* ÉCOLOGIE ET ÉCONOMIE DE LA BIODIVERSITÉ 30, 35–48 (Stefano Bosi & Agathe Euzen eds., 2014); *see also* Cullet, *supra* note 49, at 42; Stoll, *supra* note 49, at 42.

70. Wissenburg, *supra* note 48, at 5.

71. *See, e.g.*, CONFRONTING ECOLOGICAL AND ECONOMIC COLLAPSE. ECOLOGICAL INTEGRITY FOR LAW, POLICY AND HUMAN RIGHTS at 65–77 (Laura Westra, Prue Taylor & Agnès Michelot eds., 2013) (comparing elements of such justice in several works on a wider ecological justice or ecological integrity); *see generally* RAPHAËL MATHEVET, LA SOLIDARITÉ ÉCOLOGIQUE. CE LIEN QUI NOUS OBLIGE

future natural resources for future humans but also *current biodiversity for future biodiversity*. In this paradigm, I see justice primarily as non-domination, whereas the meaning of justice as distribution[72] is minimized, although not abandoned.

The analysis that follows explores two possibilities of justice in the current governance of ocean biodiversity and hence also of future UNCLOS instrument. The first possibility is based on the premises of pan-anthropic environmental justice as conceived above, where CHM would be a first steppingstone. Yet, a broader justice encompasses the first kind but seeks to embrace all forms of life. This second possibility of justice hence looks beyond the binary vision of 'man-nature' that, currently, all anthropocentric and virtually all ecocentric projects of justice seem to bear.

At the outset, even in terms of narrower distributive justice among all humans, at least three of the five above CHM elements, namely, the equitable benefit- and technology- sharing, non-appropriation, and the preservation of areas for posterity, seem to be at odds with the current conceptual and ideational background of exploration and exploitation of the deep seabed biodiversity. I outline these aspects below.

II. MAIN STAKES OF EXPLORATION AND EXPLOITATION OF MARINE BIODIVERSITY

In this section, I overview relevant socio-economic aspects of exploration and exploitation of MGRs. The aim is to add to the ideational and conceptual context of the subject-matter discussed above, and thus, together with the current legal framework that will be addressed in the next section, to pave the groundwork for the thrust of this Article's analysis of a new global legal regime on marine biodiversity of ABNJs.

The modern rationale of exploration and exploitation of the deep seabed biodiversity seems to be at odds with the logic of CHM. Particularly, value chains for relevant genetic biological resources demonstrate that commodification of those becomes a clear and progressive trend. Such value chains could be roughly divided into the exploration and exploitation phases as follows.

The exploration phase includes two stages:

1) discovery and bioprospecting, including the finding of new molecules, collection, preparation, cataloguing and storing of samples;
2) research and development, including analysis and screening to identify possible candidates for commercialization, and protecting them by patents.

(2012) (comparing elements of such justice in several works on a wider ecological justice or ecological integrity).

72. *See generally* Avery Kolers, *Justice, Territory and Natural Resources*, 60 POL. STUD. 269 (2012).

The exploitation phase includes three stages:

1) product development, which comprises testing the product and pre-market preparation;
2) commercialization and possible up-scaling; and
3) market entry, which includes marketing, product positioning and selling.[73]

What is alarming is that the above value chains for deep seabed biodiversity—more precisely, for MGRs—are likely to disproportionally increase the commercial side of the contemporary biotechnology at the detriment of the science side. Indeed, the above scheme underlines and values such commercial processes as the analysis and screening to identify possible candidates for commercialization; protection by patents; and, ultimately, the product development and commercialization itself.

The question is then whether humans are at all able to equitably exploit and share the benefits of the deep seabed MGRs, while at the same time ensuring adequate preservation of these ecosystems and their resources. Today, this does not seem to be the case. More precisely, both the exploitation and the benefits (mostly monetary) are concentrated within leading pharma corporations and a handful of the most industrialized states.[74] For instance, only ten countries (some EU countries, Japan, Norway, Switzerland, the UK and the US) account for ninety percent, and only three of them (the US, Japan, Germany) account for seventy percent of all patent claims covering MGRs, including from the waters beyond national jurisdictions.[75] Among EU countries, in terms of research, patents, and concentration of companies having patents or active in bioprospecting and biotechnology, France and Germany have the leading positions.[76] Regarding companies, in terms of the number of patents related to marine biological resources, Bayer and BASF are the leaders in Europe.[77]

73. EU Parliament, *supra* note 33, at 13.

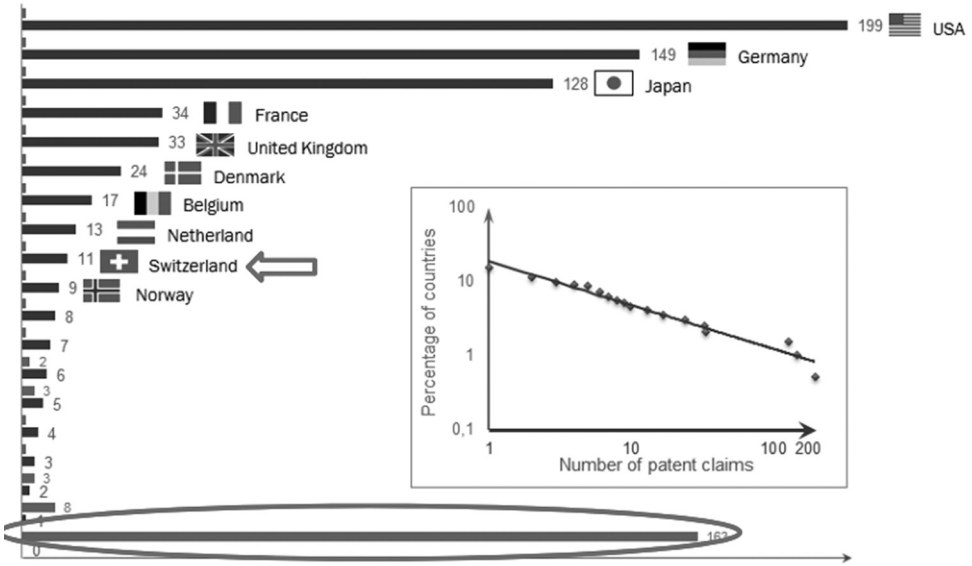
74. Charles Lawson & Susan Downing, *It's Patently Absurd – Benefit Sharing Genetic Resources from the Seas According to UNCLOS, the CBD and TRIPs*, 5 J. INT'L WILDLIFE L. & POL'Y 211, 225 (2002); Arnaud-Haond, *Marine Genetic Resources*, *supra* note 27.

75. *See generally* Arnaud-Haond et al., *Marine Biodiversity and Gene* Patents, *supra* note 27, at 20.

76. EU Parliament, *supra* note 33, at 9. Note that after Brexit, the EU-28 becomes the EU-27.

77. *Id.*

TABLE 1. WORLD REPARTITION OF THE PATENT CLAIMS FOR GENES OF MARINE ORIGIN WITH SOURCE



Source: Arnaud-Haond for Ifremer, 2016

These benefits are shielded, multiplied and streamlined by a rigorous system of intellectual property rights ("IPRs"), including domestic IPR rules, the World Trade Organization ("WTO") Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS"), and the mandate of the World Intellectual Property Organization ("WIPO"). Those regimes benefit the lead corporations within relevant value chains and the industrialized countries where these firms are based. Moreover, the current bioprospecting efforts and technologies are concentrated in the hands of the same actors.

In terms of distributive justice, humanity may theoretically benefit from new technologies, research, and innovation related to MGRs. It could especially be major regarding the development of new drugs for AIDS treatment, anti-cancer and other tumors, anti-herpes, painkillers and other medicines;[78] production of biofuels; as well as bioremediation (e.g., the use of specific organic materials to clean hazardous waste spills).[79]

However, the global system that IPRs erects forms monopoly rights—albeit temporary ones—on inventions. These reduce the ability of the global poor to access life-saving medicines and other crucial inventions and technologies. Indeed, the IP-related protection for pharmaceutical products makes them

78. Arnaud-Haond, *Marine Genetic Resources*, *supra* note 27, at 20.
79. *See generally* Zewers, *supra* note 3 at 170–71.

expensive, especially since many emerging economies generally lack the budget to provide expensive patented drugs via the public health system.[80] Yet, today most patents on MGRs are possessed by the largest pharma corporations of only three advanced economies (see Table 1). Therefore, the progress in bioprospecting of the initial genetic material from the global seabed does not automatically imply universal public access to therapy and other medical deployments of MGRs.

By and large, the "rest" of the world, and, in particular, landlocked emerging economies, do not seem to be part of the current or even potential use of benefits of the global deep seabed biodiversity.[81] As a result, since the early 2000s, some countries of the Global South have been the main initiators of a call for the creation of a new international legal regime regarding ABNJs, including global ocean floor biodiversity.[82]

III. CURRENT LEGAL FRAMEWORK APPLICABLE BEYOND NATIONAL JURISDICTIONS

As suggested above, the modern practice of exploration and exploitation of MGRs is not a fair and equitable way of distributing the risks and benefits thereof. The principle of the common heritage of mankind could represent an initial, yet crucial step towards justice as a fair and equitable pan-anthropic governance of the world ocean zones that belong to no one. However, this type of justice argument leads to principled considerations towards, as well as the legal standing of, exclusively current and future *humans*. Therefore, a broader justice line would include all forms of life. This section looks at a particular place and possible realization of both above justice projects, one for humans and one for all forms of life, in the existing legal framework of the future UNCLOS regime for oceanic biodiversity. I first outline the main relevant legal and regulatory instruments (A). Second, I delve into the main flaws that restrain the existing framework and proposals for the future instrument from providing for fair and equitable management and conservation of the global deep seabed biodiversity (B). Third, I offer a summary of the strengths and challenges of surveyed legal instruments (C).

A. AN OVERVIEW OF KEY LEGAL INSTRUMENTS

The legal framework addressed in this section is likely to govern deep-sea genetic resources in the new treaty. It includes the UNCLOS; the Convention on Biological Diversity (CBD); and the WTO TRIPS. Although there are other

80. *See generally* SARAH JOSEPH, *Trade Law and Investment Law*, *in* THE OXFORD HANDBOOK OF INTERNATIONAL HUMAN RIGHTS LAW 841, 850 (Dina Shelton ed., 2013).

81. Yoshifumi Tanaka equally submits that states that are technologically less-developed, and especially the land-locked ones, would be negatively impacted. Tanaka, *Principles of International Marine Environmental Law, supra* note 39, at 179.

82. Peter Prows, *Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law (and What Is to Be Done About It)*, 42 TEX. INT'L L.J. 241, 291 (2007); Zewers, *supra* note 3, at 170–71.

potentially relevant international instruments, the choice of those three regimes for analysis in this Article draws on the present indicative list of global treaties that are relevant for the future agreement[83] combined with a list of concepts and terms relevant for a future agreement,[84] as well as the scope of main legal issues of the topic as delineated in the introduction: the interplay between the international law of property, particularly IPRs; international biodiversity law; and the international law of the sea, including conservational aspects.

The UNCLOS is the main forum for negotiations.[85] It was adopted in 1982 and entered into force in 1994, after being signed and ratified by 168 parties (as per the latest update in June 2021), with some notable exceptions, such as the United States.[86] UNCLOS declares that the sea beyond national jurisdiction ("the Area") "and its resources are the common heritage of mankind."[87] A special legal regime for the Area is elaborated in Part XI of the Convention, and is also subject to the UNCLOS Agreement relating to the implementation of Part XI of the Convention (the New York Protocol).[88] Not all parties to the UNCLOS are parties to the New York Protocol and other UNCLOS implementing agreements.[89]

The new instrument on biodiversity was proposed as another implementing agreement to the current UNCLOS framework, in addition to an already existing implementing agreement on straddling and highly migratory fish stocks,[90] and another one on mining in the deep seabed. The latter instrument gave birth, within UNCLOS, to the International Seabed Authority ("ISA"), and governs and

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83. For a complete present indicative list of global treaties, refer to UNCLOS, Indicative List of Global Treaties, available at http://www.un.org/Depts/los/biodiversity/prepcom_files/Indicative_list_of_global_treaties.pdf. This list is based on previous reports of the UN Secretary-General on issues relating to the conservation and sustainable use of marine biodiversity of ABNJs (*e.g.,* A/60/63/Add. 1) and includes treaties adopted thereafter. The document, which is a living document, does not purport to be exhaustive and might be developed incrementally to include regional treaties as well as other international instruments [https://perma.cc/2ENB-8U9B].

84. 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 (Apr. 8, 2016). https://www.un.org/depts/los/biodiversity/prepcom_files/PrepCom_1_Chair's_Overview.pdf [https://perma.cc/87MF-M9GB]

85. U.N., 69th Sess., 96th plen. mtg. at 3, U.N. Doc. A/RES/69/292 (June 19, 2015).

86. Division for Ocean Affairs and the Law of the Sea, Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements (May 28, 2021) https://www.un.org/depts/los/reference_files/chronological_lists_of_ratifications.htm. [https://perma.cc/N6XX-S93K].

87. UNCLOS, *supra* note 13, at art. 136; *see also* U.N. GAOR, 25th Sess., 1933d plen. mtg. at 24, U. N. Doc. A/RES/2749(XXV) (Dec. 17, 1970).

88. U.N. GAOR, 48th Sess. 101st plen. mtg., U.N. Doc. A/RES/48/263 (July 28, 1994).

89. *See, e.g.*, *United Nations Convention on the Law of the Sea*, UNITED NATIONS TREATY COLLECTION (Feb. 10, 2021), https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en [https://perma.cc/QT4A-X6YZ]; Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, UNITED NATIONS TREATY COLLECTION (Feb. 10, 2021), https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXI-6-a&chapter=21&clang=_en [https://perma.cc/NJ4N-CECV].

90. Agreement for the Implementation of the Provisions of the UNCLOS relating to Straddling and Highly Migratory Fish Stocks, Dec. 11, 2001, U.N. Doc A/CONF.164/37.

coordinates deep seabed activities with a specific focus on deep-sea minerals—so, only metals.[91] However, the UNCLOS is more than ambiguous as to seabed biological genetic resources.

The CBD was adopted in 1992 and entered into force in 1993.[92] It currently has 196 parties, 168 of which are signatories.[93] As already mentioned, the United States is not a party to the UNCLOS; what is even more striking is that it is not a party to the CBD either.[94] The fact that such an essential decision-maker in global marine, environmental, and commercial policies, and the current leader in the patent claims relating to MGRs, is not a party to either of the two regimes is not encouraging for the conservational aspects of the future instrument (the US does participate in the talks over the new treaty[95]). The CBD defines biodiversity and promotes (i) the sustainable use of its components, (ii) the conservation and (iii) fair sharing of benefits of genetic resources in areas under national jurisdiction.[96] Fair and equitable benefit-sharing was at the heart of the political agreement at the time of adoption of the CBD; it was created to trigger economic incentives for the Global South to conserve biodiversity, as well as offer a means to correct related distributive injustices.[97] Benefit-sharing, as provided by the CBD, intends to embody "an international approach to achieve sustainable development and equity,"[98] thus aiming to integrate economic, social, and environmental considerations, as well as the sharing of both economic and non-economic benefits.

The CBD Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (the Nagoya Protocol, or Protocol), was adopted in 2010 and entered into force in 2014. It represents an effort to delineate the scope of the CBD's application and addresses the questions of environmental sustainability, sustainable development, and intergenerational environmental justice.[99] Notably, any possible adjustment towards a

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91. U.N. Doc. A/RES/48/263, *supra* note 88.

92. *History of the Convention*, CONVENTION ON BIOLOGICAL DIVERSITY (Sept. 9, 2021), https://www.cbd.int/history/ [https://perma.cc/96JL-5YG4].

93. *List of Parties*, CONVENTION ON BIOLOGICAL DIVERSITY, https://www.cbd.int/information/parties.shtml [https://perma.cc/KG62-ZTGY] (last visited Sept. 2, 2021).

94. *See id.*

95. For the full final list of participants to negotiations, *see* 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, Final List of Participants (Apr. 21, 2016), http://www.un.org/depts/los/biodiversity/prepcom_files/Final_List_of_Participants_BBNJ.pdf [https://perma.cc/DV2G-XCUJ].

96. That is, its three main objectives. *See, e.g.*, Convention on Biological Diversity art. 1, Jun. 5, 1992, 1760 U.N.T.S. 79.

97. Elisa Morgera & Elsa Tsioumani, *The Evolution of Benefit Sharing: Linking Biodiversity and Community Livelihoods*, 19 REV. EUR. COMP. & INT'L ENV'T L. 150, 153 (2010).

98. ELISA MORGERA, ELSA TSIOUMANI AND MATTHIAS BUCK, UNRAVELING THE NAGOYA PROTOCOL: A COMMENTARY ON THE NAGOYA PROTOCOL ON ACCESS AND BENEFIT-SHARING TO THE CONVENTION ON BIOLOGICAL DIVERSITY at 14 (2014).

99. *See, e.g.*, *id.* at 1, 13–14, 24.

fairer and hence stricter approach of the Protocol to IPRs, and, in particular, the TRIPS agreement, is unattainable. While possible tensions between socio-environmental considerations and commercial interests were manifest during the Protocol's negotiations, the final text pragmatically circumvents any reference to this peculiar yet important relationship.

The third core regime of this analysis is the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS"). TRIPS is one of the multilateral agreements of the WTO that was adopted at the conclusion of the GATT Uruguay round that also created the WTO in 1994.[100] WTO members (and hence parties to TRIPS) numbered 164 at the latest accession in July 2016, and more than 140 of them are also contracting parties of the UNCLOS; virtually all CBD parties are WTO members, but not necessarily the other way around (as mentioned, prominent WTO members, such as the United States, are not CBD parties).[101]

Inventions obtained from genetic resources, including MGRs, can be patented according to TRIPS Part II, which sets the minimum standards of intellectual property protection, primarily as defined in Article 27. This provision says that "patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application."[102] Furthermore, TRIPS Article 27(3)(b) specifies that WTO members may exclude from patentability "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes." Read together, these two provisions suggest that all micro-organisms and microbiological processes which are new, inventive, and capable of industrial application arguably may and even must be patented. Genetic material derived from the genetic resources of the deep seabed could, in principle, fit into this category. TRIPS further posits that "patents shall be available and patent rights enjoyable without discrimination as to the *place* of invention."[103] Yet, if valuable genetic materials are directly derived or derivable from the genetic resources sampled or harvested in the deep seabed, should the latter be considered the "place" of invention, and/or the "source" of those genetic materials? If so, it is

100. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 33 I.L.M. 1197, 1869 U.N.T.S. 299 (1994) [TRIPS]. *See generally What is the World Trade Organization?*, WORLD TRADE ORGANIZATION, https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact1_e.htm [https://perma.cc/9JLN-XGNB] (last visited Oct. 17, 2021).

101. *Understanding the WTO: The Organization: Members and Observers*, World Trade Org., https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm [https://perma.cc/2Q4F-LKFN] (last visited Sept. 2, 2021); *see United Nations Convention on the Law of the Sea*, *supra* note 89; *List of Parties*, *supra* note 93.

102. TRIPS, *supra* note 100, at Art. 27(1).

103. *Id*. emphasis added.

likely that a WTO member simply could not contest another member's right to patent such genetic materials on the grounds of their origin in the deep seabed.

To summarize the state of the law in this framework, the UNCLOS sets the standards of protection and preservation of the marine environment and its resources. The CBD carries clear rules on conservation of biodiversity, and its sustainable and equitable use. The TRIPS offers rules on IPRs that may also extend to genetic resources of the deep seabed.

B. MAIN CHALLENGES TO THE CURRENT LEGAL FRAMEWORK

The TRIPS sets the minimum intellectual property standards for WTO members. At the same time, the UNCLOS imposes the rules on the access to, and sustainable use and management, including preservation and protection, of the ocean's resources. The CBD brings in more precise aspects of benefit-sharing and conservation of biodiversity. These three instruments are quite interrelated, even if it is not immediately apparent.

The idea of complementing the new treaty's regimes of the law of the sea and the conservation of biodiversity with a rigorous IPR system seems entirely sound to many pragmatic commentators. According to one mainstream view, IPRs, especially those protected by TRIPS, may allocate the resources and value most appropriately through patenting, which would distribute the benefits from exploiting and privatizing genetic resources.[104] According to this viewpoint, the conservation of MGRs is positively and proportionally correlated with privatization and commercialization. According to another popular opinion, the access and benefit-sharing schemes proposed by the UNCLOS and especially the CBD are being undermined, at least for WTO members, by patents compliant with TRIPS.[105] Alternatively, compatibility clauses and recent normative developments in each regime suggest an interdependent relationship between the UNCLOS, the CBD, and the TRIPS.[106] Many pragmatic voices submit that legal quarrels relating to the management and exploitation of marine biodiversity illustrate an overall inter-systemic dialogue and the need for such dialogue to form a coherent legal framework.[107]

However, such a relatively optimistic vision could be contested on more than one ground. In the remainder of this section, I analyze the main practical challenges occurring between and within each of the three-core international legal regimes (TRIPS, CBD, and UNCLOS), as well as conflicts due to their combination in the relevant UNCLOS consultations and negotiations. More theoretical

104. *See generally* JOSEPH HENRY VOGEL, GENES FOR SALE: PRIVATISATION AS A CONSERVATION POLICY (1992).

105. Lawson & Downing, *supra* note 74, at 212.

106. *Id.*

107. *Id.*

and fundamental flaws and avenues of such multilayer framework are discussed in the next sections of the Article.

1. "Area," "Resources," and Marine Scientific Research Under the UNCLOS

As already identified, the CHM could represent a first, yet crucial, step to a fairer governance of deep seabed beyond national jurisdictions. As this type of governance would offer justice virtually to only generations of—actual and future—*humans*, a broader justice line should, therefore, seek ways to embrace all forms of life, and biodiversity in general. The two main concepts and related issues that I address in this subsection are (i) marine scientific research (MSR), and (ii) norms and models relevant for the critical notions of "resources" and "Area" under the UNCLOS. The concept of "resources" and the subsequent notion of "Area" are crucial for understanding whether the UNCLOS principle of CHM could still adequately protect MGRs and general biodiversity of the seabed under the new global regime. It could also help to reflect on the relevance of the concept of CHM as it currently stands in international environmental and biodiversity law.

A definition, or at least, a delineation of MSR (most commonly referred to as research held in the ocean to expand knowledge of the marine environment and its processes), is, on the other hand, crucial for grasping the relationship between scientific research and bioprospecting, and hence, also for looking more critically at the principle and politics of strains between biodiversity and biotechnology. Lastly, the fact that MSR may be related to the part of the UNCLOS that covers FOHS has a particular impact on past and current ABNJ's biodiversity debates.

At the outset, there are no provisions in the UNCLOS expressly regulating *genetic* resources, or using terms "area beyond national jurisdiction" or "bioprospecting." Regarding specifically bioprospecting, while it is not mentioned, UNCLOS does cover MSR.[108] Since MSR is an activity held in the ocean to expand knowledge of the marine environment and its processes, theoretically, it could also be used for the commercial purposes of biotechnology as well, including bioprospecting. In the most relevant parts, UNCLOS says that MSR "shall not constitute a legal basis for any claim to any part of the marine environment."[109] However, no provision of the UNCLOS distinguishes between MSR carried out for commercial purposes and MSR without any direct commercial applications. The UNCLOS only distinguishes between fundamental research and applied research in Articles 246(3) and (5).[110]

In the context of ABNJs, Part XIII of the UNCLOS governing the freedom of scientific research also offers the following essential provisions. Article 238 stipulates that "States . . . and competent international organizations have the right to

108. *See, e.g.*, UNCLOS, *supra* note 13, at art. 143, pt. XIII.
109. *Id.* at art. 241.
110. *Id.* at art. 246(3), (5).

conduct [MSR]."[111] This rule, however, is subject to the "rights and duties of other States as provided for in the Convention."[112] Furthermore, Article 256 requires MSR in the Area to be held in conformity with UNCLOS Part XI.[113] It is thus asserted that CHM applies to the Area in matters of marine scientific research. In contrast, in the high seas MSR is only governed by the UNCLOS in general, and not by its Part XI, so not by CHM, the latter covering only the resources of the Area.[114] However, it is possible that the principle of the CHM does not entirely govern MSR in the Area. That is, the principle might affect only *the manner* of conducting MSR, while more generally MSR in the Area is merely subject to relevant provisions of the UNCLOS, such as Article 143.[115]

Bioprospecting, which represents sampling and harvesting of living resources of the seabed, is not enumerated in UNCLOS Part XIII. Yet, scholarship suggests that the Part XI regime may still cover bioprospecting by analogy to MSR under an expansive interpretation of FOHS, which understands the listed freedoms as non-exclusive.[116] On the policy level, this standpoint is not a majority view. Virtually only states with world-leading bioprospecting industries advance it.[117] MSR in the Area is not and should not be covered by FOHS, for that would potentially make MSR and its fruits appropriable through the principles of freedom and sovereignty in the high seas. Many states, academia, international organizations, and civil society consider bioprospecting to be distinct from MSR, and it thus should not be submitted to FOHS.[118] Furthermore, UNCLOS Articles 117

111. *Id*. at art. 238.
112. *Id*.; Tladi, *supra* note 16, at 119.
113. UNCLOS, *supra* note 13, at art. 256.
114. Tladi, *supra* note 16, at 120.
115. *See* UNCLOS, *supra* note 13, at art. 143.
116. *See* Prows, *supra* note 82, at 291.
117. *See supra* Parts I, II, and Table 1.
118. *See* de La Fayette, *A New Regime for the Conservation and Sustainable Use of Marine Biodiversity and Genetic Resources Beyond the Limits of National Jurisdiction*, 24 INT'L J. MAR. & COAST. L. 221, 261 (2009); Prows, *supra* note 82, at 291–92; Robynne Boyd, Andrew Brooke, Leila Mead & James Van Alstine, *SUMMARY OF THE EIGHTH MEETING OF THE UN OPEN-ENDED INFORMAL CONSULTATIVE PROCESS ON OCEANS AND THE LAW OF THE SEA: 25-29 J2007*, 25 EARTH NEGOTIATIONS BULLETIN, INT'L INST. FOR SUSTAINABLE DEVELOPMENT (IISD) 43, 3, 7 (July 2, 2007), [https://perma.cc/9A6M-5ETH] (noting the views of the G-77 and China on behalf of developing countries); IDDRI NEW GOVERNANCE, *supra* note 20, at 8. *But see* Sharelle Hart, *Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction*, IUCN ENVIRONMENTAL POLICY AND LAW PAPERS ONLINE – MARINE SERIES NO. 4 (2008), at 16, [https://perma.cc/GL78-ZTW5] (noting that in practice it would still be quite difficult to distinguish purely commercial bioprospecting and purely scientific marine research); Stephanie Adelle Bonney, *Bioprospecting, Scientific Research and Deep Sea Resources in Areas Beyond National Jurisdiction: A Critical Legal Analysis*, 10 N.Z. J. ENV'T L. 41, 49, 56–57, 86 (2006) (arguing that MSR is distinct from bioprospecting but nonetheless concluding that bioprospecting should be considered a FOHS). For a relatively neutral analysis of this issue, see Charlotte Salpin and Valentina Germani, *Patenting of Research Results Related to Genetic Resources from Areas Beyond National Jurisdiction: The Crossroad of the Law of the Sea and Intellectual Property Law*, 16 REV. EUR. COMP. & INT'L ENV'T L. 12, 15–17, 21, 23 (2007).

and 118 require countries to cooperate regarding "the conservation and management of living resources in the areas of the high seas," and to take necessary measures, concerning their nationals, to conserve these living resources.[119] I suggest that since the very text of the Convention clearly emphasizes the cooperation, equitable access and sharing, as well as protection and conservational aspects, it merely endorses the latter view.

Last but not least, it is suggested that it may be possible to apply the CHM principle generally to ABNJs as long as the undertakings there ensure the respect of the freedom to conduct MSR[120]—so, to respect UNCLOS Articles 241–57 mentioned above, and especially the rule that MSR must not constitute a legal basis for claims to the marine environment under Article 241. This also suggests that bioprospecting having overtly commercial ends should not be allowed in the "Area." Indeed, given that harvesting or sampling for commercial purposes inevitably implies various types of contractual relationships, including patent claims, bioprospecting is in principle illegal under the UNCLOS. In particular, such property connections plainly represent legal basis for patent claims and are thus contrary to relevant UNCLOS provisions cited above, and especially Article 241. More specifically, if, for example, as a result of bioprospecting, some sampling material would lead to a successful invention or innovation in the pharmaceutical industry, that would then lead to a patent claim over such invention or innovation. A patent claim represents a legally-based claim, which is forbidden under UNCLOS—in particular, its Article 241.

Another connected array of concerns relates to the definition of "Area" and "resources" under the UNCLOS. The ABNJs might be covered by the UNCLOS high seas regime (Part VII); or by the one of the "Area" of the deep seabed (Part XI); or by the two together, as it has been once suggested during the consultations for the future instrument.[121]

UNCLOS Part XI establishes a regulatory regime for the "Area." In UNCLOS Article 1.1(1), "Area" is defined as "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction."[122] Part XI furthermore deals with "resources" in the Area, which its Article 133(a) defines "for the purposes of this Part" as "all solid, liquid or gaseous *mineral* resources *in situ* in the Area at or beneath the seabed."[123] Importantly, UNCLOS Article 1 defines "activities in the Area" as "all activities of exploration for, and exploitation of, the resources of

119. UNCLOS, *supra* note 13, at arts. 117–18.

120. Tladi, *Pragmatism and Sustainability, supra* note 16, at 120.

121. *See, e.g.*, 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, at 6–7 (Apr. 2016), https://perma.cc/84SS-W2SZ [hereinafter PrepCom I].

122. United Nations Convention on the Law of the Sea, art. 1.1(1), Dec. 10, 1982, 1833 U.N.T.S. 397, 21 I.L.M. 1261.

123. *Id.* at art. 133(a) (emphasis added to "mineral").

the Area."[124] As the drafting history of Part XI does include references to both *living* and *non-living* resources, UNCLOS Article 1 is thus likely to comprise living resources too.[125] If that would be the case, then in the future instrument, the definition of "activities in the Area" would include exploration of marine *genetic* resources.

At the same time, because UNCLOS Article 1 is generally read together with UNCLOS Article 133, some argue that it does not cover exploration of *living* marine resources, but of mineral resources only.[126] This assertion could also be supported by the argument that, because "all activities" under Article 1 relate to the "resources" of the Area, the "resources" therefore comprise only mineral resources. There is also a middle-ground position saying that, whereas the UNCLOS covers the ocean's living resources, theoretically it also applies to MGRs, but it is designed to apply to fisheries only.[127] Finally, and importantly, we should not forget that the new instrument would apply not only to the "Area" but to ABNJs as a whole.[128] In sum, an assertion that Article 133 provides an exhaustive definition of the term "resources" for the purposes of Part XI is as debatable as the contrary claim.

Within Parts XI and XII of UNCLOS, the following provisions govern the "activities in the Area": Articles 140, 145, 148, and 209 call for non-discriminatory "sharing of financial and other economic benefits," and legislation to protect the marine environment from harm from commercial and research activities.[129] Additionally, UNCLOS Part XII addresses the prevention, reduction, and control of marine pollution and contains the general obligations of states "to protect and preserve the marine environment," including in ABNJs.[130]

The relation of the UNCLOS existing regime of FOHS to the preservation of the marine environment is generally seen as too weak to be able to address current pressures on marine biodiversity effectively.[131] Relevant UNCLOS provisions are especially criticized for not carrying sufficiently coherent obligations to ensure biodiversity *conservation*. The perceived weaknesses in the UNCLOS

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124. *Id*. at art. 1.1(3).

125. Oude Elferink, *The Regime of the Area: Delineating the Scope of Application of the Common Heritage Principles and Freedom of the High Seas*, 22 INT'L J. MAR. & COAST. L. 143, 152 (2007); *see also* Jean-Pierre Lévy, *Le Cadre de l'Exploitation*, *in* TRAITÉ DU NOUVEAU DROIT DE LA MER at 508–39 (1985) (asserting that relevant provisions of Part XI were applicable to *all* resources that *may be developed* based on the negotiations rationale of Part XI).

126. *See generally* Frida M. Armas Pfirter, *The Management of Seabed Living Resources in "The Area" Under UNCLOS*, 11 REV. ELECTRONICA DE ESTUDIOS INTERNACIONALES 1 (2006).

127. de La Fayette, *supra* note 118, at 264.

128. Tladi, *Pragmatism and Sustainability, supra* note 16, at 118.

129. UNCLOS, *supra* note 13, at arts. 140(2), 145, 148, 209.

130. *Id*. at arts. 192, 194(1–2), 197, 207, 209, 210; Tladi, *Pragmatism and Sustainability*, *supra* note 16, at 116.

131. Churchill, *supra* note 28, at 15–18; BARRITT & VIÑUALES, *supra* note 20, at 16.

conservation regime relate precisely to the entrenchment of the FOHS (as well as vague provisions that in essence rely on self-regulation).[132]

2. CBD Nagoya Protocol's Limits Relating to Bioprospecting, Intellectual Property, and Further Commercialization

In general, the CBD regime of the conservation of biodiversity appears to be the strongest among key legal regimes considered in this analysis.[133] The disclosure of origin governed by CBD Article 15 is an essential element of the Convention's access and a benefit-sharing regime that reflects the interplay of the CBD with IPRs, especially under TRIPS.[134] However, the conservation rules of the CBD applying to genetic resources are limited by the principle of sovereignty. In particular, CBD parties can only regulate genetic resources that are in their jurisdiction, thus arguably excluding the access and benefit-sharing in ABNJs.[135] Moreover, as suggested earlier, under the existing international IP regime, if the genetic material originates in the commons, it is likely to fall under TRIPS and hence be lawfully patented. Consequently, regarding the biodiversity of ABNJs, the conservation mission of the CBD seems to be limited by a "double movement" of the projects of sovereignty and intellectual property.

Article 3 of the Nagoya Protocol (the *spatial scope* of the Protocol over genetic resources) refers to CBD Article 15 (*jurisdictional limits* of the Convention) and not to CBD Article 4 (*jurisdictional scope* of the Convention). Scholarship notes that this reference is probably because, throughout the talks and drafting process of the Protocol, the above ambiguity was used to separate spatial and jurisdictional scopes regarding genetic resources of ABNJs.[136] It could possibly be explained by the fact that the Nagoya Protocol is likely to cover marine research by emphasizing the intent underlying "utilization of genetic resources" (by reference to "research and development").[137] For the purposes of the Protocol, however, it does not matter by whom it is carried out—whether public or private individuals or entities.[138] If the Protocol applies to all types of research, whether

132. Dire Tladi, *Oceans Governance: A Fragmented Regulatory Framework*, *in* OCEANS: THE NEW FRONTIER 99, 103 (Pierre Jacquet, Rajendra K. Pachauri & Laurence Tubiana eds., 2011).

133. *See supra* Section III.A.

134. *See generally* Joshua D. Sarnoff & Carlos M. Correa, *Analysis of* Options *for Implementing Disclosure of Origin Requirements in Intellectual Property Applications*, U.N. Doc. UNCTAD/DITC/TED/2005/14 (2006).

135. For instance, Tladi submits that "UNCLOS . . . Article 4(a) . . . limits the jurisdictional scope of the CBD to national jurisdiction, with the exception of "processes and activities." The author participated in the negotiations . . ., in Nagoya, as a representative of South Africa, and it should be noted . . . that . . . the majority of states argued that the scope of Nagoya could not cover areas beyond national jurisdiction." Tladi, *Pragmatism and Sustainability, supra* note 16, at 120 n.40. *See generally* Michael I. Jeffrey, *Bioprospecting: Access to Genetic Resources and Benefit-Sharing Under the Convention on Biodiversity and the Bonn Guidelines*, 6 SING. J. INT'L & COMP. L. 747 (2002).

136. MORGERA ET AL., *supra* note 98, at 76.

137. *Id.* at 63.

138. *Id.*

"fundamental" or "commercial," it could be argued that the CBD covers both MSR and bioprospecting, because they fall under its regime of "utilization of genetic resources."[139]

However, things become more complicated regarding the "activities" (together with "processes") which manifest commercial interests in marine genetic resources beyond national jurisdictions, including bioprospecting in ABNJs. Those activities seem to be implicitly excluded from the scope of the Nagoya Protocol.[140] Indeed, as suggested above regarding genetic resources of ABNJs, the Nagoya Protocol refers to CBD Article 15, thus covering those bioprospecting activities on MGRs that are under national jurisdictions.[141] The Nagoya Protocol thus excludes "processes and activities . . . within the area . . . beyond the limits of national jurisdiction."[142] Hence, the benefit-sharing of MGRs is not covered by the CBD but could be governed by mutual trade responsibilities—that is, by TRIPS.

Regarding specifically any possibility of diminishing the impact of TRIPS provisions on the marine biodiversity of ABNJs and related benefit-sharing, while it was possible to level the playing field in the talks over the Nagoya Protocol, its final text carefully avoids any reference to the relationship with TRIPS.[143] In that respect, research notes that the Nagoya Protocol was a "golden opportunity [that] has been lost" for shielding environmental measures taken in the common interest against essentially reciprocal trade obligations under the WTO [TRIPS]."[144] There is also an opinion that the Conference of the Parties (COP) to the CBD simply favors the idea that access to genetic resources should be regulated through contracts and the use of patents as a means to distribute wealth.[145]

After reaching such compromise, regretted by several commentators, the Nagoya Protocol seems to go even further in the direction of "compromising with trade" in its Aichi Targets,[146] which are outside of the scope of this Article. It is worth briefly underlining here that the values concerning biodiversity that the Protocol and the Convention currently recognize seem to facilitate, directly or indirectly, the utilitarian benefits to humans and submit biodiversity to a mere accounting system. For example, a political readiness to value and derive, even if sustainably, benefits that biodiversity "offers" to humanity has reached its height in the principle and politics of the so-called "ecosystem services" approach. This

139. *See* Convention on Biological Diversity, *supra* note 96, at art. 8(a).

140. MORGERA ET AL., *supra* note 98, at 76.

141. *Id*. at 81; *see* Convention on Biological Diversity, *supra* note 96, at art. 15.

142. MORGERA ET AL., *supra* note 98, at 81; *see* Convention on Biological Diversity, *supra* note 96, at art. 4(b).

143. MORGERA ET AL., *supra* note 98, at 92.

144. *Id*.; *see also* Riccardo Pavoni, *The Nagoya Protocol and WTO Law*, *in* THE 2010 NAGOYA PROTOCOL ON ACCESS AND BENEFIT-SHARING IN PERSPECTIVE 185, 208, 212 (Morgera et al. eds., 2013).

145. Lawson & Downing, *supra* note 74, at 23.

146. *See Aichi Biodiversity Targets*, CONVENTION ON BIOLOGICAL DIVERSITY (Sept. 18, 2020), https://perma.cc/NWG3-NWYX.

approach is integrated into various regulatory and legal conservational strategies and instruments at all levels, often through the ecosystem approach (sometimes without expressly mentioning the "services" angle).[147] Such strategies directly assimilate the natural role of biodiversity[148] to its pecuniary values, and frequently even condition and justify its conservation by such values and subsequent concrete economic benefits.[149] This contradicts the part of non-monetary benefits in the benefit-sharing that the Nagoya Protocol initially intended to bear.

C. SUMMING UP

To sum up the strengths and challenges of the surveyed instruments, the UNCLOS recognizes the protection and preservation of the marine environment and living resources. However, it neither clearly defines the "areas beyond national jurisdiction" and "marine genetic resources" for the purposes of conservation, nor explicitly submits them to the regime of the "Area," hence undermining the possibility of CHM to govern either of the two. UNCLOS conservational provisions regarding ABNJs are weak and ambiguous, mainly because they rely on FOHS and self-regulation of members.

The CBD stipulates the duty of the conservation of biodiversity, the duty of equitable considerations, and the definition of genetic resources, as well as an obligation of their sustainable and equitable use. It also clearly deals with the IPRs. Yet, regarding biodiversity, the conservational mission of the CBD is undermined by a "double movement" of sovereignty and intellectual property projects. Furthermore, the CBD covers the sharing of neither monetary nor non-monetary benefits of MGRs. Those are covered by mutual trade obligations, that is, by the TRIPS. This implies the sharing of pecuniary benefits only. Because the CBD is not strict enough with the TRIPS, it is suggested that the COP to the Convention merely prefers the access to genetic resources to be regulated through contracts and the use of patents, allegedly providing means to distribute wealth. This avenue seems plausible, given a more than ambiguous drafting of the provisions stipulating the jurisdictional scope of the Nagoya Protocol. At the same time, such an IPR-conformist stance of the CBD is likely to produce tensions with the relevant provisions of the UNCLOS, as contracts and patents create a plain basis for legal

147. Paris Agreement Under the United Nations Framework Convention on Climate Change, UNFCCC, FCCC/CP/2015/L.9/Rev.1. For an example of resources of marine ecosystems, see Directive 2008/56/EC of the European Parliament and of the Council establishing a framework for community action in the field of marine environmental policy, 2008 O.J. (L164) 19; *Aichi Biodiversity Targets*, *supra* note 146, at 6; Churchill, *supra* note 28, at 11; BARRITT & VIÑUALES, *supra* note 20, at 47.

148. That is, developing, streaming and sustaining adaptability and self-protection properties of any forms of life. *See supra* Part I.

149. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) provides the best example of the above through its very title. *See generally* the discussion in *supra* Section III.B and *see generally* VOGEL, *supra* note 104.

claims, which is contrary to the UNCLOS provisions on the management of the "Area."

As to the TRIPS, it seems to be an odd pair to the CBD, as it is not concerned in any representative manner with the biodiversity, the conservation thereof, and fair and equitable sharing of risks and benefits, particularly non-commercial ones. Its provisions that are relevant for MGRs, and especially for bioprospecting, are simply contrary to many principles and concrete provisions of the UNCLOS. I further discuss these and other fundamental mismatches in the agenda underlying the talks on the new global regime in the next sections.

It would be difficult, if not impossible, to either combine or individually deploy in the future treaty the relevant advantages of any of the three core existing regimes for pan-anthropic environmental justice, let alone a broader justice related to nature's conservation.

IV. HUMANS OR NATURE? A LEGAL-IDEATIONAL CONTEXT OF THE TALKS ON THE UNCLOS INSTRUMENT ON BIODIVERSITY IN ABNJS

In this section, I scrutinize the ideas that paved the groundwork for projects (A) and, consequently, for proposals (B) setting the agenda of the ongoing negotiations for a new global legal regime on marine biodiversity of ABNJs.

A. THE IDEAS

As mentioned above, the GA Resolution 69/292 has stipulated a two-year preparatory process ("PrepCom") lasting from 2016 to 2017 to consider elements that are being negotiated for inclusion in the prospective agreement.[150] "[B]y the end of 2017," the PrepCom was accountable to the GA for its progress in considering draft elements of the instrument.[151] After that, the GA decided to hold an intergovernmental conference for finalizing the agreement, which was to meet four times between 2018 and 2020.[152] The fourth session was scheduled for March 23 through April 3, 2020. However, due to the COVID-19 pandemic, the GA decided in March 2020 "to postpone the fourth session of the conference to the earliest possible available date to be decided by the General Assembly."[153] International lawyers thus have an unexpected opportunity to meditate on the future global agreement.

At the outset, it is essential to note that the key relevant agenda-setting gear—the above GA resolution—requires that the future global agreement must not undermine the mandates of existing treaties.[154] Thus, the new instrument must

150. *See* G.A. Res. 69/292, ¶ 1(a)–(b) (June 19, 2015).
151. *See id*. ¶ 1(a).
152. G.A. Decision, 74/543, U.N. Doc.A/74/L.41, at 1 (Mar. 9, 2020).
153. *Id*.
154. *Id*., para 1. *See generally* Tladi, *The Proposed Implementing Agreement*, *supra* note 20.

provide enough coordination between existing mechanisms and organizations,[155] discussed in the previous section (section III) of the Article. However, this section on gaps and conflicts between, and even within, core relevant existing mechanisms demonstrates that such clashes are quite numerous and considerable. This puts the agenda and talks of the future instrument on a precarious perch.

As already mentioned, central issues of marine biodiversity that are less effectively governed at the global level are the conservation of the deep seabed biodiversity through the exploration, exploitation, and sharing of benefits. Many emerging economies have long been insisting on the creation of a particular regime in this regard.[156] As a result, in 2004, the GA established an ad hoc open-ended informal working group to study the questions of the conservation and sustainable use of marine biodiversity of ABNJs, "calling upon States and international organizations to accountability and urgent action regarding growing pressures on marine biodiversity and ecosystems following international law."[157]

The proposal to develop a new instrument on marine biodiversity of ABNJs has been put forward, and in 2012 at the Rio+20 summit, governments committed to developing a new agreement under the UNCLOS to tackle the issue of the conservation and sustainable use of marine biodiversity of ABNJs.[158] In June 2015, the GA adopted by consensus the famous Resolution 69/292.[159]

However, Resolution 69/292 seems to be mainly preoccupied with the benefit-sharing line, without paying much attention to biodiversity or the conservation thereof.[160] More specifically, there is no trace in its text of the firm application or even a mention of the CHM principle.[161] In this regard, Dire Tladi notes that in an impulse to move beyond "ideological differences, there appears to be an emerging trend to avoid the term [CHM] in favor of a *more pragmatic approach*."[162] That impulse is said to be "an almost imperceptible shift in the deliberations of the Working Group and the UNGA" away from the narrative of the common heritage of mankind towards the wording "benefit-sharing," as the latter seems to offer a more natural way to consensus, and thus, to conclude the treaty.[163]

The pragmatic approach that Tladi underlines in the 2015 GA Resolution seems to be effectively incorporated into the main methods of the UNCLOS

155. Tladi, *The Proposed Implementing Agreement*, *supra* note 20.

156. Prows, *supra* note 82, at 291; Zewers, *supra* note 3, at 170–71.

157. G.A. Res., 59/24 §73 (Feb. 4, 2005) https://perma.cc/USX7-VSTF.

158. The Future We Want, G.A. Res., 66/288, U.N. Doc. A/Res/66/288 § 162 (Jul. 27, 2012), https://perma.cc/A6G3-BF7Q.

159. G.A. Res. 69/292 (June 19, 2015).

160. *See id*. at ¶ 2 (June 19, 2015).

161. This absence occurred despite the recommendations made to the GA to consider the CHM principle. *See* 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, U.N. Doc A/69/780, annex ¶¶ 16, 18, 29 (Feb. 13, 2015).

162. Tladi, *Pragmatism and Sustainability, supra* note 16, at 114 (emphasis added).

163. *Id.*

PrepComs agenda and sessions.[164] This pragmatic approach in environmental matters, the so-called environmental pragmatism, was developed in the 1990s by such authors as Bryan Norton, Andrew Light, and Ben Minteer.[165] Overall, this approach sees the debates and divergences, especially doctrinal ones, as unhelpful to the environmentalists who work "on the ground" and try to find practical, immediate solutions to contemporary environmental problems.[166] In this light, the debates between anthropocentrism and non-anthropocentrism appear particularly irrelevant.[167] The environmental pragmatists argue that, rather than carrying on philosophical debates, both ecocentrists and "weak" anthropocentrists, or environmentalists,[168] should instead join their efforts and use their energy to deploy concrete outcomes from such convergence of efforts.

Even more practically, the environmental pragmatists submit that it is more expedient to motivate and persuade actors based on their own well-defined interests, coupled with those of current and future generations of humans, rather than to either fight against or align with non-anthropocentrist arguments.[169] Different notions, mechanisms, and techniques, such as bioprospecting, benefit-sharing, ecosystem service, and the like all represent the fruits of such a pragmatic approach. For example, as the benefit-sharing is generally a more convincing concept than CHM, it seems to become an essential, normative, and practical tool to mobilize both key decision-makers and a broader public in favor of the preservation of biodiversity. The overall aim of environmental pragmatists is to reach a consensus by avoiding disputes, combining all the positions, and "satisfying" all the interests *as soon as possible*.

B. THE RESULTS

It is maybe in this quest for a quick and "light" compromise that since 2016, the PrepCom and the Committee Chair started referring to CHM alongside benefit-sharing.[170] However, the peculiar ways the term CHM is used in the agenda that has prepared the current negotiations, are alarming. For example, in the first PrepCom report, the section containing questions on benefit-sharing, the

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164. PrepCom I, *supra* note 121, at 5 and 8; 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: Chair's overview of the second session of the Preparatory Committee, at 1-2 (Sept. 9, 2016), https://www.un.org/depts/los/biodiversity/prepcom_files/Prep_Com_II_Chair_overview_to_MS.pdf [https://perma.cc/55LZ-VWQP] [hereinafter PrepCom II – Chair Overview].

165. *See* MARIS, *supra* note 42, at 198–99. *See generally* Ben A. Minteer, *Pragmatism, Piety, and Environmental Ethics*, 12 WORLDVIEWS 179 (2008).

166. *See* MARIS, *supra* note 42, at 199.

167. *See id*.

168. For an overview of various environmental thought currents, see *supra* Section I.B.

169. *See* MARIS, *supra* note 42, at 199.

170. PrepCom I, *supra* note 121, at 5, 6, 7, 13.

document states that the applicable legal regime should be "common heritage of humanity/freedom of the high seas"[171] and that the two "are not mutually exclusive."[172] Moreover, roughly one-third of the sub-section "Scope" of this same section on the sharing of benefits is actually "Intellectual property rights," underlining the patent and IP regimes, such as TRIPS and WIPO mandates that must govern the benefit-sharing.[173]

The second session of the UNCLOS PrepCom (PrepCom II), finalized in September 2016, has addressed such concrete issues as MGRs, including questions on the sharing of benefits; such measures as area-based management tools, including marine protected areas, environmental impact assessments, and capacity-building and transfer of marine technology.[174] The first session of the PrepCom I, held in April 2016, already looked at the same questions; and, more generally, at the overall objective of the future regime; relationship to other instruments and frameworks; guiding approaches and principles; and the scope of the talks and the future agreement.[175] That is, the delegates sought to consider questions on the sharing of benefits; measures such as area-based management tools, including marine protected areas; environmental impact assessments; and capacity-building and transfer of marine technology.[176]

It appears from these indicative lists of questions for discussion that clear matters of conservation of biodiversity of ABNJs per se, such as questions other than utilitarian management and monetary benefit-sharing, are somewhat absent. It could have been presumed that, because the "conservation of biodiversity" is already in the very title of the agenda of the talks and the future treaty, as well as the first point on the list of PrepComs, it could merely be that the new instrument, as a whole, would be entirely dedicated to the conservation of biodiversity of ABNJs. However, aside from sections on area-based management only very generally referring to common conservational aspects, the main questions for discussion as outlined in the two PrepCom's programs are overwhelmingly about resource-related, monetary, patent, intellectual property, and technological questions.[177]

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171. *Id.* at 6.

172. *Id.* at 7.

173. *Id.* at 9.

174. U.N., 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: Chair's indicative suggestions of clusters of issues and questions to assist further discussions in the Informal working groups at the second session of the Preparatory Committee, at 1 (Sept. 9, 2016), https://www.un.org/depts/los/biodiversity/prepcom_files/IWGs_Indictive_Issues_and_Questions.pdf [https://perma.cc/9HH5-RLQU] [hereinafter PrepCom II – Chair Suggestions].

175. PrepCom I, *supra* note 121.

176. *Id.*

177. *See* the previous paragraph of this section.

It could have then been supposed that most of these issues could at least be explained from the perspective of a pan-anthropic environmental justice, the latter still focusing on fair environmental benefit- and risk-sharing, even if only among all humans. Especially prominent in this regard would be an intense use of CHM. However, a closer look at the place and role of the latter in the agenda that the UNCLOS PrepComs have set leaves not much room for justice even for humans, let alone for other forms of life.

The PrepCom session of April 2016 did address common heritage, namely, by introducing CHM and FOHS together as the applicable legal basis and "non-mutually exclusive" regimes.[178] Such an approach is contradictory on many grounds. First, the discussions preceding the opening of the process, as well as at earlier stages of preparations, have emphasized the doctrinal debate on whether, as the law stands, deep seabed biodiversity is governed by UNCLOS Part VII (so, by FOHS) *or* Part XI (so, by CHM).[179] These discussions thus stressed the opposition of, or at least a choice between, these two regimes for relevant matters.

Second, recall that CHM draws on, among others, the ideas of non-appropriation and fair and equitable intra- and inter-generational sharing—that is, sharing of benefits, but also risks. FOHS, however, is a "first-come-first-served" scheme implying economic exploitation. At earlier stages of consultations, some industrialized countries explicitly argued in favor of subjecting ABNJs (including the deep seabed) to FOHS.[180] The updates in the PrepCom Chair's "Non-paper" dated 28 February 2017 seem to confirm the above trend. Only G77&China, CARICOM and Jamaica argued that CHM, with all five of its constitutive elements, "must underpin the new regime governing genetic resources of areas beyond national jurisdiction."[181] Iceland, for instance, maintained that CHM should not cover renewable biological resources of the seabed or within the water column beyond national jurisdictions. In contrast, Norway emphasized "free access and encouragement of research, innovation and commercial development" and "sustainable collection of genetic material"; while Japan argued that only FOHS should apply to living resources in those areas.[182]

Different and more controversial initiatives in these consultations came from countries of the Global South that were generally in favor of CHM as a regime that should apply to relevant areas and resources. For example, the 2014

178. PrepCom I, *supra* note 121, at 6 and 7.

179. Here, the discussions mentioned are those of the UN Informal Working Group, but also earlier doctrinal debates—*see, e.g.*, Tanaka, *Principles of International Marine Environmental Law, supra* note 39, at 178–79; Tladi, *supra* note 16, at 115; *see generally* de Marffy, *La Déclaration Pardo et les Six Années de Comité des Fonds Marins* 123 (Dupuy &Vignes eds. 1985).

180. *See supra* Sections III and IV.

181. U.N. Chair's non-paper on elements of a draft text 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, at 23–24 (Feb. 28, 2017), https://www.un.org/depts/los/biodiversity/prepcom_files/Chair_non_paper.pdf [https://perma.cc/F7V6-3X4C].

182. *See id*. at 6, 24.

submission of Mexico says that FOHS and CHM "are complementary and harmonious."[183] Explaining exactly how they are so, the Mexican proposal stresses that the MGRs "will be a common heritage of mankind whilst they will be regulated under a *benefit-sharing* approach that *adequately incentivizes (sic)economic exploitation* by States (emphasis added)."[184] Such an argument is actually in line with the recent EU position, namely, that the term "areas beyond national jurisdiction" should mean in the new treaty the high seas *and* the "Area".[185]

However, simply merging CHM and FOHS is extremely hazardous. If the future instrument "integrates" CHM and FOHS, any conservatory and posterity elements of the CHM would be impaired by monetary, property and similar economic considerations. Such an approach may especially affect the CHM element of preservation for posterity.

A combination of four other CHM elements (non-appropriation, common management, peaceful use, and development) with the economic considerations and exploitation could still be imagined. Examples of this combination in practice are fisheries; ISA contracts of exploitation of the seabed minerals; and the like. However, the preservation of the seabed for posterity is not exactly or exclusively about the adoption of conservational rules or fair benefit-sharing. Unlike all the other elements of the CHM principle, the posterity foundation is of a particular ethical and legal nature. Indeed, it chiefly serves to constrain the most entrepreneurial humans from handicapping the seabed biodiversity potential, which in the CHM paradigm is the potential for new generations of humans to come. Consequently, and most importantly, the CHM's element of posterity impairs a possibility to limit the mainstream anthropocentrists from handicapping the *actual* diversity of the deep seabed. It thus arguably weakens the potential for diversification for *future* generations of populations of the ocean.

In addition to avenues of combining FOHS and CHM in the agenda of PrepComs, roughly one-third of the sub-section "Scope" of the cluster on the sharing of benefits of the PrepComs is actually "Intellectual property rights", underlining various IP regimes, such as TRIPS and WIPO mandates, and multiple modes of patenting—hence, appropriating—biodiversity of ABNJs.[186]

Notably, in the PrepCom I, the applicable regimes, that is, CHM and FOHS, were still at the forefront of central concepts and definitions of a more significant cluster called "Marine genetic resources, including questions on the sharing of benefits." However, the two regimes have disappeared altogether from main

183. *See* UN, Scope, parameters and feasibility of an international instrument under the United Nations Convention on the Law of the Sea: Informal working document compiling the views of Member States, prepared in accordance with G.A. Res., 68/70, paragraph 201, at 15 (Dec. 4, 2014), http://cpps.dyndns.info/cpps-docs-web/circulares/2015/003.Circular%20003-2015_Videoconferencia%20del%20GT-CPPS-B-RGM.pdf [https://perma.cc/8GMV-2PTS].

184. *Id.* at 18.

185. *See* Non-paper, *supra* note 181, at 5.

186. PrepCom I, *supra* note 121, at 9.

concepts and definitions of the same cluster in the document of the next PreCom's session—'PrepCom II – Suggestions'. Generally, the PrepCom I still mentions CHM several times, although, most of the time, it is mentioned with its odd 'pair' in this agenda—FOHS.[187] However, the 'PrepCom II – Suggestions' refers to CHM only once. Namely, the principle is mentioned in the section 'Questions on the sharing of benefits' of the same cluster on MGRs and benefit-sharing, in the form of the following question: "[h]ow might a hybrid/sui generis approach based on both the freedom of the high seas and the common heritage of mankind work?"[188] As said, it is the only time CHM appears.

These details on the number of times, order, context and the way the PrepComs deploy CHM are essential. The conceptual and ideational lines of the proposals of the PrepCom II Chair seem to suggest that most of the tensions between CHM and FOHs have been resolved and agreed within five months between April and August 2016 by the 101 current State parties to the preparatory process.[189] However, as outlined in different sections of the Article, the doctrinal and diplomatic debates over the uneasy relationship between these two principles, as well as the modalities of their application, began in the nineteenth century, intensified in the 1980s and were still not set by 2016. It is thus improbable that they could all be miraculously fixed in 2022, or after the expected finalization of the draft text of the treaty in the near future.

The way the prospective treaty's agenda presents the questions related to CHM and FOHS demonstrates that it is simply *assumed* in the mainstream opinion of the UNCLOS negotiating parties that FOHS and CHM could apply together as "a hybrid/sui generis approach."[190] The grounds for such an assumption are questionable. It is difficult to find sound legal reasons and workings, either doctrinal or purely practical, as to why and how these two regimes could be combined and integrated into the future agreement, especially regarding the deep seabed. I submit that both conceptually (regarding the difference between FOHS and CHM as two distinct legal concepts, and indeed, jurisdictional principles) and practically (the water column of ABNJs, or the high seas, being distinct from the "Area") these two legal regimes are different and generally incompatible.

Starting from the PrepCom II of late 2016, the Chair "suggested" to negotiators an already assumed compatibility of the two regimes, thus "resolving"—or, in fact, merely denying—most of discussed differences and controversies between FOHS and CHM. Whereas legal grounds for the above assumption seem to be

187. *Id*. at 5, 6, 7, 13.

188. PrepCom II – Chair Suggestions, *supra* note 174, at 2.

189. For the full list of current participants to negotiations, see Division for Ocean Affairs and the Law of the Sea, *supra* note 86.

190. PrepCom II – Chair Suggestions, *supra* note 174, at 2. Also, in the Chair's overview of the PrepCom II, the rubric "[p]ossible issues requiring further discussions" asks "[w]hether the common heritage of mankind and the freedom of the high seas are mutually exclusive or could apply concurrently in an international instrument." PrepCom II – Chair Overview, *supra* note 164, at 4.

questionable, some political reasons with an economic rationale are quite apparent. Specifically, it is likely that the Chair and the delegates simply try to "pragmatically" satisfy the countries-proponents of both CHM and FOHS, thus getting closer to a diplomatic consensus. Indeed, in the latest UNCLOS program of intersessional work dated of 14 January 2021 and laying the groundwork for the fourth negotiation session from 16 to 27 August 2021—now, postponed till 2022—aside the general work streams of introduction, bilateral consultation, and linkages across streams, the four substantive work streams address, respectively, (i) environmental impact assessment (EIA); (ii) MGRs-related issues such as modalities for access to benefits and benefit sharing; (iii) area-based management tools; and (iv) modalities for capacity-building and the transfer of marine technology.[191] Therefore, it seems that the parties aim at concluding an agreement that, in its core points, will be, at worst, about the distribution of ownership over and benefits from marine genetic resources; and, at best, about collective economic exploitation of those resources and sharing of *economic* benefits from such exploitation. The questions of upholding and preserving the biodiversity of marine ABNJs appear to be few and merely peripheral.

Notably, the queries and efforts relating to sustainable use and conservation of natural resources—in our case, marine genetic resources—and of biodiversity, may have a very different rationale, scope, and results. At the same time, the two categories may relate to the efforts to be environmentally responsible. However, while the biodiversity narrative is an invitation to re-assess and re-think fundamental values and preferences that humans attribute to biodiversity, nature, living beings, and themselves,[192] the resources narrative offers a sustainable means to obtain something that humans already value and prefer in the Global North and South alike—natural resources.[193] Within the latter narrative, the problems with handling fires in Australia in late 2019 to early 2020, for example, reveal a particular difficulty of the Australian government to fully grasp the link between those catastrophic fires and climate change. The trouble may somehow draw on the national institutionalized extractivism (Australian collective unconscious?) based on Australian extractive legacy, the latter compelling to see nature essentially as a resource to explore, extract, and exploit.

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191. *See 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: Programme of intersessional work*, UNITED NATIONS (Jan. 14, 2021), https://www.un.org/bbnj/sites/www.un.org.bbnj/files/bbnj_intersessional_programmeofwork_210315.pdf [https://perma.cc/XC9S-DQEL]; G.A. Draft Dec., U.N. Doc. A/75/L.96 (June 9, 2021); *Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction*, UNITED NATIONS, https://www.un.org/bbnj/ [https://perma.cc/UHH2-3WHN] (last visited Oct. 17, 2021).

192. *See generally* MARIS, *supra* note 42.

193. *See* Kolers, *supra* note 72, at 271–72.

A midway avenue between the biodiversity narrative and the resource-driven one could be the view of biodiversity as a resource. However, control of a natural resource should then itself be a resource that is not extracted but leveraged.[194]

In sum, the protection and conservation of biodiversity per se does not seem to be meaningfully addressed in either the agenda of the negotiations of the new UNCLOS agreement bearing those identities in its title or the key existing international legal instruments. Conversely, those arrangements suggest that tying any possibility of biodiversity protection and conservation to the biodiversity's commercial value and benefits may merely justify its conservation by monetary and broader economic valuation and exploitation. Furthermore, if CHM is replaced with, or "complemented" by, the rules on patents and intellectual property, the FOHS principle, the ecosystem approach,[195] etc., the expected benefits will not be equally distributed. Indeed, the most essential parts of them will be shared between the usual suspects—that is, those who have the best technological and monetary capacities to go to the deep seabed. Finally, if CHM is supplanted by the above property and sovereignty regimes, the hypothetical contribution of the CHM's posterity element to basic conservation of common areas for future generations of humans will be missed by the prospective instrument.

V. LOOKING BEYOND THE BIFOCAL "HUMANS—NATURE" VISION

As it follows from the preceding analysis of this Article, today, relevant ideas of *the just* within the discussed distributive models, both existing and those of the future global treaty argue for a fairer commodification of nature by humans. They, however, explicitly avoid any contestation of such commodification per se.[196] The ongoing UNCLOS negotiations thus seem to only further legitimize the commodification and a potential appropriation of marine biodiversity, as it is supported since 2016 by various surveyed works of PrepComs, as well as Resolution 69/292 itself.[197] For example, through the idiom of biotechnology, these texts and the agenda of the talks simply further legitimize economic exploitation, ownership, and intellectual property applied to the biodiversity of marine ABNJs.[198]

194. *See Id*. at 272.

195. The latter is for example proposed as a general principle of the future instrument as per the latest treaty draft. 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, U.N. Doc. A/CONF.232/2020/3, Article 5 (Nov. 18, 2019), https://undocs.org/pdf?symbol=en/a/conf.232/2020/3 [https://perma.cc/WWH6-HYJU].

196. It suffices to look at the current UNCLOS governance of the seabed metals and the related ISA activity.

197. *See* discussion *supra* Sections IV.A, IV.B.

198. *See id.*

The future instrument is set to ultimately combine the rationale of biotechnology with that of biodiversity. But how it could distribute the risks, costs, and gains in a just, transparent, and equitable manner?

Anthropologist Veronica Strang offers a helpful concept of relational justice. She supports the right of (at least some) non-human living beings to distributive justice as a means of correcting power imbalances between humans and non-humans.[199] Ultimately, however, that may sound too idealistic for the prospective global regime, given various elements of its agenda discussed in the previous section.

Avery Kolers's intentional theory of resources is based on a mix of a territorial rights theory and a resource distribution theory.[200] The latter seeks to define benefits that actors could gain from resource exploitation and the share of resources they should manage.[201] However, the fundamental question preceding all others in this theory is "who says that something is a resource in the first place?"[202] This conception of resources sees them "as intentional kinds rather than natural kinds"; specifically, resources are identified after determining who holds the right "to adopt a particular attitude toward the natural world" relevant to the specific geo-space.[203] A moral theory of territorial rights allocates such rights to individual claimants: "[a] resource is such when the morally legitimate territorial rightholder treats it as a fungible means."[204] Hence, the basis of a geo-space's allocation to specified claimants is a "normatively significant sort of attachment linking groups to particular places."[205] Based on this reasoning, it is likely that no human could claim any specific attachment, including property rights, to the genetic resources of the deep seabed. However, the forms of life of those areas, meaning the marine biodiversity, could, in theory, be the legitimate territorial rights-holders.[206]

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199. *See* Veronica Strang, *Justice for All: Inconvenient Truths and Reconciliation in Human-Nonhuman Relations, in* ROUTLEDGE HANDBOOK OF ENVIRONMENTAL ANTHROPOLOGY 259, 260 (Helen Kopnina & Eleanor Shoreman-Ouimet eds., 2017).

200. *See* Kolers, *supra* note 72, at 270, 277. Kolers explains aspects of this theory as follows:

> *Land* is a natural kind, while *resources* are an intentional kind; so land can be a resource only under a description. Putting it this way allows us to recast our question: whose description should prevail in any given place? The answer is: whoever has a morally legitimate territorial right to that place.

Id. at 279.

201. *See id*. at 277.

202. *See id*.

203. *See id*. at 269, 277.

204. *See id*.

205. *Id*. at 277.

206. Some other justice concepts and initiatives, like non-human rights and ecocide, would support this notion. *See* Nonhuman Rights Project, https://www.nonhumanrights.org/ [https://perma.cc/2K5M-VTWD] (last visited Sept. 4, 2021); Polly Higgins, http://pollyhiggins.com [https://perma.cc/V8H8-755K] (last visited Sept. 2, 2021). *See generally* Contributions to Law, Philosophy and Ecology: Exploring Re-Embodiments (Ruth Thomas-Pellicer, et al. eds., 2016).

To be protected and conserved, the deep seabed, and marine biodiversity beyond national jurisdictions ("BBNJ"), also need representation. Legal standing for these entities should be required in the UNCLOS and elsewhere. Margherita Pieraccini put forward a concept of socio-ecological pluralism, which ascribes "legal performativity to the multiple complex agency of humans and non-humans" alike.[207] Under her concept, the law is co-produced through socio-ecological "encounters."[208] In a similar vein, Bruno Latour introduced the idea of an imaginary collectivity, whose members would be the "people of Gaia."[209] Latour's "people" does not mean humans but *demos*—all those who belong to Gaia; Gaia, in turn, represents *theos* out of which we are all born, while *nomos*—distribution or cosmos—discerns the principles through which the agencies of such demos are distributed; an ultimate aim is a peace agreement among this unified demos.[210] In this nomos of Gaia, "humans" give place to "Gaians," or "Earthbound," sharing the action, knowledge and anxieties with a set of non-humans.[211] Humans, as the "Earthbound", could thus probably represent biodiversity, both in law-making and in various democratic deliberative fora and standings. As previously said, a broader justice, brings all forms of life, including biodiversity, to the realm of justice.[212] This kind of "Gaian" justice is the one between all forms of life at all levels of its organization.

In March 2017, two ground-breaking domestic decisions empirically supported these theoretical models. First, the New Zealand Parliament enacted a law recognizing the Whanganui River as a living entity with full legal rights.[213] Notably, the law puts in place an office "to be the human face of Te Awa Tupua," which is

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207. Ruth Thomas-Pellicer & Vito De Lucia, *Introduction: Exploring re-embodiments*, *in* CONTRIBUTIONS TO LAW, PHILOSOPHY AND ECOLOGY: EXPLORING RE-EMBODIMENTS 1, 17 (Ruth Thomas-Pellicer, et al. eds., 2016).

208. Margherita Pieraccini, *Beyond Legal Facts and Discourses: Towards a Socio-Ecological Production of the Legal* , *in* CONTRIBUTIONS TO LAW, PHILOSOPHY AND ECOLOGY: EXPLORING RE-EMBODIMENTS 227, 240 (Ruth Thomas-Pellicer, et al. eds., 2016).

209. The five Latour's Gifford Lectures given at the University of Edinburgh mediate on a political theology of nature by connecting three fields: science (understood as practice), religion (freed from political epistemology), and the most relevant for this paper, politics extended to *non-humans*. *See* Bruno Latour, *Facing Gaia: A New Enquiry Into Natural Religion,* The Gilfford Lectures: Over 100 Years of Lectures on Natural Theology (last visited Sep. 2, 2021), https://www.giffordlectures.org/lectures/facing-gaia-new-enquiry-natural-religion [https://perma.cc/ZUQ6-GYRJ]; *see, e.g.*, The University of Edinburgh, *Prof. Bruno Latour – 'Once Out of Nature' – Natural Religion as a Pleonasm*, YouTube, at 14:09, (Feb. 23, 2013), https://www.youtube.com/watch?v=MC3E6vdQEzk [https://perma.cc/RKU6-YSKQ].

210. *See generally* The University of Edinburgh, *Prof. Bruno Latour - The Anthropocene and the Destruction of the Image of the Globe,* YouTube (Mar. 1, 2013), https://www.youtube.com/watch?v=4-l6FQN4P1c [https://perma.cc/Q2DV-YJMG].

211. *See generally* The University of Edinburgh, *Prof. Bruno Latour - War of the Worlds: Humans against Earthbound,* YouTube (Mar. 4, 2013), https://www.youtube.com/watch?v=gsZCS5Zicx4 [https://perma.cc/J8S9-ABTP].

212. *See supra* Section III.A–B of this Article

213. For the law project, see Te Awa Tupua (Whanganui River Claims Settlement) Bill 2016 (129—2) (N.Z.). For litigation and claims overview, see *Whanganui Iwi (Whanganui River) Deed of Settlement*

the river and surrounding landscape, "and act in the name of Te Awa Tupua," and lists various functions, such as providing general representation of and standing for Te Awa Tupua in court proceedings.[214]

Second, the Uttaranchal High Court in Uttarakhand, India decided that the Ganges and Yamuna rivers should be accorded the status of living humans.[215] In other words, any harm to them, including pollution, would be legally equivalent to harming a human. This judgment was later overturned by the Supreme Court of India.[216]

There has also been recent litigation regarding this same idea in Colombia. In its opinion on April 5, 2018, the Supreme Court of Colombia (the "SCC") decided that the Colombian Amazon ecosystem holds constitutional rights to protection that the government must uphold.[217] To assure those rights, the SCC ruled the President, relevant ministries, and administrative agencies must make plans to stop climate-changing deforestation.[218] This case has been followed by the *Coello, Combeima, and Cocora Rivers* decision, as well as the Cauca River rights.[219]

These three above examples suggest that marine BBNJ might, in the future, have its *locus standi* through representation. This might put the prospective UNCLOS instrument defending the exploration and exploitation of the Area on quite a precarious perch since polluting, including through bioprospecting, hydrothermal vents of the deep seabed, where forms of life with valuable genes live, could amount to a legal offense.

Coming back to the talks at the UNCLOS, it appears that the anthropocentric system of values, institutions, and practices, however sustainable and environmentally-

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Summary, New Zealand Government (Nov. 17, 2020) https://www.govt.nz/treaty-settlement-documents/whanganui-iwi/whanganui-iwi-whanganui-river-deed-of-settlement-summary-5-aug-2014.

214. *See* Te Awa Tupua (Whanganui River Claims Settlement) Bill 2016 (129—2), clauses 12, 18 (1)–(2), 19 (N.Z.). The "human face of Te Awa Tupua" is two people, one nominated by a government minister and one nominated by Iwi peoples. *See id.* at clauses 18(2), 20(1)–(4).

215. *India Court Gives Sacred Ganges and Yamuna Rivers Human Status,* The BBC (Mar. 21, 2017), http://www.bbc.com/news/world-asia-india-39336284 [https://perma.cc/HF9V-GFGV].

216. *SC Stays Uttarakhand and HC Order on Ganga, Yamuna Living Entity Status,* The Indian Express (July 8, 2017), https://indianexpress.com/article/india/sc-stays-uttarakhand-hc-order-on-ganga-yamuna-living-entity-status-4740884/ [https://perma.cc/QC4L-9HJ4].

217. *See* Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: Luis Armando Tolosa Villabona, 2018-00319-01, (p. 45) (Colom.) [hereinafter Amazon River Case]; Nicholas Bryner, *Colombian Supreme Court Recognizes Rights of the Amazon River Ecosystem*, INT'L UNION FOR CONSERVATION OF NATURE (Apr. 20, 2018), https://www.iucn.org/news/world-commission-environmental-law/201804/colombian-supreme-court-recognizes-rights-amazon-river-ecosystem [https://perma.cc/FA8H-ZGVA].

218. *See* Amazon River Case, *supra* note 217, at 45–46; Bryner, *supra* note 217.

219. *See* Héctor Herrera-Santoyo, *The Rights Of Nature (Rivers) And Constitutional Actions In Colombia*, THE GLOBAL NETWORK FOR HUMAN RIGHTS AND THE ENVIRONMENT (Jul. 8, 2019), https://gnhre.org/2019/07/08/the-rights-of-nature-rivers-and-constitutional-actions-in-colombia/#ftn1 [https://perma.cc/E3ZZ-LJ7R].

friendly it is or becomes, cannot overcome its *structural* problem.[220] The system is built on a bifocal vision that sees nature as a set of resources, and ultimately exhausts those resources, which affects the biodiversity of our planet.

In the global business-as-usual scenario, the Global North seeks to expand the industrial, commercial and technological frontiers indefinitely. The Global South, in turn, tries to catch up industrially, commercially and technologically, while simultaneously (re)asserting their sovereignty and equitable North-South considerations. Consequently, the claims of ownership, intellectual property rights, and FOHS are concurring with CHM in the Area.

To overcome these scenarios, all people of Gaia should unite efforts in an extremely challenging enterprise: to live in harmony as the Earthbound demos in keeping Earth, from its cities to its untouched deep seabed, welcoming and exciting for any form of life. Biodiversity would be one essential note in a symphony of landscapes and living-places. Such an approach would look beyond a fair distribution, and see justice also as non-domination.

CONCLUSION

The 2020 outbreak of COVID-19 paralyzed many international law projects and negotiations, which offered international lawyers an opportunity to thoroughly re-think them. Regarding the project of conservation of global marine biodiversity, current marine biotechnology clashes with that of marine biodiversity, and relevant international law has been tailored to support and expand biotechnology at the expense of biodiversity.[221] Indeed, most of the international legal instruments that have been analyzed throughout this Article relate to exploration and/or exploitation, including appropriation, commodification, and commercialization of marine biodiversity. As a result, the paradigm of marine biological *resources* is opposed to that of marine biological *diversity*. This opposition is not only about an 'either-or' between sovereign state entitlements and the ocean commons, as the relevant instruments, as well as some commentators, suggest.[222] In addition to questions of sovereign ownership, the flipside is the opposition 'commercial and industrial interests and property vs. nature and biodiversity.'

Prevailing doctrinal and political narratives as well as the course for the action of the UNCLOS implementing agreement seem to assert that the "magic" solution is about to be found. Operating within the rubric of the so-called environmental pragmatism, from now on, humanity can conserve the deep seabed

220. *See supra* Part IV.

221. Except, potentially, the CBD. Ultimately, the CBD is also about *sustainable* use of biodiversity, it may therefore lead to sustainable biotechnology, given that, generally in international law, the notion of conservation includes "rational use." The main problem of the CBD remains: regarding MGRs, its jurisdictional and spatial scopes are incompatible, thus not covering these resources in ABNJs.

222. *See, e.g.*, Francesco Francioni, *Foreword* to MORGERA ET AL., UNRAVELING THE NAGOYA PROTOCOL, *supra* note 98, at xiii. In a different vein, regarding the UNCLOS consultations before 24 December 2017, see Tladi, *Pragmatism and Sustainability*, *supra* note 16, at 13.

biodiversity while progressing in the deep seabed biotechnology. This "magic" solution arguably allows the benefits arising from such a "double benign" activity to be shared in the fairest manner possible. Moreover, both the equity in benefit-sharing and the very protection and conservation of biodiversity in those areas seem to be positively and proportionally correlated to the progress in biotechnology and subsequent patenting.

As demonstrated in this analysis, however, the hypothesis that the projects of sovereignty and property, on the one hand, and biodiversity, on the other, could be easily combined is not only untenable but also potentially dangerous. Furthermore, I submit that a mere assumption that the deep seabed should be exploited or appropriated is problematic. Finally, scientific progress, namely pharmaceutical innovation, including life-saving drugs, were hardly lacking before the advent of intellectual property rights.

In terms of justice, the prospective UNCLOS instrument seems to fail on both human and nature-related fronts and is not likely to satisfy either environmentalists or ecologists. Specifically, in terms of a pan-anthropic environmental justice for *all* humans, as defined in this Article (that is, a model of justice that departs from the mainstream anthropocentrism which focuses only on the 'chosen' humans), the future agreement fails because of several considerations. For example, both intra- and inter-generational justice between different social groups as well as present and future generations of humans, a fair distribution of relevant risks and benefits between countries of the Global North and South, and the preservation of some areas for posterity will not be guaranteed by the future instrument. This is because the regime of CHM is neutralized in the future treaty by the projects of intellectual property, economic valuation of biodiversity, freedom, and sovereignty.

Even if the UNCLOS instrument on ABNJs would be adopted shortly and even if it would give CHM a more critical place, CHM has its own essential flaws, demonstrated in this Article. International lawyers should thus think and go one step further. I submit that we should approach the issue in terms of a broader justice, which brings all other forms of life into the realm of justice. In particular, we as international lawyers and the Earthbound, have to ask whether there is any limit beyond which commodifying, and then distributing nature and biodiversity should stop.

Regarding the subject matter of this Article, virtually all considerations of the future UNCLOS agreement revolve not around the conservation of biodiversity per se, but around sustainable use and conservation of a particular type of natural resources. In that regard, we as humans could still see biodiversity as a resource, but *having* this natural resource should then itself also be a resource that is being used not by exploiting but by *conserving* and *leveraging* it. Yet, such considerations provide us only with the optimal means to obtain what we already value and prefer and would still not make us re-assess and re-think the values and preferences that we attribute to biodiversity, nature, living beings, and ourselves.

Lastly, a more ambitious perspective proposed in this Article sees a broader justice for Earth not only as fair distribution, but also, and especially, as non-domination. More concretely, I suggest that mainstream international law caters to the expansion of deep seabed biotechnology at the expense of its biodiversity. Furthermore, in contemporary international law, the project "sovereign ownership-private property" currently seems to dominate biodiversity, the commons, nature, and, in fact, law itself.

As a theory and policy update, international lawyers should seek to develop a pluralistic vision of, and approaches to, various available ownership types. This means looking at how to depart from, or at least complement, private property and sovereign ownership with management by traditional groups and societies, such as indigenous approaches to nature and environmental law; through the "limited" commons; to maybe purely unregulated commons. To leave the pattern of conquerors seeing nature through the prism of its resources, we should shift to a humbler paradigm of both "locals" and citizens of Earth. This means that we should be preoccupied with the question of how to roll back the project "sovereign ownership-private property" and hence, the frontiers of the Anthropocene.