

# Legal Analysis on the Access and Benefit-sharing of Marine Generic Resources with 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 (resolution 69/292) and Convention on Biological Diversity : Intellectual Property

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## ABSTRACT

The objective of this memo is to analyze a draft text of an international legally-binding instrument 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(ABNJ)(resolution 69/292). The text will concentrate on access and benefit-sharing of Marine Genetic Resources(MGRs) and Convention on Biological Diversity(CBD) in order to recommend the applicable international legal framework for the sound governance of intellectual property claims, such as patents on inventions and copyrights on publications describing discoveries. The ultimate goal of this analysis is to accumulate perspectives and concerns raised by nations regarding protection of knowledge deriving from these resources using intellectual property rights and the implications of such protection in international law, including the rights granted by the UNCLOS, as well as regarding the access and benefit sharing obligations under the CBD and to present feasible and practical potentiality of a new IP regime to be discussed by the persons or nations concerned.

**Key words:** UNCLOS, MGRs, ABNJ, CBD, access and benefit sharing(ABS), IP, patent, copyright

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# 1. Introduction

There seems no appropriate regime, international law or legal instrument to answer whether marine genetic resources found in areas beyond national jurisdiction could be deemed as the common heritage of mankind. Whether they fall under the freedom of the high sea of UNCLOS Part VII, or whether marine bioprospecting could be regarded as simply marine scientific research that must be conducted for the benefit of all mankind, legal clarity is suggested as much as possible by applying the legal means that are already available, practical and promising. Feasible access to information on marine genetic resources found beyond national jurisdiction and benefit from them must be provided.

While bioprospecting potential assets, the appropriate management and protection of its intellectual property for inventions deriving from MGRs need to be considered as a prerequisite to promote research and innovation and their responsible proliferation for the equitable benefit of society as a whole.<sup>1)</sup> Licensing and patents could also promote and encourage private sector investment in research and development.

Nonetheless, the dissemination of IP over MGRs may raise the costs of conducting research with proprietary materials and research tools.<sup>2)</sup> As a consequence, newly discovered MGRs may be locked up by patent monopolies<sup>3)</sup> and it could lead to deterrence on further innovation. The latter may act as a deterrent for public sector non-profit research on these resources at the expense of promising research projects that could provide widely distributed benefits in the long-term.<sup>4)</sup>

In this context, consideration of a feasible and practical new IP regime using reliable and qualified methods of current IP structures will be initiated throughout this analysis.

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1) Claudio Chiarolla, 2014, "Intellectual property rights and benefit sharing from marine genetic resources in areas beyond national jurisdiction: Current discussions and regulatory options", *Queen Mary Journal of Intellectual Property*, Vol. 4 No. 3.

2) *Ibid.*

3) *Ibid.*

4) *Ibid.*

## 2. Legal Implication

### 2.1. UNCLOS and CBD

MGRs are not regulated through a specific international legal instrument.<sup>5)</sup> The UNCLOS aims to build legal framework in which all activities in the oceans and seas must be carried out;<sup>6)</sup> however, marine genetic resources are not mentioned in any UNCLOS provision, and according to Article 133(a) of the UNCLOS, 'resources' regulated by Part XI of the UNCLOS are explicitly defined as mineral resources, meaning only non-living resources and not marine genetic resources.<sup>7)</sup> Thus, it would be reasonable to assume that the benefit-sharing obligations under Part XI do not apply to marine genetic resources from BBNJ.<sup>8)</sup> It is explained further that:<sup>9)</sup>

Both UNCLOS and the CBD provide the legal framework for activities related to MGRs from organisms found within national sovereignty (i.e. in the internal waters,<sup>10)</sup> archipelagic waters<sup>11)</sup> and the territorial sea<sup>12)</sup>) or jurisdiction (i.e. the exclusive economic zone<sup>13)</sup> and the continental shelf<sup>14)</sup>).

#### 2.2.1 UNCLOS Article 136 : Common Heritage of Mankind

UNCLOS Part XI regulates the Area (the seabed and its subsoil beyond areas of national jurisdiction) and states that it and its mineral resources are the common heritage of mankind.<sup>15)</sup> In particular, Articles 136 and 137 of UNCLOS establish that no state shall claim sovereign rights over these resources and that activities in the Area must be carried out for the benefit of mankind.<sup>16)</sup>

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5) Ibid.

6) UNGA resolution 65/37A. "Oceans and the law of the sea." UN doc. A/RES/65/37A, of 7 December 2010. Preamble.

7) Thomas Greiber, IUCN, "An International Instrument on Conservation and Sustainable Use of Biodiversity in Marine Areas beyond National Jurisdiction, Paper 3, Option and Approaches for Access and Benefit-sharing" Chicago Journal of I.

8) Ibid.

9) M Vierros, C Salpin, C Chiarolla and S Arico, 'Emerging and Unresolved Issues: The Example of Seabed and Open Ocean Genetic Resources in Areas beyond National Jurisdiction', in S Arico (ed), Sustainable Oceans in the Twenty-first Century, Footnotes n 94 to 99 (UNESCO-Cambridge University Press, Cambridge, UK 2014 forthcoming)

10) UNCLOS, Article 8

11) UNCLOS, Article 49

12) UNCLOS, Article 3

13) UNCLOS, Articles 55 and 57

14) UNCLOS, Article 76

15) Heafey, Eve (2014) "Access and Benefit Sharing of Marine Genetic Resources from Areas beyond National Jurisdiction: Intellectual Property--Friend, Not Foe," Chicago Journal of International Law: Vol. 14: No. 2, Article 5.

16) Ibid.

### **Article 136 Common heritage of mankind**

*The Area and its resources are the common heritage of mankind*

#### 2.2.2 UNCLOS Article 87 & 89 : Freedom of the High Seas

According to Article 87 and 89 in UNCLOS, the high seas are open to all states and governed by the principles of freedom of the high seas. States' innate freedom within the high seas, including the freedom of scientific researches, must be exercised with due regard for other states' interests in their exercise of these same freedoms.<sup>17)</sup>

### **Article 87 Freedom of the high seas**

1. *The high seas are open to all States, whether coastal or land-locked. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law. It comprises, inter alia, both for coastal and land-locked States:*

*(a) freedom of navigation;*

*(b) freedom of overflight;*

*(c) freedom to lay submarine cables and pipelines, subject to Part VI;*

*(d) freedom to construct artificial islands and other installations permitted under international law, subject to Part VI;*

*(e) freedom of fishing, subject to the conditions laid down in section 2;*

*(f) freedom of scientific research, subject to Parts VI and XIII.*

2. *These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area.*

### **Article 89 Invalidity of claims of sovereignty over the high seas**

*No State may validly purport to subject any part of the high seas to its sovereignty.*

#### 2.2.3 Convention on Biological Diversity and Nagoya Protocol

According to Article 15.1 of the CBD and Article 3 of the Nagoya Protocol, the Convention on Biological Diversity(CBD) and its protocol and Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization(Nagoya Protocol) are only applicable to MGRs over countries that have sovereignty. It is further written that:<sup>18)</sup>

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17) Heafey, Eve, supra n 16.

18) Vierros et al., supra n 2. Footnotes n 94 to 99.

As regards the components of biological diversity, the CBD's scope is set out in Article 4(a), which limits its application to areas within the limits of national jurisdiction. However, [.....] the CBD is also applicable to activities related to biological resources that are sourced from areas beyond national jurisdiction by virtue of Article 4(b). The latter provides that the CBD applies, in the case of processes and activities, regardless of where their effects occur, carried out under a Party's jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.<sup>19)</sup> [.....] Ultimately, the scope of the Nagoya Protocol, as adopted, is limited to genetic resources within national jurisdiction

#### **Article 4. Jurisdictional Scope**

*Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:*

*(b) In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.*

#### **Article 22. Relationship with Other International Conventions**

*2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights" and obligations of States under the law of the sea.*

## **3. Lack of Legal Clarity and Uneven Distribution**

### *3.1. Lack of Clarity and Certainty*

Marine genetic resources in ABNJ are not regulated through a specific international legal instrument. The scope of the ABS regime established by the Convention on Biological Diversity (CBD) and its Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol) is limited to genetic resources over which States have sovereign rights (Article 15.1 of the CBD and Article 3 of the Nagoya Protocol). Therefore, marine genetic resources from ABNJ are not covered. The UNCLOS sets out the legal framework within which activities in the oceans and seas must be carried out,<sup>20)</sup> thus in theory also for ABS

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19) United Nations 2006, Report of the Ad Hoc Open-ended Informal Working Group to Study Issues relating to the Conservation and Sustainable Use of Marine Biological Diversity beyond Areas of National Jurisdiction, UN Doc. A/61/65.

20) UNGA resolution 65/37A. 'Oceans and the law of the sea.' UN doc. A/RES/65/37A, of 7 December 2010. Preamble.

with regard to marine genetic resources from ABNJ. However, marine genetic resources are not mentioned in any UNCLOS provision, and 'resources' regulated by Part XI of the UNCLOS are explicitly defined as mineral resources, meaning only non-living resources and not marine genetic resources (Article 133(a) of the UNCLOS). Therefore, it can be argued that the benefit-sharing obligations under Part XI do not apply to marine genetic resources from ABNJ, but rather the freedom of the high seas. This freedom again is not unlimited, as indicated in Article 87.1 and 2, and Article 88 of the UNCLOS, but for example subject to the provisions on marine scientific research (MSR) which embody different forms of benefit-sharing (see Section 5. below). Yet there is no framework to specify, coordinate, promote and monitor the implementation of these benefit-sharing obligations. In sum, this leads to a lack of legal clarity and certainty which could be solved through a future international instrument on ABNJ under the UNCLOS.

### *3.2. Uneven Distribution of Technology and Expertise*

Lack of sufficient R&D capacities, both intellectual and technological, limit many countries in benefiting from the scientific as well as commercial opportunities related to marine genetic resources. More than 40 countries possess offshore research vessels, but the majority of them belong to a small number of developed countries.<sup>8</sup> The number of deep diving scientific submersibles is even more limited and operated by a subset of developed countries currently leading marine scientific research.<sup>9</sup> Furthermore, the majority of leading marine biotech experts is located in developed countries, as indicated by the geographic distribution of marine biodiversity publications as well as patent claims for genes of marine origin.

## **4. New IP Regime**

### *4.1. Current IP Protection*

In this chapter, the main consideration will be regarding IP and a brief overview of international instruments that could help to interpret questions of ABS and IP issues. Understanding the various sources of international law of relevance to ABS and IP beyond the CBD and the Nagoya Protocol is the aim of this chapter based on information and logical framework.

#### **4.1.1 Agreement on Trade-related Aspects of Intellectual Property Rights Agreement**

As one of the agreements to which all Members of the World Trade Organization must adhere, the Agreement on Trade-related Aspects of Intellectual Property Rights (hereafter the TRIPS Agreement) has had a major impact on the scope of

intellectual property protection around the world. The TRIPS Agreement establishes minimum standards of protection for WTO Members over a variety of IP instruments including patents, copyrights, trademarks, geographical indications, industrial designs, plant variety protection, integrated circuit designs and undisclosed information. As such, it is considered an important reference point for international IP rules.<sup>21)</sup>

While incorporating many of the provisions of the Paris Convention for the Protection of Industrial Property, TRIPS requires that patents only be granted to inventions that are new, involve an inventive step and are capable of industrial application (Article 27.1).<sup>22)</sup> Under Article 28.1 of the TRIPS Agreement, patents are a public authorization that grants to the owner the right to preclude others from the acts of making, using, offering for sale, selling or importing a protected product or process for at least 20 years.<sup>23)</sup>

The TRIPS Agreement does not itself define the contours of a copyright and instead incorporates the substantive provisions of the Berne Convention of 1971, including the term of protection as the life of the creator plus 50 years.<sup>24)</sup> Article 9 of the TRIPS Agreement does stipulate, however, that copyright protection extends to expressions and not ideas, procedures, methods of operation or mathematical concepts.<sup>25)</sup> TRIPS does guarantee copyright protection to computer programs (Article 10, TRIPS), and recognizes rental rights (Article 11, TRIPS) and the rights of performers, producers of phono grams and broadcasting organizations (Article 14, TRIPS).<sup>26)</sup>

#### 4.1.2 World Intellectual Property Organization Treaties

Established as a specialized agency of the United Nations in 1967, the World Intellectual Property Organization (WIPO) provides secretariat services for many of the substantive IP treaties and is also the venue for the negotiation of many new IP treaties. <sup>27)</sup>

WIPO serves as the treaty secretariat for the Berne Convention on copyrights. Copyrights take on significance with respect to the interface between ABS and IP as they have an impact on how certain substance may be treated. According to Article 2(1) of the Berne Convention;

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21) The Convention on Biological Diversity and the Nagoya Protocol : Intellectual Property Implications, United Nations Conference on Trade and Development(2014)

22) Ibid n 31.

23) Ibid n 31.

24) Ibid.

25) Ibid n 31.

26) Ibid.

27) Ibid n 35.

*“Every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures addresses, sermons and other works of the same nature; dramatic or dramaticomusical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science.”*

WIPO is currently engaged in standard setting discussions on the interface between biodiversity and IP.<sup>28)</sup> In October 2000, the General Assembly of WIPO established the Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore (hereafter the IGC).<sup>29)</sup> The WIPO General Assembly has given a mandate to the IGC to conduct negotiations with the objective of reaching agreement on the text of an international legal instrument (or instruments) which will ensure effective protection of TK, traditional cultural expressions (TCEs)/folklore and genetic resources.<sup>30)</sup>

#### 4.1.3 International Union for the Protection of New Varieties of Plants (UPOV)

Article 27.3(b) of the TRIPS Agreement gives WTO members the option of providing patent protection for plant varieties or for setting up a sui generis system for plant breeders' rights, or some combination of the two.<sup>31)</sup> The International Union for the Protection of New Varieties of Plants (UPOV) is a multilateral treaty that facilitates international protection of new varieties of plants through a sui generis system of plant breeders' rights for such new plants that meet certain minimum standards.<sup>32)</sup> It is therefore a treaty that is of interest to users who seek to commercialize a newly developed variety of a plant.<sup>33)</sup> The minimum standards that must be contained in national legislation differ depending upon whether a country has acceded to the UPOV treaty as amended in 1991 or an earlier version of the UPOV treaty.<sup>34)</sup>

The interface of UPOV with the Nagoya Protocol and the CBD is similar to that for patents, in so far as the grant of a plant breeders' right to exclude others from the use of variety without a license, subject to a number of possible exceptions

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28) Ibid n 35.

29) Ibid n 35.

30) Ibid n 35.

31) Ibid n 37.

32) Ibid.

33) Ibid.

34) Ibid.



(for example, the farmers' right to save seeds if contained in national legislation).<sup>35)</sup> According to Article 15(2), it contains an optional exception to the breeder's right, giving UPOV parties the opportunity, "within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder, [to] restrict the breeder's right in relation to any variety in order to permit farmers to use for propagating purposes, on their own holdings, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety."<sup>36)</sup> If this farmers' exception is implemented domestically, it often is restricted to small-scale farmers or coupled with a specific license fee system.<sup>37)</sup>

## 4.2. *New IP Regime*

### 4.2.1 Open-source Licensing and Database Protection

We believe that a new method is needed to procure protection for MGRs and its patentable or copyrightable inventions deriving from BBNJ. Proliferation of them to be distributed for further inventions by society toward objectives of sound and more equitable access and benefit sharing, open-access scientific publishing and free and open resources software may contribute to the spread of marine biological innovations and the dissemination of MSR results.<sup>38)</sup> Open access to relevant scientific publications, data and software (to analyse this data) could be viewed as an important component of non-monetary benefit-sharing.<sup>39)</sup>

One of the possible methods to be applied would be open-access policies that the main concept and structure are analogous to European Commission's Open Data package, concerning digital data that is co-shared, managed or produced with the support of public and common bodies.<sup>40)</sup> Since ISA is the main international scheme to broadly verify and control the researches and works related to MGRs so far, a pilot program could be designed within the frame of ISA which aims to be one of the concrete and promising ways of dealing with ABS concerns. Other experts have also considered these ideas elsewhere:<sup>41)</sup>

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35) Ibid n 37.

36) Ibid.

37) Ibid.

38) C Chiarolla, Intellectual Property Rights, IUCN Information Paper prepared for the UN Intersessional Workshop on Marine Genetic Resources, May 2013, New York, <http://www.un.org/depts/los/biodiversityworkinggroup/documents/IUCN%20Information%20Papers%20for%20BBNJ%20Intersessional%20Workshop%20on%20MGR.pdf> (26 April 2018)

39) Ibid.

40) <https://ec.europa.eu/digital-single-market/en/european-legislation-reuse-public-sector-information> (26 April 2018)

41) European Commission, 'Open Data', <[http://ec.europa.eu/information\\_society/policy/psi/index\\_en.htm](http://ec.europa.eu/information_society/policy/psi/index_en.htm)> (accessed 26 November 2013). The entire package comprises: a Communication on Open Data, including data re-use policy; a proposal to revise the 2003 Directive on re-use of public sector information (Directive 2003/98/EC); and a revision of the Decision governing re-use of the Commission's own information.

Open-source licensing is a form of management of IP assets, initially developed in the software context, whose objective is to disseminate innovation in a non-proprietary fashion. An open-source approach may be preferable to straightforward publication when: (1) the inventor/developer has automatically vested IP rights in an intellectual asset; or (2) defensive disclosure through publication would still expose the author to the risk that others might seek ownership of the technology; or (3) it is preferable to set terms of use that exclude everyone who does not agree to make improvements available under the same liberal terms that apply to the core technology.

#### 4.2.2 Multilateral System of Access and Benefit Sharing

Predecessors from other international organizations of their resolutions for Benefit sharing concerns could be quoted, such as the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO Treaty) and the CBD.

FAO Treaty establishes, inter alia, a multilateral system to facilitate access to plant genetic resources for food and agriculture, which is regarded as a major component of sharing the benefits arising out of the use of these genetic resources in a fair and equitable manner.<sup>42)</sup>

Under the Multilateral System of Access and Benefit Sharing (MLS), parties to the Treaty agree to make freely available genetic diversity and related information stored in ex-situ collections concerning, at present, 81 forage species from 29 genera and an undefined number of crop species from 51 genera (covering the majority of major plant crops that are important for human food security). The system is operationalized through a standard material transfer agreement (MTA).<sup>43)</sup>

Through this system, recipients of MLS materials who commercialize a product that is a plant genetic resource for food and agriculture incorporating material accessed through the MLS pay to a trust account a share of the benefits arising from commercialization.<sup>44)</sup> These funds mostly benefit farmers who conserve and use plant genetic resources for food and agriculture in a sustainable manner.<sup>45)</sup>

The method initiated by FAO through MLS seems to encourage private entities or persons to get more approachable chances to co-shared information while protecting patent. In addition to that, it also enhances capacity in some aspects.

Although former ABS systems are based on the circumstances that the sovereignty of those resources are within each national jurisdiction, some learn from it could

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42) United Nations Conference on Trade and Development, *Supra* 21 n 24.

43) *Ibid* n 24.

44) International Treaty on Plant Genetic Resources for Food and Agriculture, art. 13(2)(d)(ii), available at <ftp://ftp.fao.org/docrep/fao/011/i0510e/i0510e.pdf> (26 April 2018).

45) *Ibid*.

ignite new possibilities, such as voluntary sign-up by patent owner to join these kinds of newly launched system and certain portion or all of its contribution from commercializing could be distributed to certain sectors to be supported, this routine of access and benefit sharing could also be deemed to achieve one of the objectives of UNCLOS, co-owning monetary and non-monetary benefits of MGRs deriving from beyond national jurisdiction.

## 5. Conclusion

Some important principles can be depicted as protection and enforcement of intellectual property rights. These should contribute to the advancement and transfer of technology while only granting the patent on new and useful inventions. Naturally occurring elements or merely discovered based on the statement by the TRIPS Agreement should not be included.<sup>46)</sup> Protection of patent and copyrights assures that inventors for MGRs related works have control over their inventions and are secured under the realm of legal clarity and stability, thereby facilitating collaborations which promote access and benefit sharing in transferring technology and strengthening capacity building.<sup>47)</sup> Collaborations would also maximize the scientific returns from MGRs related inventions available and reward society with its advantages. <sup>48)</sup>

In conclusion, fostering practical and feasible ways to protect access to information and benefits of MGRs found beyond national jurisdiction within the framework of international instruments at the beginning stage with the ideas of equitable sharing of the common heritage of mankind is necessary. By implementing a feasible and practical new IP regime using reliable and qualified methods of current IP structure, stability and clarity on patentable or copyrightable inventions or ideas can be encouraged and utilized for the benefit of more individuals.

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46) Agreement on Trade-Related Aspects of Intellectual Property Rights, Art. 7, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1125, 1197 (1994)

47) Heafey, Eve, supra n 16.

48) Ibid.

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