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Can Common the Heritage of Mankind Principle be Applied to Marine Genetic Resources?⁶

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Abstract

This article aims to analyse whether the common heritage of mankind (CHM) principle can be applied to marine genetic resources (MGRs) found in areas beyond national jurisdiction (ABNJ). While there are many supports in applying CHM principle over the MGRs, some argues that MGRs are more specific than merely marine biodiversity. As this turns out, agreement under the LOSC on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ Agreement) adopts the regime of the common heritage of humankind (CHH) for marine biodiversity found in ABNJ. However, it is argued that such regime requires the certain mechanism of the application of access of benefit sharing (ABS). Thus, it requires further guidelines, especially for states in applying it nationally, in particular relating to the mechanism for access of benefit sharing. Different capacity of states should also be considered in this matter.

Keywords: marine genetic resources, common heritage of mankind, areas beyond national jurisdiction, access to benefit sharing.

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Czy zasada wspólnego dziedzictwa ludzkości może mieć zastosowanie do morskich zasobów genetycznych?⁷

Streszczenie

Niniejszy artykuł ma na celu przeanalizowanie, czy zasada wspólnego dziedzictwa ludzkości (CHM) może być stosowana do morskich zasobów genetycznych (MGR) znajdujących się na obszarach poza jurysdykcją krajową (ABNJ). Chociaż istnieje wiele argumentów przemawiających za stosowaniem zasady CHM w odniesieniu do MGR, niektórzy twierdzą, że MGR są bardziej specyficzne niż tylko morska różnorodność biologiczna. Jak się okazuje, porozumienie w ramach Konwencji Narodów Zjednoczonych o prawie morza w sprawie ochrony i zrównoważonego użytkowania morskiej różnorodności biologicznej obszarów znajdujących się poza jurysdykcją krajową (porozumienie BBNJ) przyjmuje system wspólnego dziedzictwa ludzkości (CHH) dla morskiej różnorodności biologicznej znajdującej się w ABNJ. Argumentuje się jednak, że taki system wymaga pewnego mechanizmu stosowania dostępu do podziału korzyści (ABS). W związku z tym wymaga on dalszych wytycznych, zwłaszcza dla państw stosujących go na szczeblu krajowym, w szczególności w odniesieniu do mechanizmu dostępu do podziału korzyści. W tej kwestii należy również wziąć pod uwagę różne możliwości państw.

Słowa kluczowe: morskie zasoby genetyczne, wspólne dziedzictwo ludzkości, obszary poza jurysdykcją krajową, dostęp do podziału korzyści.

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Introduction

The Law of the Sea Convention (LOSC) has been in force for more than 25 years.⁸ While LOSC is an umbrella convention, which needs further regulations in its implementation, the development of marine technology poses questions whether the LOSC provisions can cope with such development. Although LOSC provides provisions on both management of living and non-living resources found within all various maritime zones, yet the development of marine resources utilization proof to be ahead the provisions. Unlike areas within national jurisdiction, in areas beyond national jurisdiction (ABNJ) exists variety or freedoms,⁹ one of them is freedom of fishing. Related to the freedom of fishing, Articles 116–118 LOSC envisages conservation, preservation as well as the management of living resources found within the ABNJ. However, the development of marine technology has given states a chance to explore more than mere living resources. Through the process of bioprospecting, marine living resources can be extracted further to become marine genetics resources (MGRs), which can be defined as:

‘marine genetic material, 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.’¹⁰

Although over the ABNJ there is no state’s sovereignty can be implemented, Article 118 of LOSC emphasized on the states’ cooperation with regard to conservation and management of living resources. Such cooperation should be conducted, especially when states exploit identical living resources or different living resources within the same areas. This obligation, then, refers to so-called regional fisheries management organizations (RFMOs). In such, these RFMOs are responsible in ensuring appropriate conservation and management. On the other hand, the exploration and exploitation of non-living resources were put under the authority of

⁸ United Nations Convention on the Law of the Sea (1982), <https://treaties.un.org/doc/publication/unts/volume%201833/volume-1833-a-31363-english.pdf> (access: 28.03.2023).

⁹ Ibidem.

¹⁰ IUCN, *Marine Genetic Resources*, Part II, <https://www.iucn.org/sites/default/files/2022-07/iucn-briefing-mgr-v2-final.pdf> (access: 28.02.2023).

International Seabed Authority (ISA). However, LOSC is silent on protection and preservation of marine biodiversity found in ABNJ. While the 1992 Convention on Biodiversity (CBD) regulates the protection and preservation of marine biodiversity, unfortunately the CBD is only applicable in areas within national jurisdiction. Article 4(b) of the CBD provides that the CBD is also applicable in the process and activities in relation to marine biodiversity in ABNJ. However, there is no detail regulation as to what regime is applicable to MGRs found in ABNJ.

Furthermore, in fact, Chapter XI of the LOSC which regulates area, provides the exploration and exploitation of non-living resources found in ABNJ. Article 136 of LOSC envisages that the regime of the common heritage of mankind (CHM) is applied to the area. However, such application only limited to non-living resources found in ABNJ, whereas MGRs are genetic extraction conducted upon the living resources and other biodiversity found in ABNJ. Thus, this article aims to analyse whether the CHM can also be applied to the living resources, in this case, the MGRs found in ABNJ. If applicable, what sort of model can be used in order to protect and preserve the MGRs toward the sustainable use of ocean resources? This paper begins with the understanding of the legal regime of ABNJ, as provided by the LOSC under the maritime zone arrangement. It further proceeds with the discussion of what MGRs are and how this develops from marine biodiversity. This is followed by the discussion of the CHM and why it only applied in non-living resources and what were the considerations of the application of the CHM to the area related to non-living resources. Can the CHM also be applied to living resources? Does it conclude with the proposed model? If CHM can be applied to MGRs, what kind further arrangement is needed? How does a given state comply with that? Beside LOSC and the CBD, this article also highlights the Draft 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 2023 to support the argument. Although there are several research studies of marine biodiversity and resources within ABNJ as well as CHM principles,¹¹ none of the discussions focuses on the legal regime of MGRs found in ABNJ.

¹¹ M.H. Nordquist, J.N. Moore (eds.), *Marine Biodiversity in Areas Beyond National Jurisdiction*, [in:] *The Future of Ocean Governance and Capacity Development*, Vol. 24, Leiden 2019, pp. 151-155; J. Barrett, R. Barnes, *UNCLOS at 30 and Beyond*, Belfast 2012; A. Jørem, M.W. Tvedt, *Bioprospecting in the High Seas: Existing Rights and Obligations in View of a New Legal Regime for Marine Areas Beyond National Jurisdiction*, "The International Journal of Marine and Coastal Law" 2014, 29(2), pp. 321-343; D. Freestone, *Governance of Areas Beyond National Jurisdiction: An Unfinished Agenda of the 1982 Convention?*, [in:] J. Barrett, R. Barnes (eds.), op. cit.; S. Wartini, *The Legal Lacunae of UNCLOS and CBD to the Access and Benefit Sharing of Marine Genetic Resources in The Area Beyond National Jurisdiction*, "Varia Justicia" 2022, 18(1), pp. 52-70; A. Merdekawati et al., *Arti Penting Common Heritage of Mankind Dalam Rezim Pengaturan Area Dan Perkembangannya*, "Law Review" 2022, 21(3), p. 279; A. Merdekawati, M. Triatmodjo, *Equity Interest Scheme's Compatibility with the UNCLOS 1982's Common Heritage of Mankind Principle*, "Law Reform" 2022, 18(1),

Legal Regime of Areas beyond National Jurisdiction

One of the most important innovations provided by LOSC was the provisions on various maritime zones. In general, a state and/or a coastal state constituting land and water areas is eligible to claim certain territorial sea and other maritime zones following the territorial sea. Those waters were divided into areas within national jurisdiction (comprises of waters under the sovereignty and under the sovereign rights of a coastal state), and areas beyond national jurisdiction (ABNJ). Unlike the sovereignty over the land, coastal state's sovereignty over the ocean should consider rights of other states over the ocean itself. While the areas within national jurisdiction are clearly envisaged by the provisions in Article 2-85 LOSC, including the mechanism and the extent to which a coastal state's sovereignty and sovereign rights can be exercised, Article 87 of the LOSC makes it clear that ABNJ, which are frequently called high seas, are open to all states, whether coastal or landlocked. LOSC further provides lists of freedoms which can be exercised over the ABNJ, but with no specific further provisions concerning the exploration and exploitation of ocean resources, especially modification of living resources. Such freedom can only be exercised under the conditions laid down by LOSC itself and by other rules of international law as well as with due regard to the interests of other States in their exercise of the freedom of high seas as well as other rights under the LOSC relating to the Area. Freestone further adds that another specific restriction in exercising those rights and freedoms is by international agreement that would be binding only to the states which are party to them.¹² Similarly, Article 197 refers to the obligation of states to

cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organization, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features.

Furthermore, with regard to the exploration and exploitation of living resources, LOSC further encourage states to establish subregional or regional fisheries organization to take necessary measures for the conservation of living resources concerned. Thus, various RFMOs, based on certain international agreement, were established

pp. 111–131; A. Merdekawati, M. Triatmodjo, I.A.T. Hasibuan, *The Recent Challenged Development to Implement UNCLOS 1982's Common Heritage of Mankind*, "Mimbar Hukum" 2022, 34(1), pp. 1–31.

¹² D. Freestone, *op. cit.*

to manage the exploration and exploitation of living resources, in this case, limited to fish; on the other hand, it gives authority to ISA in organizing and controlling the exploration and exploitation of non-living resources.

However, in its development, ocean resources cannot just be divided into living and non-living resources, since there is actually mega biodiversity exist within the ocean.¹³ Biodiversity over the ABNJ covers various and fundamental questions, such as the scope of MGRs, transfer of technology, benefit sharing, formulating and addressing the implication of a legally binding instrument as well as monitoring and law enforcement and many other things.¹⁴ While over the ABNJ freedom of high seas applied, it is questionable whether the same freedom can also be applied over the MGRs and other biodiversity? And if this is so, under what regime are the exploration and exploitation of MGRs allowed? Who would have the authority in relation to control? In addition to this, in some cases, however, it is possible that while the water column falls within the regime of ABNJ, the seabed still falls within the regime of continental shelf of certain state (in most cases over the extended continental shelf). Thus, Oegroseno questions the legal status of biodiversity and MGRs lying over such areas which fall under two different regimes. He further suggests that in such a case a *sui generis* arrangement should be made relating to the existing biodiversity and marine genetic resources. This means, assigning the water column to the coastal state concerned.¹⁵ Upon this arrangement, some would see this unfair, since such a coastal state would also gain access to a water column above the extended continental shelf. On the other hand, it can be seen as such a waste if the coastal state concerned does not have enough capacity to conduct exploration and exploitation over the biodiversity and MGRs found within the water column above the extended continental shelf. It follows from the above that the problem actually refers to the regime of biodiversity and the MGRs themselves. This way, it is argued that it is important to find a balancing arrangement or regime over the MGRs. It is also crucial to identify types of MGRs which can be found within 350 nautical miles and beyond. What should be taken into account is the fact that the freedom of high seas exists over the water column of ABNJ, while over the seabed or ABNJ, often called the area, the regime of the CHM exists. So, it is questionable which regime most suitable to be applied to the MGRs found in the ABNJ.

¹³ M.H. Nordquist, J.N. Moore, *op. cit.*

¹⁴ A.H. Oegroseno, *Managing High Seas through a Sui Generis*, [in:] R. Long, M.H. Nordquist (eds.), *Marine Biodiversity of Areas Beyond National Jurisdiction*, Leiden 2021, pp. 38–42.

¹⁵ *Ibidem.*

Development of Marine Resources: Bioprospecting Process and MGRS

In its development, living natural resources are very useful for the survival of mankind. As stated earlier that living resources can be developed further or extracted to become a very useful substance for mankind through the process of bioprospecting. Such development resulted in so-called marine genetic resources (MGRs). One of the elements of biodiversity found in ABNJ is marine genetic resources (MGRs). According to the International Union for Conservation of Nature (IUCN), MGRs can be defined as:

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.¹⁶

While LOSC is silent on the protection and preservation of marine biodiversity, the international community has formulated a related international convention, namely the 1992 Convention on Biodiversity, or what is commonly referred to as the CBD. Attention to biodiversity, especially the protection of biodiversity, is motivated by the desire and commitment of the international community for sustainable development. If natural resources including biodiversity in ABNJ can be exploited, then protection is needed in order to create sustainability of the availability of these natural resources.¹⁷

The CBD was adopted in Rio de Janeiro in June 1992, inspired by the international community's commitment to sustainable development. This convention was formulated with the aim of conserving biodiversity and using components of biodiversity in a sustainable manner. As well as achieving fair and equitable distribution of benefits arising from the utilization of genetic resources. In achieving its goals, the CBD must be translated into the national strategies of member countries. CBD is equipped with two additional protocols, namely the Cartagena Protocol and the Nagoya Protocol. The Cartagena Protocol was adopted on 29 January 2000 and entered into force on 11 September 2003. This protocol governing biosafety is an international agreement governing the movement of living organisms modified by modern biotechnology from one country to another. Meanwhile, the Nagoya

¹⁶ UCN, Marine Genetic Resources, Part II, <https://www.iucn.org/sites/default/files/202207/iucnbriefingmgrv2final.pdf> (access: 28.02.2023).

¹⁷ M.H. Nordquist, J.M. Moore, *op. cit.*

Protocol was adopted on 29 October 2010 in Nagoya, Japan, and entered into force on 12 October 2014. This protocol provides a legal framework for the implementation of one of the goals of the CBD, namely the fair and equitable sharing of benefits arising from the use of genetic resources. DeLong defines biodiversity as an area that concerns the diversity within and between living organisms, assemblages of organisms, biotic communities, and biotic processes, whether natural or altered by humans.¹⁸ Biodiversity can be measured from the genetic level and its identity, the number of species, species assemblages, biotic communities, biotic processes and quantities (such as abundance, biomass, cover, and rate), and the structure of these levels.¹⁹ Biodiversity is not only the variation in the form and quantity of living natural resources, but it includes the components of the biodiversity itself, the processes and activities carried out on this biodiversity. The CBD adds what is not regulated in LOSC regarding biodiversity in marine areas that are within the national jurisdiction of a country. The CBD also regulates the implementation of access and benefit sharing (ABS) between coastal countries and other countries. Under public international law, the access and benefit-sharing (ABS) system strives to equitably transfer advantages from the use of MGRs between provider governments and consumers of genetic resources, such as universities and biotech corporations.²⁰

Meanwhile Article 2 of CBD 1992 does not explicitly define MGRs, but states that biological resources include 'genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.' One of the MGRs found at ABNJ is green fluorescent protein (GFP) which was taken through a bioprospecting process from the *Aequorea bioluminescent jellyfish*.²¹ GFP is a drug used by people with cancer, Alzheimer's disease and it prevents HIV transmission. Other bioprospecting carried out by developed countries can then find 150 MGRs to prevent the spread of HIV and cosmetic raw materials.²² At this point, bioprospecting can be defined as 'the search for biological compounds of actual or potential value to various applications, in particular commercial applications.'²³ In fact, concerning ABNJ (high seas and area), LOSC only recognizes living resources and resources as defined in Article

¹⁸ D.C. DeLong, Jr., *Defining Biodiversity*, "Wildlife Society Bulletin" 1996, 24(4), pp. 738–749.

¹⁹ A.S. Leksono, *Keanekaragaman Hayati: Teori Dan Aplikasi*, Malang 2010.

²⁰ A. Bonfanti, S. Trevisanut, *TRIPS on the High Seas: Intellectual Property Rights on Marine Genetic Resources*, "Brooklyn Journal of International Law" 2011, 37(1), pp. 187–231.

²¹ E. Heafey, *Access and Benefit Sharing of Marine Genetic Resources from Areas Beyond National Jurisdiction: Intellectual Property-Friend, Not Foe*, "Chicago Journal of International Law" 2014, 14(2), pp. 493–523.

²² *Ibidem*; S. Wartini, *op. cit.*

²³ United Nations Secretary-General, *Oceans and the Law of the Sea: Report of the Secretary-General*, Geneva 2007.

133 of LOSC. The definition of resources as envisaged in Article 133 of LOSC clearly does not include MGRs or any other biodiversity found in ABNJ. Article 133(1) of LOSC reads as follows:

resources means all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetallic nodules.

It can be concluded that in respect of ocean resources, LOSC only acknowledges living resources (in this case, it can be said limited to fishes) and non-living resources as included within the definition of resources provided in Article 133(1) of LOSC. While in response to Article 118 LOSC, various RFMOs were established, not all states, however, have capacity to explore more on biodiversity as well as the conduction bioprospecting process to gain MGRs. This way, both LOSC and the CBD are silent on both the legal regime of MGRs and on the marine protection against bioprospecting activities. If the regime of high seas, that is, the freedom of high seas, is also applied to the MGRs found in ABNJ, the utilization of MGRs will provide commercial benefits without any obligation to share benefits with other countries. On the other hand, if the CHM regime is applied to the MGRs, Article 133(1) of LOSC clearly defines resources as non-living resources. Thus, the regime of the CHM can only be applied to non-living resources found in the ABNJ, specifically in the area. This way, an agreed legal regime on MGRs is crucial.²⁴

Furthermore, Article 5 of the CBD only recommends that countries cooperate even with RFMOs in the utilization of biodiversity. However, there are no further arrangements regarding the cooperation mechanism. If the freedom of high seas is still enforced on MGRs in ABNJ, then it will be unfair because the development of MGRs into drugs will get a patent and will be sold at a high price. As for the CHM regime in ABNJ, once again, it only applies to non-biological natural resources. Therefore, an international legal framework is needed to regulate the legal regime of MGRs in ABNJ.

The Nature of Common Heritage of Mankind

Prior to the adoption of LOSC, the international convention governing ABNJ was the 1958 Convention on the High Seas. Article 1 of the 1958 Convention on the High Seas states that: '[t]he term of "high seas" means all parts of the sea that are not included in the territorial sea or in the internal waters of a State.' There was

²⁴ A. Jørem, M.W. Tvedt, *op. cit.*

no distinction between the regime of high seas (free sea) and areas (seabed and land under the free sea). In other words, the area is part of the high seas. Thus, the legal regime that applies in the area is the same as the legal regime that applies in the high seas. Arrangements regarding areas, which then apply special regimes in areas that are different from those in the high seas, only existed after the birth of LOSC. This was against the backdrop of the discovery of polymetallic nodules at the end of the 19th century by the ship HMS *Challenger*, to be precise, in the period 1872–1976. This discovery of such non-living resources caused debate among the international community because at that time what was in effect was the freedom regime in the high seas, and it was not under the jurisdiction of any country, as stipulated in Article 2 of the 1982 Convention on the High Seas as follows: '[t]he high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty.' Therefore, the question is how to use and manage it, even though these resources are very useful for human life.

It cannot be denied that the birth of CHM was a revolution from the intersection of state sovereignty and freedom of high seas. When an asset/object that can be utilized is found in an area where no state sovereignty can be exercised, it raises questions about the ownership of the object. According to International Law, an unoccupied object/territory is *res nullius* and its use is *res communis* so that an object that is not owned by anyone may be controlled or owned by whoever discovered it for the first time. Meanwhile, *res communis* sees that these natural objects/resources are excluded from anyone's ownership or in other words shared property. Merdekawati said that the CHM 'is the opposite of *res nullius* because it places humanity as the owner and does not allow appropriation.'²⁵ Exploration and exploitation of the area at that time was debated by at least 4 groups of states, namely Western states, industrial states, coastal states (most of which were developing states) and capitalist/communist states. Western states and large industrial states are certainly more inclined to the principle of first come, first served, while capitalist/communist states consider that the benefits of the area must be enjoyed together, then the coastal states certainly want to gain access to resources through the transfer of technology carried out in the exploration of the area. In the end, the UN General Assembly issued UN General Assembly Resolution No. 2749 of 1970 which produced a declaration called the Declaration of Principles Governing the Sea-Bed and Ocean Floor, and the subsoil thereof, beyond the limits of National Jurisdiction. This declaration was the forerunner of the regulatory regime in the area for non-living resources,

²⁵ A. Merdekawati, M. Triatmodjo, I.A.T. Hasibuan, V. Purnamawati, N.A. Rahma, *Arti Penting Common Heritage of Mankind Dalam Rezim Pengaturan Area Dan Perkembangannya*, "Law Review" 2022, 21(3). DOI: 10.19166/lr.v0i3.4198.

which was then set forth in Article 136 of UNCLOS (1982) which explicitly stated the CHM regime for resources in the area, which refers to non-living resources.

Relating to the CHM principles, it should be noted that the CHM does not replace any other legal regime, but only applies to certain resources in the area. Similar to *res communis*, that is shared ownership,²⁶ under the CHM the usage of such resources is free and open to all states. Under the CHM principle, while the ownership is on the hand of mankind, the result of such exploitation cannot be enjoyed solely by the party who exploits the resources. Thus, under the CHM, the usage of resources would need approval from mankind, which in this context represented by the parties of the Convention. In this regard, relating to non-living resources in the area is represented by ISA. Since the usage of resources need approval from mankind, the result of the exploitation should also benefit mankind. The CHM is also known as *res communis humanitatis*, that is property of mankind.²⁷ Thus, the CHM can be seen as *restricted res communis*, which exists to guarantee the distribution of the results of resource exploitation and usage. Its existence was encouraged by the desire to achieve equal access to resource distribution. The CHM principle requires approval from the representative of mankind in order to use the said resources.

From the above discussion, it can be summarized that under the principle of the CHM, the resources belong to all states and thus it is open to all states. However, the exploitation of such resources needs approval from mankind and the result should also benefit all mankind. Such a result cannot be enjoyed solely by the party who exploits it, but should be distributed for the sake of mankind. Then what about the MGRs? The following section will analyse the possibility of the CHM application to the MGRs.

Applying the CHM to the MGRS

Before proceeding to the discussion on the possibility in applying the CHM to the MGRs, it is important to decide whether the bioprospecting process over the ABNJ can be categorized as lawful or unlawful activities. Although, some would claim that bioprospecting is unlawful activity, less research has been done on the conditions under which bioprospecting in the high seas really occurs.²⁸ In relation with bio-

²⁶ W.A. Qureshi, *Protecting the Common Heritage of Mankind beyond National Jurisdiction*, "Arizona Journal of International and Comparative Law" 2019, 36(1), pp. 81–111.

²⁷ N. Zorzin, *Privatization of a Common? A Focus on Exit Festival*, [in:] G. Tomka, V. Kisić, L. Veldpauset (eds.), *Dossier: Petrovaradin. Managing Historic Urban Landscapes*, Novi Sad 2019, pp. 108–111.

²⁸ A. Broggiato, *Marine Genetic Resources Beyond National Jurisdiction – Coordination and Harmonisation of Governance Regimes*, "Environmental Policy and Law" 2011, 41(1), pp. 35–52.

prospecting, it can be either focused on the resources used or the activity itself. As mentioned earlier, LOSC only recognizes living resources and resources. The later refers to non-living resources as envisages in Article 133 of LOSC. Whereas Article 2 of the CBD uses the term *biological resources*, which include 'genetic resources, organism or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.' Lawson argued that living resources envisages in the LOSC appears to 'probably include anything that is living and might be taxonomically classified.'²⁹ Thus, MGRs can be considered as living resources. Furthermore, unlike in the case of non-living resources, LOSC is silent on the legal regime of living resources in ABNJ. According to Article 136 and 137 of the LOSC, it only emphasized on the general obligation of the state to 'protect and preserve marine environment,' that is, to 'prevent, reduce and control pollution of the marine environment.'³⁰ Hence, the exploitation of MGRs should not harm marine environment. While the environmental impact of bioprospecting is still incomplete,³¹ it is argued that bioprospecting is unlikely to have a vital impact on the marine environment.

Another way to decide the legal regime of MGRs is to analyse it from activity point of view. Most relevant activities and/or freedom on high seas relating to bioprospecting are fishing and scientific research. However, it is questionable whether the bioprospecting can either be considered as fishing or marine scientific research. While LOSC is silent on the definition of fishing, it can be literally defined as 'harvesting fishes for commercial uses.'³² It is not usual to fish for microorganisms; and since, for instance, bacteria in deep waters are collected in a way that is not generally considered as harvesting, thus 'bioprospecting' differs from 'fishing.' So, MGRs can be seen as living resources other than fish. It even more complex than biodiversity. It is the result of the extraction of biological resources.

Furthermore, Article 87 of LOSC only uses the term *scientific research*, it is submitted that it refers to 'marine scientific research,'³³ since Article 240 of LOSC clearly uses the term of marine scientific research. The term *research* can be defined as 'systematic investigation into and study of materials and sources in order to establish

²⁹ Ch. Lawson, *Regulating Genetic Resources: Access and Benefit Sharing in International Law, Intellectual Property and the Environment*, Cheltenham–Northampton, MA 2012.

³⁰ R.A. Barnes, *Entitlement to Marine Living Resources in Areas Beyond National Jurisdiction*, [in:] E.J. Molenaar, A.G. Oude Elferink (eds.), *The International Legal Regime of Areas Beyond National Jurisdiction: Current and Future Developments*, Leiden 2010, pp. 83–141.

³¹ E. Ramirez-Llodra et al., *Man and the Last Great Wilderness: Human Impact on the Deep Sea*, "PLoS ONE" 2011, 6(8), pp. 1–25.

³² *Oxford World Encyclopedia*, Philip's 2004.

³³ A. Jørem, M.W. Tvedt, op. cit.

facts and reach new conclusions.³⁴ Further research can be considered as scientific if it is 'based on or characterized by methods and principles of science.'³⁵ What if such activity resulted in commercially oriented research, like bioprospecting? During the negotiations of the Third United Nations Conferences on the Law of the Sea (UNCLOS III), two points of view emerged, which include commercially oriented research, such as bioprospecting and research for commercial purposes or labelled as resources exploitation rather than research. No agreement reached upon the inclusion of bioprospecting as marine scientific research. However, emphasized was made in relation with the obligation to conduct activities in high seas 'exclusively for peaceful purposes,' as provided in Article 240 of the LOSC. Another term for various research activities can be divided into two other groups, namely pure science and applied science, that is for commercial purposes.³⁶ While it is quite complicated to decide whether bioprospecting can be seen as pure science or applied science (in this case commercially oriented research), United Nations Secretary-General (2005) points out:

In most cases, genetic resources are collected and analysed as part of scientific research projects, in the context of partnerships between scientific institutions and industry. It is only at a later stage that knowledge, information and useful materials extracted from such resources enter a commercial stage. The difference between scientific research and bioprospecting therefore seems to lie in the use of knowledge and results of such activities, rather than the practical nature of the activities themselves.

Thus, since it is difficult to distinguish between marine scientific research and bioprospecting in term of activities (because it usually occurs in a single process of scientific research), it would be better to look at how one uses the knowledge resulted from such activities. However, if there are concerns related to the rights and obligations during the process of bioprospecting, the distinction should have been determined at an earlier stage, which lies in the intentions of the parties involved. Yet, the intention may change at the later stage, depending on the progress of such scientific research. The research was frequently intended to be pure research at the beginning, but the intention changed in the middle of process based on a potential commercial aspect. Thus, the determination of a legal regime for the MGRs as a result of the bioprospecting process is crucial.

³⁴ A. Stevenson, *Oxford Dictionary of English (Oxford Reference Online Edition)*, Oxford 2010.

³⁵ *Ibidem*.

³⁶ A. Jørem, M.W. Tvedt, *op. cit.*

While this article argues that MGRs can be considered as living resources other than fish, which is found in ABNJ, further question is whether the CHM can be applied to MGRs. As discussed earlier, MGRs are very useful for mankind, so it is possible that the regime of the CHM can be applied to MGRs. If so, then upon the MGRs applies shared ownership; and the exploitation of MGRs needs the approval of mankind. Furthermore, the results of such exploitation cannot be enjoyed solely by a state or states which conduct bioprospecting to get the MGRs. In such, it is submitted that if the regime of the CHM is applied to MGRs, it needs further arrangement as to the establishment of organ like ISA, as the representatives of mankind. In addition to this since the result of the exploitation cannot be enjoyed solely by certain states, it needs further arrangement for so-called access to benefit sharing as well as transfer of technology.

Coming back to the provisions of the CBD, while it provides access to benefit sharing (ABS), unfortunately it only applies in waters within national jurisdiction. Thus, at the beginning of 2023, the United Nation General Assembly (UNGA) produce a draft agreement regulated marine biodiversity found in ABNJ, named Draft 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.³⁷ This draft was further adopted in July 2023 and includes MGRs as marine biological diversity and defines MGRs as 'any material of marine plant, animal, microbial or other origin containing functional units of heredity of actual or potential value.' Article 2 of the 2023 BBNJ Agreement sets out the objective of the Agreement as follows:

The objective of this Agreement is to ensure the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, for the present and in the long term, through effective implementation of the relevant provisions of the Convention and further international cooperation and coordination.

Furthermore, Article 5 of the 2023 BBNJ Agreement also lists principles and approaches which should guide the implementation of the Agreement. Such a principle includes the principle of the common heritage of humankind (CHH), the principle of equity, and the fair and equitable sharing of benefits. Since the MGRs involve the process of biodiversity, which requires human intervention, the exploitation of MGRs can be classified as invention rather than discovery and thus

³⁷ Draft 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 (2023).

it might involve the issue of intellectual property rights.³⁸ However, the debate continues on the discourse of whether such invention, which derives from naturally genetic materials can be classified as new and inventive? There are differing perspectives between developed and developing states on this matter. While developed states allow biological organisms in their natural form acquires patent, certain developing states consider this as unpatentable.

While the CHH regime seems to settle the debate on regimes applicable to MGRs, the BBNJ agreement, unfortunately only rely on states' cooperation with regard to activities conducted over the MGRs found in the ABNJ. It is argued that states' capacity differs from each other. While the BBNJ Agreement adopts Digital Sequence Information (DSI) to alert states parties on the activities relating to MGRs, it is lacking on the monitoring authority of such activities. In addition to this, Article 11 of the Draft Agreement provides the obligation of states to share benefit as well as information arising from the activities over the MGRs; and for this purpose, the access and benefit sharing committee is established under Article 11 bis 2023 BBNJ Draft Agreement. However, the availability of this access and benefit sharing committee can be done through clearing-house mechanism, which requires states to prepare their legislative, administrative as well as policy measures. At this point, it is questionable whether this mechanism will be effective, since the capacity of states differs. This way, states may be reluctant to ratify the 2023 BBNJ Draft Agreement. Thus, Amri argues that for Indonesia, it should prepare this as soon as possible, since the ratification process requires some time since analyses is needed to consider advantage and disadvantage of Indonesia's decision whether to bind itself to the 2023 BBNJ Draft Agreement.³⁹

Conclusion

In the absence of LOSC's provisions concerning the legal regimes of MGRs found in ABNJ, debate on this matter emerged on whether the freedom of high seas or CHM principle can be applied over the MGRs. It is argued that while the BBNJ Agreement finally adopts the regime of CHH, that can be applied to MGRs, it needs further arrangement as to the establishment of organ like ISA, as the representatives of mankind. In addition to this, since the result of the exploitation

³⁸ For further discussion on this matter, see also: G. Nurbintoro, H.B. Nugroho, *Biodiversity Beyond National Jurisdiction: Current Debate and Indonesia's Interest*, "Indonesian Law Review" 2016, 6(3), pp. 283–306.

³⁹ A.A. Amri, *Perjanjian Konservasi Keanekaragaman Hayati Laut Dan Kepentingan Indonesia*, 30 June 2023, <https://www.kompas.id/baca/opini/2023/06/29/perjanjian-konservasi-keanekaragaman-hayati-laut-dan-kepentingan-indonesia> (access: 3.03.2023).

cannot be enjoyed solely by certain states, it needs further arrangement for the so-called Access to Benefit Sharing as well as transfer of technology.

While in the 2023 BBNJ Agreement seems to encompass such an arrangement, more efforts are needed, especially the political will of states to equip themselves in order to enjoy the benefit from activities over the MGRs in ABNJ. Different levels of the capacity of states should also be considered in this matter. It is feared that states who do not have sufficient capacity only can witness the exploitation of MGRs without being able to enjoy the benefits of MGRs.

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