

## **The Legal Lacunae of UNCLOS and CBD to The Access and Benefit Sharing of Marine Genetic Resources in The Area Beyond National Jurisdiction**

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### **ABSTRACT**

**Keywords:**

*Access and Benefit Sharing; Area Beyond National Jurisdiction; Legal Lacunae; Marine Genetic Resources*

*This article aims to comprehensively analyze the legal lacunae of UNCLOS and CBD in regulating the utilization and benefit sharing of marine genetic resources (MGRS) in the area beyond national jurisdiction (ABNJ). The study argues that the existence of international legal instruments, such as the UNCLOS and the CBD fail to regulate the legal status of MGRS in the ABNJ as well as to regulate access and benefit sharing. The debate arises in the legal status of MGRS in the ABNJ will be applied the regime of common heritage of mankind or freedom of the sea, because both regimes have different legal implication. This study is a normative juridical research by applying conceptual and statutory approaches. The result of the study found that it is essential to address the legal lacunae in order to maintain equitable benefit sharing in the utilization of MGRS in the ABNJ. Therefore, in order to overcome the legal lacunae of UNCLOS and CBD, it is urgent to create new internationally binding Agreement..*

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### **1. INTRODUCTION**

Area beyond national jurisdiction (hereinafter ABNJ) consists of the high seas and seabed area. While the part of the sea which become the sovereignty of a state is territorial sea and the sovereign right of a state are contiguous zone, economic exclusive zone and continental shelf. The ABNJ is adjacent with the economic exclusive zone and it cannot be claimed by a state as its sovereign right. Thus, there is no sole responsibility of individual state to manage and protect those areas in the ABNJ. Entirely, the ABNJ covers 40 percent of the surface of our planet, embracing 64 percent of the surface of the oceans and nearly 95 percent of its volume.<sup>1</sup> Marine genetic resources (hereinafter MGRs) in the ABNJ are genetic resources located in the high seas and in the Seabed

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<sup>1</sup> Global Environment Facility, "Areas Beyond National Jurisdiction," [www.thegef.org](http://www.thegef.org), 2022, <https://www.thegef.org/what-we-do/topics/areas-beyond-national-jurisdiction>.

Areas.<sup>2</sup> In the last decade, MGRs in the ABNJ have increasingly attracted international attention, because they have very high potential economic value as well as humanism values, because the MGRs can be used as raw materials for pharmaceutical products for deadly diseases such as cancer, Azimer and HIV as well as for cosmetics.<sup>3</sup> Developed countries are competing to carry out bioprospecting to obtain the necessary genetic resources.<sup>4</sup> According to experts, bioprospecting is a public or academic research institution which carried out the process of research which has an intention to extract a sample to be developed by other institutions, such a pharmaceutical company to gain economic benefit. In practice, only developed countries carry out bioprospecting in the ABNJ, because they have the human resources capital and technology, while developing countries even have the right to do bioprospecting but they do not have the capability to perform their right due to the lack of technology, human resources and capital. Hence, they are just spectators.<sup>5</sup>

The practice of bioprospecting in the ABNJ conducted by developed countries causes unfair benefit sharing for developing countries concerning the access and benefit sharing of MGRs in the ABNJ.<sup>6</sup> Thus, in order to create equitable access and benefit sharing between developed and developing countries, it is imperative to adopt new regulation to address the issue. Since 2017, an agreement has been initiated to adopt a new legal instrument that is legally binding to regulate access and benefit sharing of MGNJ in the ABNJ.<sup>7</sup> Finally on March 2022, an Agreement Under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (hereinafter the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ) was adopted. However, the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ cannot immediately come into force. According to the Vienna Convention 1969 the international Agreement will come into force after the requirement has been fulfilled that may take a long time to accomplish the requirement,

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<sup>2</sup> Alex D. Rogers et al., "Marine Genetic Resources in Areas Beyond National Jurisdiction: Promoting Marine Scientific Research and Enabling Equitable Benefit Sharing," *Marine Affairs, Policy and Practice Reviews* 8, no. 2 (2021): 1–22.

<sup>3</sup> Mar Campins Eritja, "Bio-Prospecting in the Arctic: An Overview of the Interaction Between the Rights of Indigenous Peoples and Access and Benefit Sharing," *Boston College Environmental Affairs Law Review* 44, no. 2 (2017): 223.

<sup>4</sup> Wales Erica, "Marine Genetic Resources: The Clash Between Patent Law and Marine Law," *Natural Resources & Environment* 29, no. Winter (2015): 44–47.

<sup>5</sup> Cymie R. Payne, "New Law for The High Seas," *Berkeley Journal of International Law* 47, no. 1 (2019): 345–68, <https://doi.org/10.15779/Z38RX93D7B>.

<sup>6</sup> Abhaya Ganashree, "Who Owns Ocean Biodiversity?: The Legal Status and Role of Patents as a Means to Achieve Equitable Distribution of Benefits," *Case W. Res. J. Int'l L* 53, no. 1 (2021): 197–236, <https://doi.org/10.2139/ssrn.3740038>.

<sup>7</sup> Chandler J Farris, "Progress Towards The New International Legal Framework For Protecting Biodiversity In Areas Beyond National Jurisdiction," *NCJ Int'l L* 46, no. 1 (2021): 157–80.

such as the 1982 Convention on the Law of the Sea was adopted in 1982 but the UNCLOS came into force in 1994 after the 60<sup>th</sup> state ratified the Convention.<sup>8</sup>

While waiting the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ comes into force, presently the international community enacted the United Nations Convention on the Law of the Sea (hereinafter UNCLOS) and the Convention of Biological Diversity (hereinafter CBD) to regulate the MGRS in the ABNJ. UNCLOS which represented a milestone in the history of ocean governance recognized two maritime zones in the ABNJ namely the High Seas containing the water column and the Area which covers the seabed, ocean floor and subsoil and its mineral resources<sup>9</sup> UNCLOS regulates the high seas regime that employs various freedoms such as fishing, overflight, and navigation which are stipulated in Chapter VII based on the principle of freedom of the high seas and the Seabed Area regime in Chapter XI which employs common heritage of mankind (hereinafter CHM) at ABNJ.<sup>10</sup>

Thus, the question is whether MGRs are appropriate to be included in the regime of the CHM or included in the freedom of the high seas or does the MGRs become the scope of CBD need to be addressed. The CBD only regulates MGRs that are in the jurisdiction of the state. While for MGRs that are in the ABNJ, the CBD in Article 4 (b) only recommend Member States to cooperate, even with the Regional Fishery Organizations (RFMOs) but there are no specific rules on how to regulate the cooperation. The International Seabed Authority has function to control and supervise over the seabed, however presently there is no such authority to regulate MGRs in the in the water volume of the high seas and the surface of the seabed area. Therefore, it is reasonable when the adoption of new legally binding international agreement under UNCLOS could be focused on regulating the access and equitable benefit sharing in the water volume of high seas and the surface of the seabed area to fill the gap.

One of the phantastic utilizations of MGRs at ABNJ is the discovery of "the green fluorescent protein (GFP), from the bioluminescent *Aequorea victoria* jellyfish."<sup>11</sup> Osamu Shimomura, Martin Chalfie and Roger Y. Tsien received the Nobel Prize for their successful invention in developing GFP to eliminate cancer growth, Alzheimer's disease (a disease that attacks the brain), and also to prevent HIV transmission. Based on bioprospecting conducted by developed countries, more than 150 MGRs have been found that can be used to treat and control the spread of HIV and also for cosmetic ingredients.

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<sup>8</sup> Aaron M Riggio, "Giving Teeth To The Tiger: How The South China Sea Crisis Demonstrates The Need For Revision To The Law Of The Sea," *Military Law Review* 224 (2016): 597–638.

<sup>9</sup> Hugh Govan, "The Pacific Islands and Biodiversity Beyond National Jurisdiction Briefing Note," 2014, <https://doi.org/10.13140/RG.2.1.1247.9527>.

<sup>10</sup> Eric A. Posner and Alan O. Sykes, "Economic Foundations of the Law Of the Sea," *American Journal of International Law* 104, no. 4 (2010): 569–96, <https://doi.org/10.5305/amerjintelaw.104.4.0569>.

<sup>11</sup> Eve Heafey, "Access and Benefit Sharing of Marine Genetic Resources from Areas beyond National Jurisdiction: Intellectual Property--Friend, Not Foe," *Chicago Journal of International Law* 14, no. 2 (2014): 493–523, <http://chicagounbound.uchicago.edu/cjil/vol14/iss2/5>.

When those results of the bioprospecting are used to create pharmaceutical products and protected by patent as one of the intellectual property rights protection will cause the products economically very valuable. Hence, the economic benefit in practice is only comes to the companies without any obligations to share the benefit to other states, because they found the MGRs in the ABNJ where the freedom of the sea is employed.

The aim of this research is to comprehensively scrutinizes the legal lacunae of UNCLOS and CBD in regulating the access and equitable benefit sharing of MGRs in the ABNJ. The paper consists of 4 parts, including Introduction and Conclusion. The paper consists of 4 parts. Part one is Introduction. Part two is research method. Part three result and discussion regarding the access and equitable benefit sharing of MGRs in the ABNJ and the legal lacunae of UNCLOS and CBD to regulate access and equitable benefit sharing of MGRs in the ABNJ. Finally, Part four (Conclusion) will provides recommendations to enhance the implementation of UNCLOS and CBD in the transition period while the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ has not comes into force.

## **2. RESEARCH METHOD**

This is normative juridical research which uses secondary data consisting of primary legal material, secondary legal material and tertiary legal material.<sup>12</sup> Normatif juridical is conducted by examining and interpreting theoretical matters concerning to the principles, conceptions doctrines and legal norms related to the legal instruments to protect marine biodiversity in the area beyond national jurisdiction of state. Then, the approaches employed in the research are conceptual approach and statutory approach. The conceptual approach is used to understand the concept of legal protection to marine biodiversity in the area beyond national jurisdiction of state. On the other hand, the statutory approach<sup>13</sup> is employed to examine the legal instruments to protect marine biodiversity in the area beyond national jurisdiction of state as well as to evaluate whether the existence of UNCLOS and other international instruments can be used to protect marine biodiversity in the area beyond national jurisdiction.

## **3. RESULTS AND DISCUSSION**

### **3.1. Access and Benefit Sharing**

Access and benefit sharing of MGRs in the ABNJ before the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ comes into force is based on the existence of international instruments such, as CBD, Nagoya

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<sup>12</sup> Soerjono Soekanto and Sri Mamuji, *Penelitian Hukum Normatif Suatu Tinjauan Singkat*, 2011.

<sup>13</sup> Johnny Ibrahim, *Teori Dan Metodologi Penelitian Hukum Normatif*, Cetakan II (Malang: Bayumedia Publishing, 2007).

protocol and UNCLOS. Access and benefit-sharing (ABS) is a system under public international law that aims to fairly distribute benefits arising from the utilization of genetic resources between the users of genetic resources (such as universities and biotech companies) and provider states.<sup>14</sup> The Access and benefit-sharing refers to the way in which genetic resources may be accessed, and how users and providers reach agreement on fair and equitable sharing of the benefits that might result from their use.<sup>15</sup> The CBD and Nagoya Protocol as the implementation of the CBD Convention only regulate access and benefit sharing for genetic resources which are available in the national jurisdiction of state including the MGRs. Thus, both of them do not encompass the access and benefit sharing of MGRs in the ABNJ.

Access and benefit sharing of MGRs in the ABNJ is a new issue that needs to be addressed. The Nagoya Protocol was adopted to clarify and strengthen the benefit-sharing that are generally regulated in Article 15 of the CBD.<sup>16</sup> In order to guarantee that the benefit sharing conducted in fair and equitable manner, the Nagoya Protocol establishes a transnational Access and Benefit-Sharing Clearing House (ABS Clearing House).<sup>17</sup> Article 15 of the CBD and Article 5 of the Nagoya Protocol requires mutually agreed term in order to maintain the fair and equitable sharing among the user and the provider states. Infact, there is a problem related to access and benefit sharing for MGRs located in the ABNJ because, it cannot determine who are the provider states? To whom that the user wants to ask prior informed consent (PIC)? Thus in Practice, the developed countries who have already accessed and exercised bioprospecting to the MGRs in the ABNJ using freedom of the sea that is stipulated in Article 87 UNCLOS as the justification.<sup>18</sup>

Infact, it is important to look for the legal basis of access and benefit sharing and what is the definition of both of them. According to Article 5 (1) of the Nagoya Protocol states that :

“In accordance with Article 15, paragraphs 3 and 7 of the Convention, benefits arising from the utilization of genetic resources as well as subsequent applications

<sup>14</sup> Angelica Bonfanti and Seline Trevisanut, “TRIPS on the High Seas: Intellectual Property Rights on Marine Genetic Resources,” *Brooklyn Journal of International Law* 37, no. 1 (2011): 187–231.

<sup>15</sup> Evanson Chege Kamau, “Transformations in International Law on Access To Genetic Resources and Benefit-Sharing and Domestic Implementation. Introduction, Synthesis, Observations, Recommendations and Conclusions,” *IUS Gentium* 95 (2022): 3–41.

<sup>16</sup> Oluwatobiloba Moody, “Addressing Biopiracy through an Access and Benefit Sharing Regime-Complex: In Search of Effective Protection for Traditional Knowledge Associated with Genetic Resources,” *Asper Review of International Business and Trade Law* 16 (2016): 231–78.

<sup>17</sup> Mariko Kageyama, “Bio-Property Contracts in a New Ecosystem: Genetic Resources Access and Benefit Sharing,” *Washington Journal of Law, Technology & Arts* 13, no. 2 (2018): 109–40, [https://heinonline-org.libraryproxy.griffith.edu.au/HOL/Page?public=true&handle=hein.journals/washjolta13&div=9&start\\_page=109&collection=journals&set\\_as\\_cursor=0&men\\_tab=srchresults](https://heinonline-org.libraryproxy.griffith.edu.au/HOL/Page?public=true&handle=hein.journals/washjolta13&div=9&start_page=109&collection=journals&set_as_cursor=0&men_tab=srchresults).

<sup>18</sup> Efthymios Papastavridis, “The Negotiations for A New Implementing Agreement under the Un Convention on the Law of the Sea Concerning Marine Biodiversity,” *International and Comparative Law Quarterly* 69, no. 3 (2020): 585–610, <https://doi.org/10.1017/S0020589320000202>.

and commercialization shall be shared in a fair and equitable way with the Party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources in accordance with the Convention. Such sharing shall be upon mutually agreed terms”.

Based on this article, it can be concluded that the sharing of benefit regarding the utilization of the genetic resources also includes the commercialization of the Genetic resources should be shared in fair and equitable way with the Providing Party. For instance the practice of benefit sharing that has been conducted that the user and provider has to follow the mechanism of the access and benefit sharing of the utilization of genetic resources. First that the user has conduct Prior Informed Consent (PIC) to be addressed to the provider states. After the provider states agreed that will be continued by Mutually Agreed Term which mention the purpose of the access and the research which also includes the benefit sharing of commercial utilization of the genetic resources. In Indonesia, the access and benefit sharing has been conducted by The Sakata Seed Corp concerning the wild flowers come from the high attitudes that can be found in the bushes among other wild plants and weed based on the research can be created the new variety of wild flowers by using biotechnology that enable the flowers to be planted in the subtropical countries in the spring and summer.<sup>19</sup>

Article 5 (3) of the Nagoya Protocol regulates further the benefit sharing. It stipulates that “Benefits may include monetary and non-monetary benefits, including but not limited to those listed in the Annex”. Thus, the benefit sharing that can be performed by the user and provider based on the mutually agreed term which include monetary and non monetary are stipulated in the Annex.

a. Examples of Monetary benefits such as:

- 1) Access fees/fee per sample collected or otherwise acquired;
- 2) Up-front payments;
- 3) Milestone payments;
- 4) Payment of royalties;
- 5) Licence fees in case of commercialization;
- 6) Special fees to be paid to trust funds supporting conservation and sustainable use of biodiversity

b. Examples of Non-monetary benefits may include, but not be limited to:

- 1) Sharing of research and development results;

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<sup>19</sup> Ani Mardiasuti, “Implementation of Access and Benefit Sharing in Indonesia: Review and Case Studies”, *Jurnal Manajemen Hutan Tropika* 25 (3 ), 35-43 ( April 2019): 41. DOI: 10.7226/jtfm.5.1.35

- 2) Collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, here possible in the Party providing genetic resources;
- 3) Participation in product development;
- 4) Collaboration, cooperation and contribution in education and training;
- 5) Strengthening capacities for technology transfer;
- 6) Institutional capacity

Hence the benefit sharing that have been practiced by the Contracting Parties of Nagoya Protocol as the Implementing Agreement of Article 15 CBD covers two aspect that are important for the interest of the user and the provider states.<sup>20</sup> It is bear in mind that the non-monetary benefit sharing in the long run will enhance the capacity building of the developing countries to be part of the actors who are able to take advantage of the MGRs in the ABNJ.

In the absence of national jurisdiction of states and national law that can be applicable for the access and benefit sharing of MGRs in the ABNJ, Article 10 of the Nagoya Protocol may provide a solution to address the problem. Where Prior Informed Consent (PIC) is not possible to obtain from the provider states. Hence, the Nagoya Protocol mandates to the Member States to establish “global multilateral benefit sharing mechanism.”<sup>21</sup> Article 10 Nagoya Protocol stipulates :

“Parties shall consider the need for and modalities of a global multilateral benefit sharing mechanism to address the fair and equitable sharing of benefits derived from the utilization of genetic resources and traditional knowledge associated with genetic resources that occur in transboundary situations or for which it is not possible to grant or obtain prior informed consent. The benefits shared by users of genetic resources and traditional knowledge associated with genetic resources through this mechanism shall be used to support the conservation of biological diversity and the sustainable use of its components globally”.

It seems that Article 10 of Nagoya Protocol may be used as a legal basis to regulate the access and benefit sharing of MGRs in the ABNJ, however, it is still questionable. As an evidence that the mechanism to have PIC has been conducted by the user of genetic resources, the national relevant authority will issue a certificate which explains that a genetic resource has been obtained, accessed, and used prior consent from the competent

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<sup>20</sup> Mark Eccleston-Turner and Michelle Rourke, “Arguments Against the Inequitable Distribution of Vaccines Using the Access and Benefit Sharing Transaction,” *International and Comparative Law Quarterly* 70, no. 4 (2021): 825–58, <https://doi.org/10.1017/S0020589321000294>.

<sup>21</sup> Christopher HC Lyal, “Digital Sequence Information On Genetic Resources And The Convention On Biological Diversity,” *IUS Gentium* 95 (2022): 589–615.

national authority who has the jurisdiction over the genetic resource.<sup>22</sup> In the case of PIC in the ABNJ will raise a question who is going to be the the institutional body to issue certificate to guarantee that the mechanism to obtain PIC has been carried out? Which states that becoe the national authority, since the activities conducted in the ABNJ ? There will be no states can claim sovereignty and jurisdiction in the water volume in ABNJ, and the freedom of sea is applicable in the ABNJ.<sup>23</sup>

Therefore, in the case of MGRs in the ABNJ, referring to the wording of Article 10 Nagoya Protocol which mentions "...it is not possible to grant or obtain prior informed consent..." cannot be implied that the global multilateral mechanism includes MGRs within ABNJ. Article 10 of the Nagoya Protocol appears to fill the gap identified in the UNCLOS, However, the Preamble of the Nagoya Protocol confirms that the application of the global multilateral mechanism is limited to the sovereign rights of States over their natural resources and according to the provisions of the Convention. Hence, it would be difficult to interpret the Nagoya Protocol as the implementation of CBD will be applied beyond the scope of CBD, because the scope of CBD as stated in Article 4 is only limited to national jurisdiction of states.

### **3.2. The Legal Lacuna of CBD Concerning Access and Benefit Sharing of MGRs in the ABNJ**

Access and benefit sharing MGRs in the ABNJ is not a simple matter to be addressed. ABNJ is outside the exclusive economic zone of coastal states. The access to and benefit sharing and the conservation of the MGRs in the ABNJ is not directly regulated in the CBD, since the application of CBD is only limited to the area in the national jurisdiction of state including the MGRS which are available in the territorial sea, contigious Zone, Economic Exclusive zone and in the continental shelf , thus, the jurisdiction of CBD does not cover the MGRS in the ABNJ. The adoption of the CBD in 1992 established a broad framework for Contracting Parties of CBD to implement the conservatioan and sustainable use of biodiversity in the national jurisdiction of the Member States. Besides that, the CBD also mandates the Member States to perform fair and equitable sharing of benefits arising from the use of genetic resources. The legal instruments that can be used to guarantee the benefit sharing, such as PIC and mutually agreed terms (hereinafter MAT). However, the mechanism of PIC and MAT are not regulated in detailed in the CBD but those two mechanisms are regulated in the Nagoya

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<sup>22</sup> Kuei-Jung Ni, "Legal Aspects of Prior Informed Consent on Access to Genetic Resources: An Analysis of Global Lawmaking and Local Implementation Toward an Optimal Normative Construction," *Vanderbilt Journal of Transnational Law* 42, no. 1 (2009): 227–78, <https://doi.org/10.2139/ssrn.1843070>.

<sup>23</sup> Sabrina Hasan, "Considering The Concept of the Ecological Civilization For Conservation And Sustainable Use of Marine Biodiversity Under the Umbrella of the Biodiversity Beyond National Jurisdiction Instrument," *Environmental Law Review* 23, no. 3 (2012): 248–62, <https://doi.org/10.1177/14614529211032035>.



Protocol comprehensively limited to the genetic resources which are available in the national jurisdiction of states.

The obligation to conduct conservation and sustainable use of the genetic resources in general is regulated in the CBD. There is no separation between genetic resources which is available in the land and in the sea. This is in line with the objective of the CBD. Indeed, the objective of CBD is stipulated in Article 1, namely:

“The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.”

Based on the objective of the CBD clearly does not include the MGRs located in the ABNJ, however, as a legal framework, CBD provides the basic rules that can be used to impose obligations of the Member States to conduct benefit sharing and the utilization of the genetic resources as well as access to genetic resources without mentioning the location of the genetic resources. Related to the access and benefit sharing of MGRs in the ABNJ raises question whether the CBD can be used as a legal basis to regulate this matter. The CBD in Article 15 only regulates the access and benefit sharing of biodiversity in the national jurisdiction of states, and the national regulation will be applied. Article 15 of CBD states “Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation”. Thus, Article 15 of CBD clearly only regulates the access of genetic resources which is exclusively in the national jurisdiction of states.

However, if we look at the scope and the jurisdiction of the CBD, it can be interpreted that the CBD may be applicable for the MGRS in the ABNJ which is stated in Article 4 (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”. Hence, if the process and activities of utilizing MGRS cause impacts in the ABNJ, the CBD obliges the Contracting Parties to carry out cooperation. The duty to cooperate among the member states stipulated in Article 5 of the CBD :

“Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

The obligation to cooperate is not only limited among the Contracting Parties of CBD in respect of the conservation and sustainable use of biological diversity in the ABNJ, but the cooperation may be performed with the Regional Organisation, such as Regional Fishery Management Organization (hereinafter RFMO). However, this obligation to cooperate has not yet regulated in detailed in the CBD, it needs further regulation.

Nonetheless, to find out whether CBD has a legal lacunae or not in regulating the utilization and benefit sharing of MGRs in ABNJ, it is necessary to know what is MGRs. The CBD provides a different definition between genetic material and genetic resources. Genetic Resources according to Article 2 of the CBD states "Genetic material" means any material of plant, animal, microbial or other origin containing functional units of heredity, while "Genetic resources" means genetic material of actual or potential value. The definition does not explicitly mention genetic resources found in ABNJ, but is limited to genetic resources located in the national jurisdiction of a state. The CBD only covers MGRs that are in the territorial sea, continental shelf, contiguous zone and exclusive economic zone (EEZ).

On the other hand, the definition of MGRs in the ABNJ can be found in the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ. As a new International Legally Binding Agreement defines MGRs in ABNJ as follows: "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". When it is compared to the definitions of MGRs contained in the CBD and those contained in the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ, there are only slight differences, namely regarding the area of application, but this has very different legal implications. Hence, it can be concluded that the legal lacunae of CBD in the utilization and benefit sharing of MGRS in the ABNJ is the scope of implementation which is limited in the national jurisdiction of states.

Infact, CBD as an international agreement that regulates the utilization of genetic resources and equitable distribution of benefits has been followed up with the adoption of the Nagoya Protocol in 2010 which regulates more comprehensively access to and benefit sharing of the utilization of MGRs but it is only limited at the national jurisdiction of a state, including genetic resources. Furthermore, the second legal lacunae of CBD is related to the access to genetic resources and benefit sharing of MGRs in the ABNJ which is not comprehensively addressed by the CBD due to the limitation of scope and also there is no legal mechanism stipulated in the CBD.

It can be submitted that the CBD and the Nagoya Protocol which aimed to regulate more detailed regulation concerning access and benefit sharing of genetic

resources including the MGRs is only limited to the MGRs in the national jurisdiction of states. Hence, it is essential to adopt a new legally binding international instrument such as an Agreement Under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction.

### **3.3. The Legal Lacunae of UNCLOS in the Utilization of MGRS in the Area Beyond National Jurisdiction**

Fraud is a process of deceiving and deceiving with the intent to mislead or outsmart others in seeking profits and interests of themselves and their groups. Juridically in the perspective of the Criminal Code, fraud is a crime that harms other people, and the perpetrator can be punished.<sup>24</sup> Meanwhile, in the formulation of Article 378 of the Criminal Code, fraud is the act of a person by deceit in compiling lies, false names, and untrue circumstances with the intention of benefiting oneself with no rights. A series of lies is a sentence that is structured in such a way that it is a story of something that seems to be true.<sup>25</sup>

In order to analyse whether UNCLOS has such kind of legal lacunae in regulating the MGRs in the ABNJ, it can be traced back to the history and the provisions of UNCLOS. The adoption of UNCLOS in the Year of 1982 and comes into force in 1994 is an important Convention that regulates many kinds of activities carried out in the sea including the Seabed Area.<sup>26</sup> The development of technology at that time has not been able to detect the functions and values of the MGRs in the ABNJ for human being, thus, the UNCLOS only regulates the natural resources which are available in the seabed area and Member States did not regulate the MGRs which are available in the water volume or touch upon the Seabed Area. According to UNCLOS, ABNJ consists of seabed area and the water volume beyond the EEZ. The Seabed Area and its resources are classified as the common heritage of mankind (hereinafter CHM).<sup>27</sup> This means that the resources available in the seabed area can be utilized by every single state without any rights to claim sovereignty over the Seabed Area.

<sup>24</sup> Hafifah Putri, "Jurnal Ilmiah FENOMENA, Volume XIV, Nomor 2, November 2016: 1554-1566" XIV, no. November (2016): 1554-66.

<sup>25</sup> Anton Hendrik S., "Modus Operandi Dan Problematika Penanggulangan Tindak Pidana Penipuan Daring," *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada* 31, no. 1 (2019): 59, <https://doi.org/10.22146/jmh.34786>.

<sup>26</sup> David Hartley, "Guarding the Final Frontier: The Future Regulations of the International Seabed Authority," *Temple International & Comparative Law Journal* 26, no. 2 (2012): 335-66, [http://heinonline.org/HOL/Page?handle=hein.journals/tclj26&id=353&div=&collection=journals%5Cnhttp://heinonline.org/HOL/Page?handle=hein.journals/tclj26&div=16&g\\_sent=1&collection=journals](http://heinonline.org/HOL/Page?handle=hein.journals/tclj26&id=353&div=&collection=journals%5Cnhttp://heinonline.org/HOL/Page?handle=hein.journals/tclj26&div=16&g_sent=1&collection=journals).

<sup>27</sup> Isabel Feichtner, "Sharing the Riches of the Sea: The Redistributive and Fiscal Dimension of Deep Seabed Exploitation," *European Journal of International Law* 30, no. 2 (2019): 601-33, <https://doi.org/10.1093/ejil/chz022>.

### 3.3.1. *The Legal Implication of Common Heritage of Mankind*

Based on UNCLOS Part XI, the CHM is applicable to the seabed area and its subsoil beyond areas of national jurisdiction as well as its mineral resources within the Area. UNCLOS never uses the terminology of ABNJ to entitle the Area. However in the development of activities in the sea, the international community introduces new terminology which is actually the same subject matter, namely the Area. Article 136 and 137 of UNCLOS determine that no state shall claim sovereign rights over these resources and that activities in the Area have to be carried out for the benefit of mankind.<sup>28</sup> These activities which conducted in the area are exploration and exploitation of the mineral resources. The Institutional Body established by UNCLOS is International Seabed Authority (ISA) has the authority to organize and control activities in the Area as well as to determine the equitable sharing of monetary benefits and non monetary benefits derived from these activities.

The legal implication of CHM means that the benefits arise from from the utilization of the resources have to be shared to the other states and the interested Party who conducted exploration and exploitation of the natural resources in the Seabed Area. The Parties that conducted exploration and exploitation in the area have to obtain a lisencc from the the International Seabed Authority.<sup>29</sup> It can be concluded that International Seabed Authority (hereinafter ISA) as the trustee for the resources which is available in the Seabed Area. The ISA only grants lisencc to the Party who fulfil the requirements and have benefit for the whole human being. Furthermore, the benefits that has been obtained from the exploitation of natural resources in the Seabed Area has to be shared fairly among all nations.

Indeed, what is the legal status of MGRs in the ABNJ which include the seabed area and the water volume beyond the EEZ ? Can the MGRs be classified as CHM or that the MGRs will be classified as share resources that will be governed by freedom of the seas as stipulated in Article 87 UNCLOS. The location of the MGRs which may possible in the volume of the water or located in the bottom of the sea has not yet been regulated by UNCLOS. It can be proven that the seabed area which exercises the CHM does not include the MGRs which exist in the volume of the water or touch upon in the seabed area, because there is no terminology of MGRs is available in the UNCLOS. Research and development concerning MGRs in the ABNJ always developed in order to utilise the MGRs which may potentially have various function for the human health and cosmetic. Marine scientific research concerning MGRs is not only conducted in the sovereign right

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<sup>28</sup> Karin Mickelson, "Common Heritage of Mankind as a Limit to Exploitation of the Global Commons," *European Journal of International Law* 30, no. 2 (2019): 635–63, <https://doi.org/10.1093/ejil/chz023>.

<sup>29</sup> Aguon Julian and Hunter Julie, "Second Wave Due Diligence: The Case For Incorporating Free, Prior, and Informed Consent into The Deep Sea Mining Regulatory Regime," *Stan. Envtl. LJ* 38, no. Desember (2018): 3–55.

of the coastal states but it also conducted in the ABNJ.<sup>30</sup> In the absence of international legally binding instrument, developed countries initiate bioprospecting of MGRs based on freedom of the sea, namely every state has freedom to carry out research in the high sea as part of ABNJ including the MGRs and the principle “first come first served is applicable”.<sup>31</sup> Consequently, there is no obligation to share the result of bioprospecting.

When UNCLOS was negotiated, the only resources in the Area that were taken into account were the mineral resources due to the economic values of the resources. While the MGRs were not included in the term of mineral resources and states which get involved in the negotiation have not yet any idea the potential economic values and humanity values of MGRs. In fact, the living resources have already existed since in the process of UNCLOS negotiation, but there are no rules applicable to the living resources. Article 133 UNCLOS defines resources as “all solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the seabed, including polymetallic nodules.” This circumscribed definition of the resources has led to a suggestion that the common heritage of mankind regime does not apply to MGRs, because the MGRs are not covered by the definition of resources.

### 3.3.2. *Freedom of the High Seas and the Benefit Sharing of MGRs in the ABNJ*

Articles 87 (1) UNCLOS stipulates that “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”. Thus, the freedom of the seas can be enjoyed by any states to exercise various kinds of activities including bioprospecting of MGRs in the ABNJ, because high seas is part of the ABNJ. Freedom of the sea includes the freedom of navigation, the freedom of overflight, the freedom of fishing and freedom of scientific research. However, “these freedoms are restricted, as these freedoms must be exercised with due regard for other states’ interests in their exercise of these same freedoms”. There is no prohibition to conduct bioprospecting in the high seas or in the surface of area, since all the states have the right to utilize the high seas and seabed area for peaceful purposes.

The legal status of MGRs based on UNCLOS is still uncertain. The debate regarding the legal status of MGRs can be classified into two different philosophical backgrounds. Can we classify MGRs under the Freedom of high seas or MGRs in the regime of CHM? The research on MGRs conducted in the water column is permissible based on Article 257 UNCLOS which stipulates that:

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<sup>30</sup> Angel Horna, “Regulating the Global Commons: The BBNJ Negotiations and Ocean Spaces Beyond National Jurisdiction,” in *American Society of International Law Proceedings* (Washington, 2017), 245–47.

<sup>31</sup> Tullio Scovazzi, “Open Questions on the Exploitation of Genetic Resources in Areas Beyond National Jurisdiction,” in *Proceedings of the Annual Meeting (American Society of International Law)*, vol. 107, 2017, 119–22.

“All States, irrespective of their geographical location, and competent international organizations have the right, in conformity with this Convention, to conduct marine scientific research in the water column beyond the limits of the exclusive economic zone”

When a state conducts a bioprospecting on MGRs in the water column beyond EEZ is not prohibited by UNCLOS, however, UNCLOS does not provide further explanation regarding the legal status of MGRs in the water column beyond EEZ. According to UNCLOS, MGRs are not specified as a resource of the Seabed Area, because the seabed area is only consist of natural resources not including the MGRs. Hence, some states argue that research on MGRs in the form of bioprospecting are governed under the freedom of the high seas regime. Hence, the results of bioprospecting are not obligatory to share to other states and the principle of first come first served is applicable.

### 3.3.3. *Marine Scientific Research*

Part XIII of UNCLOS regulates marine scientific research which conducted by states both for education purposes and commercial purposes which establishes that states have the right to conduct marine scientific research, generally governs such research in areas beyond national jurisdiction, but this right is again subject to the rights and duties of other states. However, Article 256 which regulates marine scientific research in the Area does not proclaim the MGRs which may possible to be found in the surface of the Area and comprise enormous economic value.<sup>32</sup> UNCLOS recommends that marine scientific research shall only be conducted for peaceful purposes and in conformity with regulations adopted for the protection and preservation of the marine environment.<sup>33</sup>

Article 256 UNCLOS regulates marine science research in the Area which provides legal basis for states to carry out marine scientific research in the Area that presently is called ABNJ. Article 256 stipulates “All States, irrespective of their geographical location, and competent international organizations have the right, in conformity with the provisions of Part XI, to conduct marine scientific research in the Area”. Thus, it is recognized that every single state has the right to carry out the research in the ABNJ. However, when the research is conducted in the Area this kind of research will be applied the regim of CHM.<sup>34</sup> Thus, the result of the research and the benefits of the research has to be shared for the sake of humankind. Furthermore, states are obligatory

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<sup>32</sup> Arianna Broggiato, “Exploration and Exploitation of Marine Genetic Resources in Areas Beyond National Jurisdiction and Environmental Impact Assessment,” *European Journal of Risk Regulation* 4, no. 2 (2013): 247–51, <https://doi.org/10.1017/S1867299X00003378>.

<sup>33</sup> Asaf Lubin, “The Dragon-Kings’ Restraint: Proposing a Compromise for the EEZ Surveillance Conundrum,” *Washburn Law Journal* 57, no. Winter (2018): 17–75.

<sup>34</sup> Buckingham Shum et al., “How to Cite: Hypermedia Support for Argumentation-Based Rationale: 15 Years on from GIBIS and QOC,” *PaechComputer Science Edi-Torial*, 2006.

to promote the flow of scientific data and information and the transfer of knowledge resulting from this research especially to developing states.

Research conducted in the Seabed Area as the ABNJ falls under the CHM regime.<sup>35</sup> According to the CHM regime, when conducting scientific research, states have to share the results of the research both economically and non-economically with other states, however, research conducted in seabed areas based on Chapter XIII is only limited to mining materials and does not include genetic sources. Principally, the scientific research carried out in the Seabed Area is intended for the benefit of all mankind. This indicates the need for international cooperation in scientific research in the Seabed Area and the transfer of technology, especially to developing countries. Meanwhile, UNCLOS as the Constitution of the Law of the Sea bestows opportunities for the formation of new international agreements to implement and fill the legal lacunae that have not been regulated by UNCLOS, such as conservation, sustainable use of MGRs and the benefit sharing.<sup>36</sup>

According to the CHM regime, when conducting scientific research, countries must share the results of the research both economically and non-economically with other countries, however, research conducted in seabed areas based on Chapter XIII is only limited to mining materials and does not include genetic resources. It is in principle that the scientific research carried out in the Seabed Area is aimed at the benefit of all mankind.<sup>37</sup> This recognizes the need for international cooperation in scientific research in the Seabed Area and the transfer of technology, especially to developing countries. Meanwhile, UNCLOS as the Constitution of the Law of the Sea provides opportunities for the formation of new international agreements to implement and fill the legal lacunae that have not been regulated by UNCLOS, such as conservation, sustainable use of MGRs and the benefit sharing.

Presently, the bioprospecting conducted by developed countries to utilize MGRs in the ABNJ are for economic reason and humanity, because the MGRs in the volume of water in deep sea can be used to create new pharmaceutical products to secure deadly disease, such as Cancer. Article 257 UNCLOS can be used to conduct marine scientific research in the water volume beyond the limits of the exclusive economic zone, and states enjoy the freedom of scientific research in the water volume beyond national jurisdiction.<sup>38</sup> Outstandingly, no provision of UNCLOS distinguishes between marine

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<sup>35</sup> Waseem Ahmad Qureshi, "Protecting the Common Heritage of Mankind beyond National Jurisdiction," *Arizona Journal of International and Comparative Law* 36, no. 1 (2019): 79–110.

<sup>36</sup> Aksenova Marina and Burke Ciarán, "The Chagos Islands Award: Exploring The Renewed Role of The Law of The Sea In The Post-Colonial Context," *Wis. Int'l LJ* 35, no. Fall (2017): 1–38.

<sup>37</sup> Abhaya Ganashree, *op.cit.* 204.

<sup>38</sup> Robin Kundis Craig and Robin Kundis Craig, "The New United Nations High Seas Treaty: A Primer," *Natural Resources & Environment* 34, no. Spring (2020): 48–50.

scientific research carried out for commercial purposes and research that does not have any direct commercial applications.

Bioprospecting as a research for the purpose of commercially valuable genetic resources of the deep seabed can be classified as marine scientific research. However, Article 143 UNCLOS does not provide any definition of marine scientific research. According to Article 143 (1) and 143 (2) stipulate:

- a. Marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole, in accordance with Part XIII.
- b. The Authority may carry out marine scientific research concerning the Area and its resources, and may enter into contracts for that purpose. The Authority shall promote and encourage the conduct of marine scientific research in the Area, and shall coordinate and disseminate the results of such research and analysis when available.

Based on the Article, there is no explanation regarding the definition of the research as well as no explanation what kinds of research are conducted. The Article only proclaims the location of the research and who has the authority to carry out the research. Thus, there is a legal lacunae of UNCLOS to regulates bioprospecting as the research to utilize and commercialize the MGRs in the ABNJ and fail to accommodate the access and equitable benefit sharing as a result of utilizing of MGRs in the ABNJ.

#### **4. CONCLUSION**

MGRs have gigantic economic values and humanity, because the MGRs can be used to create new pharmaceutical products for deadly diseases, such as Alzheimer, cancer and HIV. The MGRs located in the ABNJ have not been regulated by UNCLOS. Based on the discussion of the results, it can be concluded that there are some legal lacunae of UNCLOS to regulate the access and benefit sharing resulted from the utilization of MGRs in the ABNJ. The reasons why that UNCLOS do not cover the regulation of access and benefit sharing arises from the utilization of MGRs in the ABNJ due to the lack of knowledge, awareness as well as the development of technology at that time when the UNCLOS was adopted. Article 87 which regulates freedom of the sea and Article 256 concerning scientific research and Article 136 concerning CHM cannot be applicable to MGRs in the ABNJ. The debate arises when the access to MGRs cannot be applied the CHM, because MGRs are not part of natural resources in the Seabed but located in the volume of the water. On the other hand, the CBD as the legal framework to access and benefit sharing to the MGRs only has limited application to the MGRs located in national jurisdiction of states. The existing Provisions of the CBD and Nagoya Protocol as the implementing Agreement of CBD has limited application to regulate access and genetic resources in national jurisdiction of states. However, the adoption of new regulation, namely the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of ABNJ is an appropriate way to fill the gap or legal lacuna of UNCLOS and



CBD concerning the access and benefit sharing of MGRs in the ABNJ. The new international legally binding Agreement that has been adopted on March 2022, however, the Agreement has not yet comes into force until the requirements have been fulfilled, Thus, it needs further research whether the new international legally binding Agreement to regulate the access and benefit sharing of MGRs is appropriate and maintance the fair access and equitable sharing of the benefitconcerning MGRs in the ABNJ.

## REFERENCES

- Bonfanti, Angelica, and Seline Trevisanut. "TRIPS on the High Seas: Intellectual Property Rights o n Marine Genetic Resources." *Brooklyn Journal of International Law* 37, no. 1 (2011): 187–231.
- Broggiato, Arianna. "Exploration and Exploitation of Marine Genetic Resources in Areas Beyond National Jurisdiction and Environmental Impact Assessment." *European Journal of Risk Regulation* 4, no. 2 (2013): 247–51. <https://doi.org/10.1017/S1867299X00003378>.
- Craig, Robin Kundis, and Robin Kundis Craig. "The New United Nations High Seas Treaty: A Primer." *Natural Resources & Environment* 34, no. Spring (2020): 48–50.
- Eccleston-Turner, Mark, and Michelle Rourke. "Arguments Against the Inequitable Distribution of Vaccines Using the Access and Benefit Sharing Transaction." *International and Comparative Law Quarterly* 70, no. 4 (2021): 825–58. <https://doi.org/10.1017/S0020589321000294>.
- Erica, Wales. "Marine Genetic Resources: The Clash Between Patent Law and Marine Law." *Natural Resources & Environment* 29, no. Winter (2015): 44–47.
- Eritja, Mar Campins. "Bio-Prospecting in the Arctic: An Overview of the Interaction Between the Rights of Indigenous Peoples and Access and Benefit Sharing." *Boston College Environmental Affairs Law Review* 44, no. 2 (2017): 223.
- Farris, Chandler J. "Progress Towards The New International Legal Framework For Protecting Biodiversity In Areas Beyond National Jurisdiction." *NCJ Int'l L* 46, no. 1 (2021): 157–80.
- Feichtner, Isabel. "Sharing the Riches of the Sea: The Redistributive and Fiscal Dimension of Deep Seabed Exploitation." *European Journal of International Law* 30, no. 2 (2019): 601–33. <https://doi.org/10.1093/ejil/chz022>.
- Ganashree, Abhaya. "Who Owns Ocean Biodiversity?: The Legal Status and Role of Patents as a Means to Achieve Equitable Distribution of Benefits." *Case W. Res. J. Int'l L* 53, no. 1 (2021): 197–236. <https://doi.org/10.2139/ssrn.3740038>.
- Global Environment Facility. "Areas Beyond National Jurisdiction." [www.thegef.org](http://www.thegef.org), 2022. <https://www.thegef.org/what-we-do/topics/areas-beyond-national-jurisdiction>.
- Govan, Hugh. "The Pacific Islands and Biodiversity Beyond National Jurisdiction Briefing Note," 2014. <https://doi.org/10.13140/RG.2.1.1247.9527>.
- Hartley, David. "Guarding the Final Frontier: The Future Regulations of the International Seabed Authority." *Temple International & Comparative Law Journal* 26, no. 2 (2012): 335–66. [http://heinonline.org/HOL/Page?handle=hein.journals/tclj26&id=353&div=&collection=journals%5Cnhttp://heinonline.org/HOL/Page?handle=hein.journals/tclj26&div=16&g\\_sent=1&collection=journals](http://heinonline.org/HOL/Page?handle=hein.journals/tclj26&id=353&div=&collection=journals%5Cnhttp://heinonline.org/HOL/Page?handle=hein.journals/tclj26&div=16&g_sent=1&collection=journals).

- Hasan, Sabrina. "Considering The Concept of the Ecological Civilization For Conservation And Sustainable Use of Marine Biodiversity Under the Umbrella of the Biodiversity Beyond National Jurisdiction Instrument." *Environmental Law Review* 23, no. 3 (2012): 248–62. <https://doi.org/10.1177/14614529211032035>.
- Heafey, Eve. "Access and Benefit Sharing of Marine Genetic Resources from Areas beyond National Jurisdiction: Intellectual Property--Friend, Not Foe." *Chicago Journal of International Law* 14, no. 2 (2014): 493–523. <http://chicagounbound.uchicago.edu/cjil/vol14/iss2/5>.
- Hendrik S., Anton. "Modus Operandi Dan Problematika Penanggulangan Tindak Pidana Penipuan Daring." *Mimbar Hukum - Fakultas Hukum Universitas Gadjah Mada* 31, no. 1 (2019): 59. <https://doi.org/10.22146/jmh.34786>.
- Horna, Angel. "Regulating the Global Commons: The BBNJ Negotiations and Ocean Spaces Beyond National Jurisdiction." In *American Society of International Law Proceedings*, 245–47. Washington, 2017.
- Ibrahim, Johnny. *Teori Dan Metodologi Penelitian Hukum Normatif*. Cetakan II. Malang: Bayumedia Publisng, 2007.
- Julian, Aguon, and Hunter Julie. "Second Wave Due Diligence: The Case For Incorporating Free, Prior, and Informed Consent into The Deep Sea Mining Regulatory Regime." *Stan. Envtl. LJ* 38, no. Desember (2018): 3–55.
- Kageyama, Mariko. "Bio-Property Contracts in a New Ecosystem: Genetic Resources Access and Benefit Sharing." *Washington Journal of Law, Technology & Arts* 13, no. 2 (2018): 109–40. [https://heinonline-org.libraryproxy.griffith.edu.au/HOL/Page?public=true&handle=hein.journals/was\\_hjolta13&div=9&start\\_page=109&collection=journals&set\\_as\\_cursor=0&men\\_tab=srchresults](https://heinonline-org.libraryproxy.griffith.edu.au/HOL/Page?public=true&handle=hein.journals/was_hjolta13&div=9&start_page=109&collection=journals&set_as_cursor=0&men_tab=srchresults).
- Kamau, Evanson Chege. "Transformations in International Law on Access To Genetic Resources and Benefit-Sharing and Domestic Implementation. Introduction, Synthesis, Observations, Recommendations and Conclusions." *IUS Gentium* 95 (2022): 3–41.
- Lubin, Asaf. "The Dragon-Kings' Restraint: Proposing a Compromise for the EEZ Surveillance Conundrum." *Washburn Law Journal* 57, no. Winter (2018): 17–75.
- Lyal, Christopher HC. "Digital Sequence Information On Genetic Resources And The Convention On Biological Diversity." *IUS Gentium* 95 (2022): 589–615.
- Marina, Aksenova, and Burke Ciarán. "The Chagos Islands Award: Exploring The Renewed Role of The Law of The Sea In The Post-Colonial Context." *Wis. Int'l LJ* 35, no. Fall (2017): 1–38.
- Mickelson, Karin. "Common Heritage of Mankind as a Limit to Exploitation of the Global Commons." *European Journal of International Law* 30, no. 2 (2019): 635–63. <https://doi.org/10.1093/ejil/chz023>.
- Moody, Oluwatobiloba. "Addressing Biopiracy through an Access and Benefit Sharing Regime-Complex: In Search of Effective Protection for Traditional Knowledge Associated with Genetic Resources." *Asper Review of International Business and Trade Law* 16 (2016): 231–78.
- Ni, Kuei-Jung. "Legal Aspects of Prior Informed Consent on Access to Genetic Resources: An Analysis of Global Lawmaking and Local Implementation Toward an Optimal Normative Construction." *Vanderbilt Journal of Transnational Law* 42, no. 1 (2009): 227–78. <https://doi.org/10.2139/ssrn.1843070>.
- Papastavridis, Efthymios. "The Negotiations for A New Implementing Agreement under

- the Un Convention on the Law of the Sea Concerning Marine Biodiversity.” *International and Comparative Law Quarterly* 69, no. 3 (2020): 585–610. <https://doi.org/10.1017/S0020589320000202>.
- Payne, Cymie R. “New Law for The High Seas.” *Berkeley Journal of International Law* 47, no. 1 (2019): 345–68. <https://doi.org/10.15779/Z38RX93D7B>.
- Posner, Eric A., and Alan O. Sykes. “Economic Foundations of the Law Of the Sea.” *American Journal of International Law* 104, no. 4 (2010): 569–96. <https://doi.org/10.5305/amerjintelaw.104.4.0569>.
- Putri, Hafifah. “Jurnal Ilmiah FENOMENA, Volume XIV, Nomor 2, November 2016: 1554-1566” XIV, no. November (2016): 1554–66.
- Qureshi, Waseem Ahmad. “Protecting the Common Heritage of Mankind beyond National Jurisdiction.” *Arizona Journal of International and Comparative Law* 36, no. 1 (2019): 79–110.
- Riggio, Aaron M. “Giving Teeth To The Tiger: How The South China Sea Crisis Demonstrates The Need For Revision To The Law Of The Sea.” *Military Law Review* 224 (2016): 597–638.
- Rogers, Alex D., Amy Baco, Elva Escobar-Briones, Duncan Currie, Kristina Gjerde, Judith Gobin, Marcel Jaspars, et al. “Marine Genetic Resources in Areas Beyond National Jurisdiction: Promoting Marine Scientific Research and Enabling Equitable Benefit Sharing.” *Marine Affairs, Policy and Practice Reviews* 8, no. 2 (2021): 1–22.
- Scovazzi, Tullio. “Open Questions on the Exploitation of Genetic Resources in Areas Beyond National Jurisdiction.” In *Proceedings of the Annual Meeting (American Society of International Law)*, 107:119–22, 2017.
- Shum, Buckingham, Allen H Dutoit, Raymond McCall, Ivan Mistrik, Simon J Buckingham Shum, Albert M Selvin, Maarten Sierhuis, Jeffrey Conklin, Charles B Haley, and Bashar Nuseibeh. “How to Cite: Hypermedia Support for Argumentation-Based Rationale: 15 Years on from GIBIS and QOC.” *PaechComputer Science Edi-Torial*, 2006.
- Soekanto, Soerjono, and Sri Mamuji. *Penelitian Hukum Normatif Suatu Tinjauan Singkat*, 2011.
- United Nations. “Draft Text of An Agreement Under The United Nations Convention on The Law Of The Sea On The Conservation And Sustainable Use of Marine Biological Diversity of Areas Beyond National.” [www.un.org](http://www.un.org), 2022. [https://www.un.org/bbnj/sites/www.un.org.bbnj/files/revised\\_draft\\_text\\_a.conf\\_232.2020.11\\_advance\\_unedited\\_version.pdf](https://www.un.org/bbnj/sites/www.un.org.bbnj/files/revised_draft_text_a.conf_232.2020.11_advance_unedited_version.pdf).



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