

## Comments on the revised draft text of an agreement under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction

Deep-Ocean Stewardship Initiative, 20 February 2020

The Deep-Ocean Stewardship Initiative (DOSI) congratulates the President on the [revised draft text](#) of an agreement under the United Nations Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ agreement) (A/CONF.232/2020/3). DOSI welcomes this opportunity to provide comments on some scientific and technical aspects of the text.

### Preamble

#### → **Interconnectivity and importance of biodiversity beyond national jurisdiction**

The draft text does not currently acknowledge the importance of BBNJ, the value of biodiversity or its components such as genetic resources, or the interconnections between BBNJ and coastal and atmospheric processes. The ocean is dynamic and interconnected, from the surface to the seafloor and from the coasts to the high seas. Timescales governing relevant ecosystems vary for each environment. Ecological connectivity, whether through carbon and energy flow or species' dispersal and migration, plays a critical role in maintaining healthy ocean functions ([DOSI, 2020](#)). Biodiversity beyond national jurisdiction provides a suite of functions that maintain ecosystem integrity and benefit humans in myriad ways, including: carbon sequestration and storage, nutrient recycling, food provision, scientific inspiration, and cultural significance (DOSI 2019a; Hoagland et al., 2019; Rogers et al., 2014). The Preamble of the BBNJ agreement could make reference to the broad importance of biodiversity beyond national jurisdiction and the environmental, economic, cultural, social, and scientific value of biodiversity and genetic and biological resources of ABNJ.

### Part I: General Provisions

#### **Article 1, Use of Terms**

##### → **Definitions of “marine genetic material” and “marine genetic resources” are open to interpretation**

The draft text currently includes definitions of “marine genetic material” and “marine genetic resources”:

*[8. “Marine genetic material” means any material of marine plant, animal, microbial or other origin containing functional units of heredity]*

*[9.Alt. 1. “Marine genetic resources” means any material of marine plant, animal, microbial or other origin, [found in or] originating from areas beyond national jurisdiction and containing functional units of heredity with actual or potential value of their genetic and biochemical properties.]*

*[9.Alt. 2. “Marine genetic resources” means marine genetic material of actual or potential value.]*

Ensuring that such definitions align with those under the Convention on Biological Diversity and the Nagoya Protocol has merit. However, as noted in the DOSI commentary on the first draft text of the

BBNJ agreement, these definitions are open to interpretation. Specifically, ‘functional units of heredity’, and ‘genetic and biochemical properties’ are ambiguous and require scientific clarity.

Clarity on the meaning of “value” would help interpret the definition of marine genetic resources as per article 1 [9]. The value of marine genetic resources could be seen as scientific, educational, ecological, environmental, and cultural (DOSI 2019b). The meaning of “actual or potential value” is ambiguous, in the absence of any other reference to value in the text. For example, the Forest Genetic Resources Plan (FAO, 2014) broadly defines genetic resources as genetic material of “actual or potential economic, environmental, scientific or societal value”. Similarly, the BBNJ agreement could make reference to the multiple dimensions of value.

→ **Definitions of “marine technology” and “transfer of marine technology” may be too limited**

The draft text currently includes the following definition of marine technology:

*[11. “Marine technology” means information and data, provided in a user-friendly format, on marine sciences and related marine operations and services; manuals, guidelines, criteria, standards, reference materials; sampling and methodology equipment; observation facilities and equipment (e.g., remote sensing equipment, buoys, tide gauges, shipboard and other means of ocean observation); equipment for in situ and laboratory observations, analysis and experimentation; computer and computer software, including models and modelling techniques; and expertise, knowledge, skills, technical, scientific and legal know-how and analytical methods related to marine scientific research and observation.]*

This definition reflects the 2005 IOC Criteria and Guidelines on the Transfer of Marine Technology and encompasses a broad range of equipment, knowledge, and information for marine scientific research. All of these forms of technology will be important for building capacity for the conservation and sustainable use of BBNJ. However, this definition does not appear to cover all forms of technology relevant to the conservation and sustainable use of BBNJ. For example, monitoring, control, and surveillance technologies could offer crucial tools for implementing the BBNJ agreement; some practitioners may not consider these tools as marine scientific research, thus placing them outside the scope of the present definition of marine technology. Other examples that may fall outside of the scope as currently defined include environmentally-sound technologies for sustainable use of BBNJ such as those for the conduct of environmental impact assessments, manage human activities involved with the acquisition or utilisation of marine resources or decision-making support tools for spatial conservation planning.

To “future-proof” this definition and avoid the need for an exhaustive list in the face of rapidly advancing techniques, the designation of appropriate technology could be a duty of the Scientific and Technical Body. However, if a list is incorporated into the text, we urge the inclusion of the following categories of useful tools / technologies: research submersibles, remotely operated and autonomous vehicles, camera sleds, seafloor samplers, equipment for in situ and laboratory observations, analysis and experimentation (including field-based genetic isolation, amplification, sequencing, and imaging technologies).

→ The draft text currently includes the following definition of ‘transfer of marine technology’:

*[14. “Transfer of marine technology” means the transfer of the instruments, equipment, vessels, processes and methodologies required to produce and use knowledge to improve the study and understanding of the nature and resources of the ocean.]*

The current definition includes some, but not all, forms of technology referred to in the draft definition of technology at paragraph [11]. In particular, it excludes skills, expertise, or information. Consideration could be given to broadening the definition to include these additional elements. Furthermore, the reference to the transfer of technologies “required to produce and use knowledge to improve the study and understanding of the nature and resources of the ocean” may be overly restrictive because: (i) technologically-limited states might not produce knowledge but would make use of knowledge produced by others, and (ii) the conservation and sustainable use of biodiversity may require more than improved study and understanding of the nature and resources of the ocean - but rather more proactive measures to monitor human activities, such as for the implementation of area-based management tools. In order to capture the full range of technologies potentially needed to enable the conservation and sustainable use of BBNJ, this definition could be expanded, e.g:

*“Transfer of marine technology” means the transfer of the instruments, equipment, vessels, processes and methodologies required to produce **and/or use** knowledge to improve the study and understanding of the nature and resources of the ocean **and enable the conservation and sustainable use of biodiversity beyond national jurisdiction.***

#### → **Strategic environmental assessment**

Strategic environmental assessments are an important tool for planning and could usefully advance scientific research and technology transfer. For this reason, paragraph [13] represents an important part of the draft BBNJ agreement, as does the reference to Strategic environmental assessments in Article 28.

#### → **Marine protected area**

The draft text currently provides the following draft definition of Marine Protected Area:

*10. “Marine protected area” means a geographically defined marine area that is designated and managed to achieve specific [long-term biodiversity] conservation and sustainable use objectives [and that affords higher protection than the surrounding areas].*

The text in square brackets would facilitate the conservation and sustainable use goals put forth elsewhere in the draft text. Marine protected can address a range of objectives (Day et al., 2012), however, fully protected marine reserves are demonstrably best for conserving biological diversity, as they protect communities and the ecological processes that sustain them from direct and indirect forms of human disturbance (Sala et al. 2018). Given the importance of connectivity in marine systems (DOSI, 2020), allowing for networks of protected areas that consider geographically distributed and/or shifting habitats and species distributions would be helpful in achieving a range of “conservation and sustainable use objectives.”

#### **Article 2, General objective**

##### → **‘Long-term’ conservation and sustainable use**

Much of the life in the deep-sea is slow-growing and long-lived (e.g. some corals can live up to thousands of years); the physical and chemical processes that support these ecosystems take place over similarly long periods. Conservation and sustainable use measures for BBNJ should include the provision of a

“long-term” vantage, recognizing the extended timescales required for deep-sea environments to recover from disturbance.

### **Article 3, Application**

#### **→ Clarify implications for publicly-funded marine scientific research**

*2. This Agreement does not apply to any warship, naval auxiliary, other vessels or aircraft owned or operated by a State and used, for the time being, only on government non-commercial service...*

A substantial proportion of fundamental research into biodiversity beyond national jurisdiction, including the properties of marine genetic resources, initially takes place on State-owned or -operated research vessels on non-commercial service (Oldham et al., 2014). Measures should be taken to ensure that this provision does not have unintended consequences, missing opportunities to strengthen scientific best-practice by incorporating information about marine scientific research and resulting data into regional and global repositories and reference collections that play important roles in sharing benefits from marine genetic resources. International scientific cooperation and benefit-sharing would improve if all research-based activity on the high seas - State-enabled or otherwise - adhered to provisions of this agreement especially in relation to information sharing (Rabone et al., 2019) that include LDC, SIDS, and developing countries institutions.

## Part II

### Marine Genetic Resources, including questions on the sharing of benefits

#### **Article 7, Objectives**

The draft text refers to four objectives [a], [b], [c], [d], all currently in square brackets, that can be broadly summarised as follows: (a) Promote benefit sharing; (b) Build capacity; (c) Promote generation of knowledge and technology including marine scientific research; and (d) Promote development and transfer of technology and capacity. All of these objectives are consistent with scientific best practice relating to BBNJ (Rabone et al., 2019) and could usefully contribute to the conservation and sustainable use of BBNJ, such as by advancing scientific understanding of marine genomics and access to such knowledge. In this context, these factors are relevant and appropriate objectives that should be included in the text.

#### **Article 10, ‘Collection’ / ‘access’**

##### **→ *Pre-cruise notification***

Prior notification would be broadly consistent with scientific best practice (Rabone et al., 2019), thereby avoiding unnecessary hindrances to scientific research activities while delivering transparency. Much of this information is already made publicly available on national Research Vessel Planning websites - a clearinghouse could make such information more easily discoverable and streamline international best practice approaches. However, a permit or license scheme, especially for *in situ* collection of samples for marine genetic resources, would require resources and an institutional mechanism to review proposals and make decisions. There are concerns that this could be overly restrictive and cause delays.

##### **→ *Post-cruise notification (In situ collection of or access to MGR)***

*[2. States Parties shall take the necessary legislative, administrative or policy measures, as appropriate, to ensure that in situ [collection of] [access to] marine genetic resources within the scope of this Part shall be subject to: (a) An indication of the geographical coordinates of the location where marine genetic resources were [collected] [accessed];*

After sample collection, it would be useful to include more than just geographical coordinates in the reporting platform. Metadata such as depth, temperature, sampling equipment, time, and date would all enhance the inter-operability of data sets. The precise parameters to be reported should be regularly updated in accordance with evolving standards and practices and could be set by the Scientific and Technical Body.

→ **‘Collection’ and ‘access’**

Here and at several points throughout the text, the option of ‘collection’ or ‘access’ is presented. Both of these terms should be defined in order to clarify their intended meaning and enable informed decision-making - currently the term “collection” is not defined. One interpretation is that collection means ‘in situ’ access and physical recovery, such as collecting a sample containing marine genetic material from the high seas. However, without collection, there can be no other forms of access. A further possible point of confusion is that “collection” also means repository of samples (e.g. a museum collection, scientific reference collection).

#### **Article 11, ‘Sharing of benefits’**

*[(c) To build capacity to [collect] [access] and utilize marine genetic resources of areas beyond national jurisdiction [, including through common funding or pool funding for research cruises and collaboration in sample collection and data access where adjacent coastal States [shall] [may] be invited to participate, taking into account the varying economic circumstances of States that wish to participate];]*

Research cruises are essential aspects of the discovery, investigation, and monitoring of marine genetic resources and the broader systems they impact. The development of a mechanism to facilitate collaborative scientific research cruises that specifically incorporates the interests and needs of developing States, including adjacent coastal States would support the agreement’s capacity building goals. Clarifying that these research cruises are “scientific research cruises” would be a useful addition to signal the intent of fundamental research rather than commercially motivated activities.

### Part III Measures such as area-based management tools, including marine protected areas

#### **Article 14, Objectives**

→ **Rehabilitation and restoration**

The current draft text refers to:

*[(fe) Rehabilitating and restoring biodiversity and ecosystems, including with a view to enhancing their productivity and health and building resilience to stressors, including those related to climate change, ocean acidification and marine pollution;]*

It would be important to clarify what is meant by the terms ‘rehabilitation’ and ‘restoration’ in the context of the BBNJ agreement and to ensure that these take into account the specificity of deep and open ocean ecosystems in ABNJ. Any rehabilitation or restoration activities pertinent to ABNJ should be mindful of the immense time and spatial scales associated with these domains. Objectives surrounding such activities and their assessment should be designed accordingly.

→ **Baseline research**

*[(g) Creating scientific reference areas for baseline research;]*

Baseline data on ecosystem structure and health are essential when assessing the effects of human activities and global environmental change. This provision is therefore highly relevant, and could also include ‘long-term monitoring’ to more easily assess environmental change and inform conservation needs.

**Article 17, Proposals**

*[2. States Parties may collaborate with relevant stakeholders in the development of proposals.]*

This option would be useful for providing the opportunity for non-state actors to contribute expertise to the development of proposals and promote the best-available scientific input.

*(d) A description of the state of the marine environment and biodiversity in the identified area;*

In some cases, the state of the marine environment and biodiversity therein may be unknown, or subject to knowledge gaps. A slight modification to the text could allow for this uncertainty to be acknowledged and valued, e.g. "and the extent to which it is understood as well as identified gaps in knowledge that may prove pivotal in delineating the area and measure".

*[(g) A duration for the proposed area and measures;]*

Processes in the deep and open ocean operate over extended time frames that are often incommensurate with decade-scale assessment approaches. Any duration or time limit associated with ABMT and MPAs should account for the characteristics of those ecosystems and be justified based on the best-available scientific information. An alternative option would be to make the default protection “in perpetuity” unless a good reason is given to do otherwise.

Time is not the only variable to consider in the application and assessment of MPAs: spatial shifts in ecological parameters warranting protection should also be provided for through the application of mobile protected areas (Maxwell et al., 2020).

**Article 21, Monitoring and review**

*3. The review referred to in paragraph 2 shall assess the effectiveness of measures and the progress made in achieving their objectives and provide advice and recommendations to the Conference of the Parties.*

The effectiveness of measures can only be assessed against clearly articulated conservation goals, well defined conservation objectives, and targets that are based on these objectives. A monitoring plan will be

essential in deciding whether the conservation objectives are achieved and will feed into the review. The time frame for this monitoring plan should be based on the best available science related to the lifespans of the target organisms and other species that will be impacted by the activities. For example, if the target organism exclusively inhabits deep-sea coral reefs, then the appropriate monitoring program will be on the scale of decades. Should the monitoring plan indicate that the targets of the selected indicators are not met and consequently the conservation objectives will also not be met, a process can be triggered to review activities that may be posing a threat to BBNJ. Monitoring plans will need to be designed to take into account natural variability in the system, as well as long-term changes due to external stressors such as climate change. The use of long-term monitoring locations as reference sites, as well as control sites monitored repeatedly inside and outside MPAs are some of the approaches to consider. The research plan should address critical gaps in the knowledge on which the monitoring plan is based (such as the age and growth rates of the target species) or scientific hypotheses that need to be fulfilled (such as habitat use and fidelity).

## Part IV Environmental impact assessments

### **Article 25, Cumulative impacts**

The draft text refers to:

*[2. Alt. 1. Guidelines for assessing cumulative impacts in areas beyond national jurisdiction and how those impacts will be taken into account in the environmental impact assessment process for planned activities shall be developed by the Conference of the Parties.]*

*[2. Alt. 2. In determining cumulative impacts, the incremental effect of a planned activity under the jurisdiction or control of a State Party when added to the effects of past, present and reasonably foreseeable future activities shall be examined*

Alt. 1 and Alt. 2 are not alternatives that are mutually exclusive. In fact both are needed for the assessment of cumulative effects to be most effective.

### **Article 35, Preparation and content of environmental impact assessment reports**

*(e) A description [, where appropriate,] of reasonable alternatives to the planned activity under the jurisdiction or control of a State Party, including the no-action alternative;*

The inclusion of a no-action alternative is a useful component in the preparation of EIA reports. However, an assessment of the potential environmental impacts of this alternative should be performed.

### **Article 38, Decision-making**

*[2. No decision allowing the planned activity under the jurisdiction or control of a State Party to proceed shall be made where the environmental impact assessment indicates that the planned activity under the jurisdiction or control of a State Party would have severe adverse impacts on the environment.]*

“Severe adverse impacts” need to be defined, where “severe” needs to include consideration of the time scale for recovery and effects should be considered in the context of cumulative impacts including global ocean change.



## Part V: Capacity-building and Transfer of marine technology

### **Article 46**

*1. In support of the objectives set out in article 42, the types of capacity-building and transfer of marine technology may include, and are not limited to:*

- (a) The sharing of relevant data, information, knowledge and research;*
- (b) Information dissemination and awareness-raising, including with respect to relevant traditional knowledge of indigenous peoples and local communities;*
- (c) The development and strengthening of relevant infrastructure, including equipment;*
- (d) The development and strengthening of institutional capacity and national regulatory frameworks or mechanisms;*
- (e) The development and strengthening of human resources and technical expertise through exchanges, research collaboration, technical support, education and training and the transfer of technology;*
- (f) The development and sharing of manuals, guidelines and standards;*
- (g) The development of technical, scientific and research and development programmes, including biotechnological research activities.]*

All of the forms of capacity building and technology transfer listed above can both enable and be supported by international marine scientific research collaborations. Under (a), the sharing of data would preferably adhere to FAIR and open principles - findable, accessible, interoperable and reusable - the scope of “relevant data” could be determined by the scientific and technical body. CB / TMT provisions also present a compelling opportunity to build partnerships between industrial actors and noncommercial scientific research. Modifications to existing or planned infrastructure (e.g., adding sensors, hydrophones, etc.) would bolster research capabilities in far-reaching ways.

### **Article 47, Monitoring and review**

Monitoring and review will be critical to track progress, share best-practice approaches, and focus efforts. Improving information sharing about scientific research activities, for example, could build on existing processes and be beneficial to scientific research.

## Part VI Institutional arrangements

### **Article 49, Scientific and technical body**

*2. The Scientific and Technical Body shall be composed of experts, taking into account the need for multidisciplinary expertise [, including expertise in relevant traditional knowledge of indigenous peoples and local communities], gender balance and equitable geographical representation.*



Scientific and technical expertise is essential to the implementation of this agreement. To engage the most representative and effective group of experts, details on the terms of reference for the Scientific and Technical Body and mechanisms of participation should be clarified as early as possible.

### **Article 51, Clearinghouse mechanism**

*1. The clearing-house mechanism shall consist primarily of an open-access web-based platform. [It shall also include a network of experts and practitioners in relevant fields.] The specific modalities for the operation of the clearing-house mechanism shall be determined by the Conference of the Parties.*

The clearinghouse mechanism represents the publicly-facing repository of knowledge gleaned from research concerning BBNJ. Including experts and practitioners in the development of this platform is critical in order to bolster the mechanism's value and usability. Consistent engagement with the Scientific and Technical body will ensure that the provisioning of information evolves in step with technical developments and scientific and management priorities.

*3 [(a) Activities related to marine genetic resources of areas beyond national jurisdiction, including notices of forthcoming in situ collection of marine genetic resources, research teams, ecosystems where the marine genetic resources are collected, the [digital] [genetic] properties of the marine genetic resources, their biochemical components, genetic sequence data [and information] [and the utilization of marine genetic resources];]*

Information on the eventual results of BBNJ-related research should also be included in the web-based platform. Such products - which may consist of datasets or peer-reviewed publications, as well as instances of knowledge transfer and capacity building - would help ensure that research benefits are shared.

*3 [(d) Environmental impact assessments [, including:*

*(i) Environmental impact assessment reports;*

*(ii) Guidelines and technical methods on environmental impact assessments];]*

To allow full transparency on the processes and assessments of potential activities in ABNJ, expert reviews of proposed EIAs should be included as a part of the clearinghouse mechanism. Such resources will help guide future proponents of relevant activities and establish a degree of community-driven accountability for their sustainable use.

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## About DOSI

DOSI is an international network of deep ocean scientists and experts from other disciplines. DOSI seeks to integrate science, technology, policy, law and economics to advise on ecosystem-based management of resource use in the deep ocean and strategies to maintain the integrity of deep-ocean ecosystems within and beyond national jurisdiction. <https://www.dosi-project.org/>

These comments have been prepared through the [DOSI BBNJ Working Group](#) by:

Dr Peter J. Auster, University of Connecticut and Mystic Aquarium

Dr. Erik Cordes, Temple University

Dr Elizabeth De Santo, Franklin & Marshall College

Dr Elva Escobar-Briones, Universidad Nacional Autonoma de Mexico

Aria Ritz Finkelstein, Massachusetts Institute of Technology and Woods Hole Oceanographic Institute

Dr Harriet Harden-Davies, University of Wollongong

Dr Ana Hilário, Universidade de Aveiro

Dr Susanna Lidström, KTH Royal Institute of Technology

Dr Jeffrey Marlow, Harvard University

Dr Anna Metaxas, Dalhousie University

Dr Paul Snelgrove, Memorial University

For further information, please contact: Dr Maria Baker, University of Southampton, [mb11@noc.soton.ac.uk](mailto:mb11@noc.soton.ac.uk).