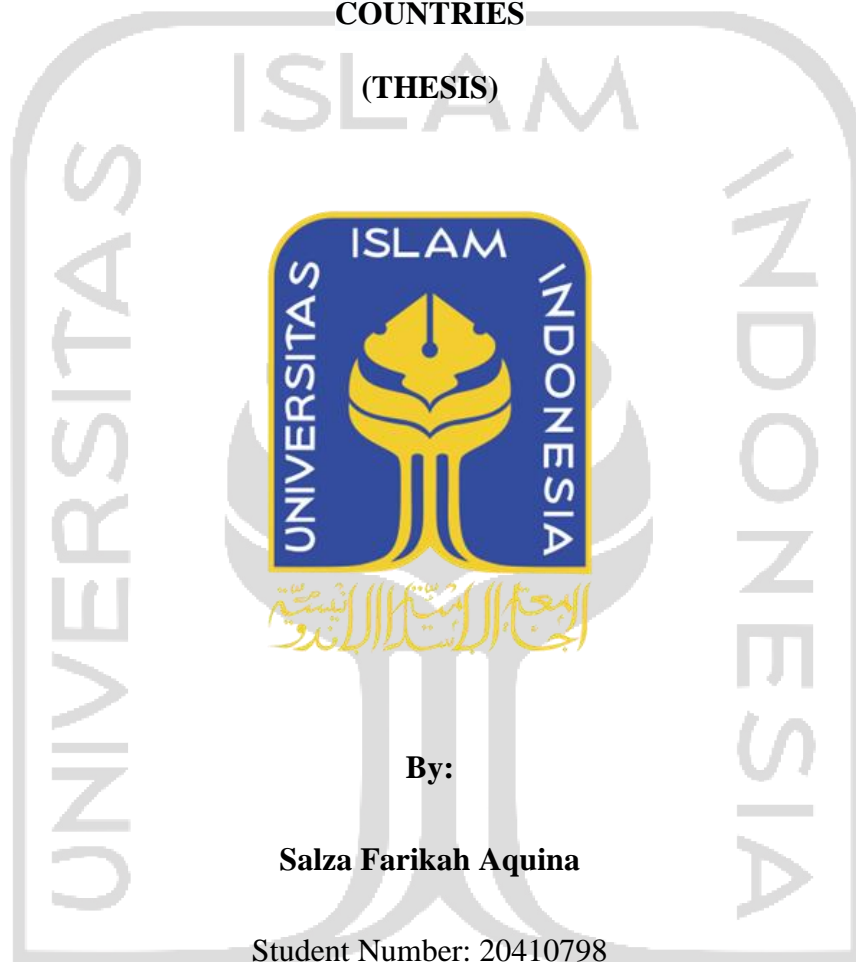


**LEGAL ANALYSIS OF THE EQUITABLE ACCESS TO MARINE
GENETIC RESOURCES IN AREAS BEYOND NATIONAL
JURISDICTION: IN THE PERSPECTIVE OF DEVELOPING
COUNTRIES
(THESIS)**



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ABSTRACT

Marine Genetic Resources (MGRs) have potential and actual commercial and scientific value. Existing regimes, notably UNCLOS, CBD and Nagoya Protocol, do not govern the utilization and equitable access benefit-sharing for MGRs in Areas Beyond National Jurisdiction (ABNJ), which furthers the gap between developed and developing countries in terms of accessing, exploiting, and benefiting from MGRs in ABNJ. To fill this legal vacuum, the BBNJ Agreement was established under UNCLOS to support SDGs and the legal protection of developing countries in the implementation of equal access and benefit-sharing of MGRs in ABNJ. This research addresses two main issues: Firstly, why does the current international legal frameworks for equitable access of MGRs in ABNJ have to guarantee the equitable among developed and developing countries? Secondly, what improvement should be done by the developing countries to ensure that developing countries have equitable opportunities to access, research, and utilize MGRs in ABNJ? The thesis employs normative juridical research method with four approaches, namely the historical, conceptual, comparative, and statutory approaches. Findings reveal that the reasons the current international legal framework have to guarantee the equitable access among developed and developing countries because MGRs in ABNJ is set as a Global Commons, Promote SDGs, and Uphold Fairness and Equity. The Author suggest there are some efforts can be done by Developing Countries, which encouraging investment in MGR utilization in ABNJ and strengthening international cooperation for technology transfer and capacity-building.

Keywords: MGRs, ABNJ, Equity, Benefit-Sharing, Developing Countries

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CHAPTER I INTRODUCTION

A. BACKGROUND OF STUDY

Areas Beyond National Jurisdiction (ABNJ) encompass 64% of the ocean surface and 95% of its volume.¹ ABNJ are situated outside the Exclusive Economic Zones (EEZ) and continental shelves of coastal States, consisting of the high seas and the Area defined as the seabed, ocean floor, and subsoil beyond national jurisdiction limits.² The territorial seas, contiguous zones, economic exclusive zones, and continental shelves represent areas over which a state holds sovereignty or sovereign rights.³ As the ABNJ is outside the exclusive economic zone and continental shelf, it cannot be claimed by a state as its sovereign right.⁴ Thus, there is no single state have the responsibility and authority to manage and protect the ABNJ.⁵

Even though the wide, deep oceanic region that makes up ABNJ has not been thoroughly studied, scientific studies have already shown an abundance and diversity of species.⁶ Nearly two-thirds of it is beyond national

¹Global Environment Facility. "Areas Beyond National Jurisdiction". <https://www.thegef.org/what-we-do/topics/areas-beyond-national-jurisdiction#:~:text=Results-Main%20Issue,has%20sole%20responsibility%20for%20management>.

² Article 1 (1) of UNCLOS

³ Sri Wartini. (2022). 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*: Vol. 18 No. 1, p. 52.

⁴ Ibid

⁵ Ibid

⁶ Lisa A Levin and Myriam Sibuet. (2012). 'Understanding Continental Margin Biodiversity: A New Imperative' 4(1) *Annual review of marine science* 79.

jurisdiction along with its unique-rare species and ecosystems. This area is vital for marine biodiversity and have been increasingly subject to scientific research and commercial exploitation.⁷ Therefore, the diversity of marine life presents a valuable wellspring of natural innovation, providing numerous potential advantages such as expanding our scientific understanding of ocean systems and addressing societal requirements by creating advancements in health, food security, and the preservation of robust ocean ecosystems.⁸

The world was largely unaware that there were living resources in the ABNJ, especially in the Area, during the time that UNCLOS was being negotiated. At first, it was thought that photosynthesis was impossible on the ocean floor due to a lack of sunshine.⁹ Due to their lack of knowledge at that time, the UNCLOS's drafters only included mining operations and mineral resources while ignoring life resources. When experts formed UNCLOS, they did not consider genetic resources found in water columns or on the seabed. Furthermore, they remained oblivious to the enormous worth of genetic resources even after the hydrothermal vent was found in 1977.¹⁰ The high seas' living resources were only managed to address fisheries concerns, especially for highly migratory species and straddling stocks. The potential benefits of these resources, especially those for medicinal applications, have become more

⁷ Ibid

⁸ E RamirezLlodra et al, 'Deep, diverse and definitely different: unique attributes of the world's largest ecosystem' (2010) 7(9) Biogeosciences 2851-2899.

⁹ Fernanda Millicay, "A Legal Regime for the Biodiversity of the Area" in Law, Science, and Ocean Management, Myron H. Nordquist et. al. ed. (Leiden: Martinus Nijhoff, 2007), p. 745.

¹⁰ Friederike Lehmann, "The Legal Status of Genetic Resources of the Deep Seabed," New Zealand Journal of International Law 11, no. 33 (2007): 39.

apparent with the advancement of modern technology; yet, there is currently no comprehensive regulation in place. Consequently, there is a legal gap in UNCLOS that governs the definition of marine genetic resources and the regulation of marine scientific research to use and commercialize Marine Genetic Resources (hereinafter MGRs) in the ABNJ.

Marine Genetic Resources (MGRs) refer to any material of marine plant, animal, microbial, or other origin containing functional genetic units with actual or potential value.¹¹ The 1992 Convention on Biological Diversity (CBD) and the 2010 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization under the CBD regulate the management of genetic resources. These regulations are applicable to genetic resources within national jurisdiction. In the context of ABNJ, the CBD and the Nagoya Protocol do not have jurisdiction over MGRs. This means that regulations related to benefit-sharing and access agreements for marine genetic resources in ABNJ are not covered by the CBD or the Nagoya Protocol.

UNCLOS and other legal frameworks, such as the CBD and Nagoya Protocol, do not govern bioprospecting for MGRs in ABNJ, which furthers the gap between developed and developing nations in terms of accessing, exploiting, and benefiting from MGRs in ABNJ. This leads to a disparity between States that can profit from access to MGRs and those that cannot, as

¹¹ Article 1 (11) on 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.

well as gaps in the laws controlling the exploitation of MGRs in the Area and on the high seas.¹² Recognizing the need to address gaps and fragmentation in the legal framework governing ABNJ, states are preparing to initiate the development of a new International Legally Binding Instrument (hereinafter ILBI) under the UNCLOS. This instrument aims to promote the conservation and sustainable use of marine biological diversity in ABNJ.¹³

To address the regulation of access to and benefit-sharing of MGRs in ABNJ, the 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 (referred to as the BBNJ Agreement) was adopted in March 2022. The negotiations for this agreement focused on four main components: marine genetic resources (including access and benefit-sharing), area-based management tools such as Marine Protected Areas (MPAs), Environmental Impact Assessments (EIAs), and efforts related to capacity building and technology transfer. However, BBNJ Agreement cannot immediately enter into force. The Vienna Convention of 1969 states that an international agreement will only take effect once all requirements have been met, which is must be ratified by 60 UN member states before it can enter into

¹² Schoenberg, P.L. (2009). Polarizing Dilemma: Accessing Potential Regulatory Gap-Filling Measures for Arctic and Antarctic Marine Genetic Resources Access and Benefit Sharing. *Cornell International Law Journal*, 42, 271-299.

¹³ United Nations General Assembly, Resolution Adopted by the General Assembly, 'International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction', GA Res 72/249, 72nd sess, Agenda Item 77, A/Res/72/249 (24 December 2017) para 1. For a discussion of the ILBI see Section 1.2.1 of this Chapter.

force and it could take some time. For instance, the 1982 Convention on the Law of the Sea was adopted in 1982, but the UNCLOS didn't come into effect until 1994 after the convention was ratified by its sixty-first state.¹⁴

A recent research investigation highlighted the potential of marine genetic resources in biotechnology, revealing 18,000 natural products and 4,900 patents linked to genes found in marine organisms.¹⁵ MGRs in the ABNJ have garnered attention from the global community over the past ten years due to their high potential economic value and potential humanitarian benefits, as they can be used as raw materials for pharmaceutical products,¹⁶ cosmetics, and serious illnesses including cancer, Alzheimer's, and HIV.¹⁷ Marine life offers several potential treatments for human diseases. antimicrobial, anti-inflammatory, and cancer treatments, for instance. Many are in use, such as the antiviral vidarabine for treating herpes viruses, cytarabine for treating acute lymphocytic leukemia, and trastedin for treating metastatic cancer.¹⁸

The significant funding from the National Cancer Institute in the United States, combined with its dedication to worldwide collection of MGRs,

¹⁴ 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.

¹⁵ Sophies Arnaud-Haond, Jesus M. Arrieta, Cados M. Duarte, "Marine Biodiversity and Gene Patents", 331 *Science*.

¹⁶ Fernando de la Calle. (2009). "Marine Genetic Resources. A Source of New Drugs The Experience of the Biotechnology Sector", 24(2) *The International journal of Marine and Coastal Law*, p. 209-220.

¹⁷ Mar Campins Eritja. (2017). "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. p. 223.

¹⁸ Kelly Macnamara. 2023. *Drugs from the deep: scientists explore ocean frontiers.* <https://phys.org/news/2023-03-drugs-deep-scientists-explore-ocean.html>

emphasized a concentration on cancer treatment. This primarily involved compounds gathered from shallow tropical reefs and sourced from marine invertebrates.¹⁹ Consequently, among the eight clinically sanctioned medications originating from MGRs, five are specifically made for cancer treatment. The remaining three target neuropathic pain, Herpes simplex virus, and hypertriglyceridemia. Of these, seven are derived from marine invertebrates, while one comes from an oily fish.²⁰ Additionally, the European Medicines Agency has authorized certain over-the-counter remedies developed from MGRs, including Carragelose, an effective antiviral medication widely applicable in treating respiratory viruses like the common cold.²¹ Out of the over 33,000 recorded marine natural compounds, 28 items derived from the sea are presently undergoing clinical trials, while another 250 are undergoing preclinical research.²² This is an astounding success rate when compared with terrestrial natural products.

Starting in 1969, research began on reef creatures like sponges, seasquirts, and soft corals. Then, in the early 1990s, scientists shifted their focus to studying marine bacteria found in marine sediments, which were easier

¹⁹ Thornburg, C.C., J.R. Britt, J.R. Evans, R.K. Akee, J.A. Whitt, S.K. Trinh, M.J. Harris, et al. 2018. "NCI Program for Natural Product Discovery: A Publicly-Accessible Library of Natural Product Fractions for HighThroughput Screening." *ACS Chemical Biology* 13 (9): 2484–97. <https://doi.org/10.1021/acscchembio.8b00389>.

²⁰ Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. 2020. *The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources*. Washington, DC: World Resources Institute. p. 13.

²¹ Alves, C., J. Silva, S. Pinteus, H. Gaspar, M.C. Alpoim, L.M. Botana and R. Pedrosa. 2018. "From Marine Origin to Therapeutics: The Antitumor Potential of Marine Algae-Derived Compounds." *Frontiers in Pharmacology* 9. <https://doi.org/10.3389/fphar.2018.00777>.

²² MarinLit. 2020. "A Database of Marine Natural Products Literature." <http://pubs.rsc.org/marinlit/>.

and more cost-effective to gather.²³ Anti-inflammatory and antibacterial medications, as well as cancer treatments, have all been developed using sea sponges. Up to 30% of all active marine metabolites are produced by sea sponges, which presents business prospects for the biomaterials and pharmaceutical industries.²⁴ The first marine natural products were from marine sponges, and the first antiviral medication, Ara-A (Vidarabine®), was created in the 1950s with the discovery of nucleoside spongouridine.²⁵ Spongouridine's antiviral activity was initially reported in 1964, and subsequent research demonstrated its clinical efficacy in treating Herpes infections in immunocompromised patients and neonates.²⁶ Even if more recent antiviral medications have replaced it, vidarabine is the most ancient antiviral medication still in use. The richest primary source of recognized marine natural products has been found in sponges.²⁷

Only 31 out of 194 countries worldwide have patents citing marine genes, with 10 holding 90% of the total. By 2017, the gap had grown, with the top 10 nations holding 98% of the overall share and organizations or researchers from the US, Germany, and Japan accounting for 70% of the applications. These companies and researchers have the financial resources and

²³ Midwestern University, 'Clinical Pipeline: Marine Pharmacology: Approved Marine Drugs' <https://www.midwestern.edu/departments/marinepharmacology/clinical-pipeline.xml>

²⁴ T. Kodadek, 'The rise, fall and reinvention of combinatorial chemistry' 55 *Chemical Communications* (2011) 47, 9757–9763.

²⁵ W. Bergmann and R. J. Feeney, *J. Org. Chem.* (1951). "Contributions to the Study of Marine Products". XXXII. The Nucleosides Of Sponges. I. 16, 981–98.

²⁶ De Clercq E, Field HJ. 2006. Antiviral prodrugs - the development of successful prodrug strategies for antiviral chemotherapy. *Br J Pharmacol.* 147(1):1-11. doi: 10.1038/sj.bjp.0706446

²⁷ Sagar S, Kaur M, Minneman KP. 2010. Antiviral lead compounds from marine sponges. *Mar Drugs.* 8(10):2619-38. doi: 10.3390/md8102619

technological know-how to investigate and utilize the MGRs in ABNJ.²⁸ Approximately 1,600 patent sequences came from species that are typically found in ABNJ and are connected to the deep marine and hydrothermal vent systems. The high expenses associated with marine bioprospecting research, in addition to the sophisticated equipment and knowledge needed,²⁹ have meant that most exploration has been undertaken by high-income countries. Notably, these are the United States, United Kingdom, Australia, Canada, Japan, Germany and Russia.³⁰

Knowledge about MGRs is politically salient because of its potential economic worth and extremely unequal global distribution.³¹ Only a handful of countries globally possess the financial means and scientific capabilities required for MGRs research, which is a highly challenging domain. However, exploration and sampling of the ocean genome frequently occur in the ocean regions of low- or middle-income nations, particularly in the ABNJ, outside any nation's territorial control. Most nations don't have the resources to enter and leverage the swiftly expanding genetic sequence databases or conduct this research independently.³² This lack of resources and infrastructures for

²⁸ Blasiak, R., J.-B. Jouffray, C.C.C. Wabnitz, E. Sundström and H. Österblom. 2018. "Corporate Control and Global Governance of Marine Genetic Resources." *Science Advances* 4 (6): eaar5237.

²⁹ Greiber, T. 2012. *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-Sharing*. 83. Gland, Switzerland: International Union for Conservation of Nature.

³⁰ Arnaud-Haond, S., J.M. Arrieta and C.M. Duarte. 2011. "Marine Biodiversity and Gene Patents." *Science* 331 (6024): 1521–22.

³¹ *Ibid*

³² *Ibid*

exploring into marine biodiversity has caused a global gap in both research and the issuance of patents encompassing MGRs.³³

Global disparities in scientific and technological capabilities mean that certain nations are not able to obtain and utilize so-called "marine genetic resources" in ABNJ.³⁴ and there is currently no applicable international legal regime for access and benefit-sharing.³⁵ Developed countries, most of which have low levels biodiversity, benefit more from being able to access and exploit the rich biodiversity in developing countries.³⁶ Exploitation in marine ABNJ worsens the issue. The ability of developed nations to utilize the Area for the benefit of MGRs rises with advancements in technology.³⁷ Within this area, known as the "common heritage of mankind," the discrepancy between developed and developing nations in accessing and deriving benefits from Marine Genetic Resources (MGRs) becomes apparent.³⁸

Thus, it is necessary to conduct further research to find out the legal arrangements regarding equality of access and benefit-sharing of MGRs in

³³ Tolochko, P., & Vadrot, A. B. (2021). The usual suspects? Distribution of collaboration capital in marine biodiversity research. *Marine Policy*, 124, 104318. Also see Vadrot, A., Langlet, A., Tessnow von Wysocki, I. (2021). Who owns marine biodiversity? Contesting the world order through the 'common heritage of humankind' principle. *Environmental politics*.

³⁴ Christopher R German et al, 'Deep-Water Chemosynthetic Ecosystem Research During the Census of Marine Life Decade and Beyond: A Proposed DeepOcean Road Map' (2011) 6(8) PLoS ONE 1.

³⁵ Arianna Broggiato et al, 'Fair and equitable sharing of benefits from the utilization of marine genetic resources in areas beyond national jurisdiction: Bridging the gaps between science and policy' (2014) 49(0) *Marine Policy*. p. 176-185.

³⁶ De Jonge, B. (2011). What Is Fair and Equitable Benefit-sharing? *Journal of Agricultural & Environmental Ethics*, 24, 127-146. <https://doi.org/10.1007/s10806-010-9249-3>

³⁷ Russell, L. (2009). The Future of the Seabed. *Economic Affairs*, 29, p. 69-70. <https://doi.org/10.1111/j.1468-0270.2009.01898.x>

³⁸ Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations (1982) United Nations Convention on the Law of the Sea.

ABNJ in Developing Countries. While waiting for the transition period of the BBNJ Agreement to come into force, the author will criticize one of the elements that is a gap in the current regulatory legal regime regarding Equal Access to MGRs in ABNJ along with benefit-sharing between Developed and Developing Countries. In addition, the author will discuss what efforts can be made by developing countries to gain equal access to developed countries. Based on the background above, the author is interested in conducting research entitled **“Legal Analysis of the Equitable Access to Marine Genetic Resources in Areas Beyond National Jurisdiction: In The Perspective of Developing Countries”**.

B. PROBLEM FORMULATION

Based on the background that has been described, the formulation of the research problem are:

1. Why does the current international legal frameworks for equitable access of Marine Genetic Resources (MGRs) in Areas Beyond National Jurisdiction (ABNJ) have to guarantee the equity among developed and developing countries?
2. What improvement should be done by the developing countries to ensure that developing countries have equitable opportunities to access, research, and utilize MGRs in ABNJ?

C. OBJECTIVE RESEARCH

Based on the problem formulations above, the research objectives are:

1. To examine why does the current international legal frameworks for equitable access of Marine Genetic Resources (MGRs) in Areas Beyond National Jurisdiction (ABNJ) have to guarantee the equity among developed and developing countries.
2. To analyze what kind of improvements should be done by the developing countries to ensure that developing nations have equitable opportunities to access, research, and utilize MGRs in ABNJ.

D. RESEARCH ORIGINALITY

Prior to initiating this research, the author conducted a comprehensive literature review, which included searching for information from various sources such as books, papers, journals, the internet, and seeking insights from experts in the field. This research is a completely original work, containing absolutely no elements of plagiarism from theses or similar works. This approach was taken to underscore the uniqueness of this research and to proactively avoid duplication of topics similar to this research. Below are the related studies related to this research topic that I have found to compare with previous research:

First, In 2018 thesis titled "The Scope of an Access and Benefit-Sharing Regime for Marine Genetic Resources in Areas Beyond National Jurisdiction: Future Prospects and Potential Challenges," Mathilde Morel Daasvatn from the

Faculty of Law at The Arctic University of Norway provides an analysis of the Areas Beyond National Jurisdiction and discusses the BBNJ (Biodiversity Beyond National Jurisdiction) process. The thesis explores the conditions necessary to establish a fair and equitable Access and Benefit-Sharing (ABS) regime for Marine Genetic Resources sourced from ABNJ.³⁹

Second, thesis written by Ingrid Nikolaisen, 2022, Faculty of Law, The Arctic University of Norway, with the title "Marine Genetic Resources in Areas Beyond National Jurisdiction: Developing Countries and Issues Related to Equitable Benefit Sharing". Examines the necessary measures to ensure fair and equitable access and utilization of benefits derived from Marine Genetic Resources activities in Areas Beyond National Jurisdiction. She specifically addresses the challenging issues that emerged during the negotiation of the final implementation agreement, focusing on equitable benefit-sharing of MGRs in ABNJ, especially for developing countries. The thesis reviews past negotiations to identify potential measures that could be adopted to achieve the goal of fair and equitable sharing of access and benefits related to MGRs in ABNJ.⁴⁰

Third, article written by Jorge Cabrera Medaglia and Frederic Perron-Welch, entitled "The benefit-sharing principle in international law", Journal of Intellectual Property Law & Practice, 2019, Vol. 14, No. 1. In this article, the

³⁹ Mathilde Morel Daasvatn. (2018). *"The Scope of an Access and Benefit-Sharing Regime for Marine Genetic Resources in Areas Beyond National Jurisdiction: Future Prospects and Potential Challenges."*

⁴⁰ Ingrid Nikolaisen. (2022). *"Marine Genetic Resources in Areas Beyond National Jurisdiction: Developing Countries and Issues Related to Equitable Benefit Sharing"*.

author addresses the benefit-sharing concept as a potential emerging principle in international sustainable development law. It reviews and studies how benefit sharing is treated in different international law regimens including the Convention on Biological Diversity and its Nagoya Protocol and other Rio Conventions, the International Treaty on Plant Genetic Resources for Food and Agriculture, Law of the Sea, selected regional agreements and ongoing international processes such as the negotiation of an international instrument for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction (ABNJ). Also, this article provide an analysis of the benefit sharing concept in international sustainable development law and the most relevant international law instruments and processes in which benefit sharing has been addressed.⁴¹

Fourth, an article written by Laura E. Lallier, Arianna Broggiato, Dominic Muyltermans and Thomas Vanagt, entitled "Marine Genetic Resources and the Access and Benefit-Sharing Legal Framework", Springer International Publishing Switzerland, 2016, L.J. Stal and M.S. Cretoiu (eds.), *The Marine Microbiome*. This article discusses the legal framework for ABS related to the utilization of marine GR. The article is also intended to inform scientists working with GRS about the new regulatory framework brought about by the CBD and Nagoya Protocol, as well as the EU ABS regulations on compliance, while raising awareness about the potential overlap with permit

⁴¹ Jorge Cabrera Medaglia and Frederic Perron-Welch. (2019). *"The benefit-sharing principle in international law"*.

requirements due to GRS sampling at sea, where the law of the sea guides coastal state legislation on marine scientific research.⁴²

Fifth, an article written by Rogers AD, Baco A, Escobar-Briones E, Currie D, Gjerde K, Gobin J, Jaspars M, Levin L, Linse K, Rabone M, Ramirez-Llodra E, Sellanes J, Shank TM, Sink K, Snelgrove PVR, Taylor ML, Wagner D and Harden-Davies H, 2021, entitled "Marine Genetic Resources in Areas Beyond National Jurisdiction: Promoting Marine Scientific Research and Enabling Equitable Benefit Sharing". The authors here describe what MGRs are, the methods required to collect, study and archive them, including data arising from scientific investigations. They explore the practical requirements of access by developing countries. They also outline existing infrastructure and shared resources that facilitate MGRs access, research, development and benefit sharing from ABNJ.⁴³

Sixth, an article written by Rabone M, Harden-Davies H, Collins JE, Zajderman S, Appeltans W, Droege G, Brandt A, Pardo-Lopez L, Dahlgren TG, Glover AG and Horton T, (2019, entitled "Access to Marine Genetic Resources (MGRs): Raising Awareness of Best Practices Through a New Treaty for Biodiversity beyond National Jurisdiction (BBNJ)". *Front. Mar. Sci.* 6:520. Here the authors describe commitments to best practices that will enable greater sharing of MGRs for research and broad secondary uses including

⁴² Laura E. Lallier, et.al., (2016), "*Marine Genetic Resources and the Access and Benefit-Sharing Legal Framework*".

⁴³ Rogers AD., et.al., (2021), "*Marine Genetic Resources in Areas Beyond National Jurisdiction: Promoting Marine Scientific Research and Enabling Equitable Benefit Sharing*".

conservation and environmental monitoring, and provide examples for access and benefit sharing (ABS) to inform biodiversity beyond national jurisdiction (BBNJ) processes. The article also outlines recommendations for streamlining access to MGRs from ABNJ.⁴⁴

Seventh, article written by Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. 2020. entitled "The Ocean Genome: Conservation and Fair, Equitable, and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute". In this article the authors evaluate the prospects for conservation and sustainable use of the ocean genome. It is analyzed our understanding of the genetic diversity of life within the ocean, the threats posed to such diversity, the benefits provided by genetic diversity and the ecosystems it supports in the context of a changing world, as well as tools and approaches for ensuring fair and equitable sharing of these benefits.⁴⁵

Eighth, an article written by Balakrishna Pisupati, David Leary, and Salvatore Arico, entitled "Access and Benefit Sharing: Issues Related to Marine Genetic Resources", Asian Biotechnology and Development Review, 2008, Vol. 10 No. 3, pp. 49-68. This article try to address some keys legal and policy issues that negotiators of the international regime on ABS need to consider in relation to marine genetic resources. The intention on the paper is

⁴⁴ Rabone M, et.al., (2019), "Access to Marine Genetic Resources (MGRs): Raising Awareness of Best Practices Through a New Treaty for Biodiversity beyond National Jurisdiction (BBNJ)".

⁴⁵ Blasiak, R., et.al, (2020), "The Ocean Genome: Conservation and Fair, Equitable, and Sustainable Use of Marine Genetic Resources."

not to provide a prescriptive idea for the negotiations, but provide an information compilation which may provide useful to negotiators to consider when finalizing the international regime on sectoral issues such as marine genetic resources and links to other multilateral negotiation processes.⁴⁶

Ninth, an article written by Sri Wartini, entitled “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*, Vol. 18 No. 1 (2022) pp. 52-70. In this article, the author addressed 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. The paper also discussed 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.⁴⁷

Tenth, article written by Nurbintoro, Gulardi and Nugroho, Haryo Budi, 2016, "Biodiversity Beyond National Jurisdiction: Current Debates and Indonesian Interests," *Indonesia Law Review*: Vol. 6: No. 3, Article 2. The author in this article seeks to further explain the issues of BBNJ left behind by the current international legal system and the relationship between various international legal instruments related to BBNJ issues. This paper will also

⁴⁶ Balakrishna Pisupati, et.al., (2008), *Access and Benefit Sharing: Issues Related to Marine Genetic Resources*".

⁴⁷ Sri Wartini. (2022). *The Legal Lacunae of UNCLOS and CBD to The Access and Benefit Sharing of Marine Genetic Resources in The Area Beyond National Jurisdiction*".

discuss the Convention on Biological Diversity (CBD) as well as the framework of the World Intellectual Property Organization (WIPO) with regard to genetic resources.⁴⁸

The tenth previous studies can be seen in the following list of table

1.1.

No.	Past Research	Differentiating Element
1.	Mathilde Morel Daasvatn, 2018, Faculty of Law The Arctic University of Norway, "The Scope of an Access and Benefit-Sharing Regime for Marine Genetic Resources in Areas Beyond National Jurisdiction: Future Prospects and Potential Challenges.	This thesis primarily explores the necessary conditions to establish a fair and equitable Access and Benefit-Sharing (ABS) regime for Marine Genetic Resources (MGRs) originating from Areas Beyond National Jurisdiction (ABNJ). The research focuses on the challenges encountered and the efforts required, particularly from the perspective of developing countries, to ensure equal access to MGRs compared to developed countries. The goal is to identify and address barriers that hinder equitable sharing of benefits and promote a more balanced and inclusive approach to MGRs governance in ABNJ.

⁴⁸ Nurbintoro, et.al., (2016), "Biodiversity Beyond National Jurisdiction: Current Debates and Indonesian Interests."

2.	<p>Ingrid Nikolaisen, 2022, Faculty of Law The Arctic University of Norway, “Marine Genetic Resources in Areas Beyond National Jurisdiction: Developing States and issues relating to equitable benefit sharing”.</p>	<p>This thesis analyzes the most challenging issues of equitable benefit sharing of MGRs in ABNJ for developing countries, but the author does not comprehensively explain what challenges are faced by developing countries. Meanwhile, in this research the author will provide a clear explanation of the conditions, capabilities, and challenges faced by developing countries and relate them to the rights that should be felt by each developing country in MGRs in ABNJ.</p>
3.	<p>Jorge Cabrera Medaglia and Frederic Perron-Welch, entitled “The benefit-sharing principle in international law”, Journal of Intellectual Property Law & Practice, 2019, Vol. 14, No. 1.</p>	<p>This article analyzes the benefit sharing concept in international sustainable development law and the most relevant international law instruments and processes in which benefit sharing has been addressed. While the author in this study specifically describes the perspective of developing countries on equal access to MGRs in ABNJ which has not been regulated in the international legal framework. In addition, this research will provide solutions that</p>

		can be applied in the future for developing countries.
4.	Laura E. Lallier, Arianna Broggiato, Dominic Muyldermans and Thomas Vanagt, entitled “Marine Genetic Resources and the Access and Benefit-Sharing Legal Framework”, Springer International Publishing Switzerland, 2016, L.J. Stal and M.S. Cretoiu (eds.), The Marine Microbiom.	This article describes in general terms the conditions and legal framework for access and benefit-sharing associated with the utilization of marine GRs. Meanwhile, this research will examine critically and in detail the international arrangements related to the utilization of MGRs in ABNJ, especially what obstacles are faced by developing countries so that they have not received the rights they should get.
5.	Rogers AD, Baco A, Escobar-Briones E, Currie D, Gjerde K, Gobin J, Jaspars M, Levin L, Linse K, Rabone M, Ramirez-Llodra E, Sellanes J, Shank TM, Sink K, Snelgrove PVR, Taylor ML, Wagner D and Harden-Davies H, 2021, entitled “Marine Genetic Resources in Areas Beyond National Jurisdiction: Promoting	This article focuses more on the discussion of bioprospecting and Exploration of Marine Genetic resources systematically as well as the access and benefit sharing of the MGRs. While this research will focus on analyzing international legal arrangements related to equal access to MGRs in ABNJ by developing countries and recommendations for diplomacy or development efforts that can be carried out by developing countries.

	Marine Scientific Research and Enabling Equitable Benefit Sharing”.	
6.	Rabone M, Harden-Davies H, Collins JE, Zajderman S, Appeltans W, Droege G, Brandt A, Pardo-Lopez L, Dahlgren TG, Glover AG and Horton T, (2019, entitled “Access to Marine Genetic Resources (MGRs): Raising Awareness of Best-Practice Through a New Agreement for Biodiversity Beyond National Jurisdiction (BBNJ).	This article provides recommendations on best practices to streamline access and benefit-sharing sharing of MGRs for research and extensive secondary use including conservation and environmental monitoring, and provides an exemplar for access and benefit-sharing (ABS) to inform the biodiversity beyond national jurisdiction (BBNJ) process. However, the author here finds an element of difference with this research where the author will compare the access enjoyed by developed and developing countries. In addition, the author in this research will answer the question whether the current international legal arrangements have reflected the equality of access.
7.	Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et	This article is more likely evaluating the prospects for conservation and sustainable use of

	<p>al. 2020. "The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute".</p>	<p>the ocean genome. It is also analyzing our understanding of the genetic diversity of life within the ocean, the threats posed to such diversity, as well as tools and approaches for ensuring fair and equitable sharing of these benefits. Meanwhile, this research does not focus on conservation and sustainable use but on the application of international legal arrangements to equal access to MGRs utilization in ABNJ between developing and developed countries.</p>
<p>8.</p>	<p>Balakrishna Pisupati, David Leary, and Salvatore Arico, entitled "Access and Benefit Sharing: Issues Related to Marine Genetic Resources", Asian Biotechnology and Development Review, 2008, Vol. 10 No. 3, pp 49-68.</p>	<p>This article tries to address some key legal and policy issues that negotiators of the international regime on ABS need to consider in relation to marine genetic resources, as well as provide an information compilation to consider the international regime on sectoral issues such as marine genetic resources and links to other multilateral negotiation processes. While this research will provide recommendations or solutions to</p>

		<p>issues with more complete both internal and external efforts, and the author will explain conceptually and comprehensively the gaps and challenges that occur in the utilization of MGRs in ABNJ.</p>
<p>9.</p>	<p>Sri Wartini, “The Legal Lacunae of UNCLOS and CBD to The Access and Benefit Sharing of Marine Genetic Resources in The Area Beyond National Jurisdiction”, <i>Varia Justicia</i>, Vol. 18 No. 1 (2022) pp. 52-70.</p>	<p>This article discussed 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. Besides that, it 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 come into force. However, the difference with this research is that the author here will focus specifically on comprehensively describing the gaps and challenges from the perspective of developing countries towards equal access to MGRs in ABNJ which has not</p>

		<p>been clearly regulated in the current international legal framework. In addition, in this study the author will provide solutions that can be applied in the future for developing countries in order to maximize the benefits of MGRs in ABNJ.</p>
10.	<p>Nurbintoro, Gulardi and Nugroho, Haryo Budi, 2016, "Biodiversity Beyond National Jurisdiction: Current Debate and Indonesia's Interest," <i>Indonesia Law Review</i>: Vol. 6 : No. 3 , Article 2.</p>	<p>This article explains further the BBNJ issues that are left out by the current international legal system and the relation between different international law instruments related to the issues of BBNJ. This paper also addresses Indonesia's position and interest related to this issue of the unfairness of access and benefit-sharing. While in this research the author will explain the access gap that occurs between developing countries and developed countries as a whole and not only criticize the BBNJ Treaty but various international legal instruments related to this issue.</p>

Table 1. 1 The tenth previous studies

Based on the description of the originality of previous research that has been presented, it can be concluded that the focus of research conducted by researchers is different from previous researchers. However, the existence of previous studies that have some similarities in focus and study provides its own contribution to complement further research. In this research, the author here will focus specifically on comprehensively describing the gaps and challenges from the perspective of developing countries towards equal access to MGRs in ABNJ which has not been clearly regulated in the current international legal framework. In addition, in this study the author will provide solutions that can be applied in the future for developing countries in order to maximize the benefits of MGRs in ABNJ.

E. BENEFITS OF RESEARCH

1. Theoretical Benefits

The results of this research are expected to contribute to the development of legal science, especially the legal lacunae of International Law of the Sea in regulating Equal Access and Benefit-sharing for Developing Countries so that they can utilize MGRs in ABNJ as well as developed countries. In addition, the results of this study are expected to provide a formulation of solutions or improvisations for Developing Countries to obtain equal access in the utilization of MGRs in ABNJ.

2. Practical Benefits

The results of this study can be used as input for international legal arrangements and existing stakeholders in order to regulate the utilization of MGRs in ABNJ and how these rules reflect the principle of equality between developed and developing countries. In addition, this research will provide improvised solutions for developing countries to initiate, innovate, and other arrangements so that they can actively compete and have the same access opportunities as developed countries.

F. THEORETICAL FRAMEWORK

1. Various Zone and Boundaries of the Sea

The United Nations Convention on the Law of the Sea (UNCLOS) of 1982 regulates various zones and boundaries for sea areas:

- a. Internal Waters: Internal waters generally consist of bays, estuaries, harbors and waters enclosed by straight baselines. The coastal state has full sovereignty over internal waters, so there is no right of innocent passage for foreign vessels.
- b. Territorial Sea: The Territorial Sea extends up to 12 nautical miles from the baseline. Within this area, the coastal state exercises sovereignty, which includes control over the airspace above and the seabed below.⁴⁹

⁴⁹ Article 3 of UNCLOS

- c. **Contiguous Zone:** According to Article 33 of UNCLOS 1982, the Contiguous Zone is defined as a maritime area that extends up to 24 nautical miles from the baseline used to measure the width of the Territorial Sea, or up to 12 nautical miles if measured from the outer limit of the Territorial Sea.⁵⁰ In the Contiguous Zone, coastal states have a limited authority to enforce certain laws related to customs, taxation, immigration, and pollution control.
- d. **Exclusive Economic Zone (EEZ):** The EEZ is the maritime area beyond and adjacent to the Territorial Sea, subject to a distinct legal framework. This framework governs the jurisdiction and rights of the coastal State over the exploitation, conservation, and management of natural resources within this zone, as well as the freedoms and rights of other States. According to the relevant provisions of the Convention, the width of the Exclusive Economic Zone for any coastal State shall not exceed 200 nautical miles measured from the baseline used to determine the width of the Territorial Sea.⁵¹
- e. **Continental Shelf:** Coastal states possess sovereign rights to explore and exploit natural resources located on the seabed and subsoil of the submerged areas beyond the Exclusive Economic Zone (EEZ) and extending to the outer edge of the continental margin or 200 nautical miles from the baseline, whichever is greater.⁵²

⁵⁰ Dhiana Puspitawati. 2017. *Hukum Laut Internasional*, Depok: Kencana, p.64.

⁵¹ Article 57 of UNCLOS

⁵² Article 76 (1) of UNCLOS

- f. High Seas: The High Seas refer to areas beyond national jurisdiction where all states have the right to freely navigate, conduct overflights, lay submarine cables and pipelines, and exercise other freedoms related to the use of the sea. No state may claim or exercise sovereignty or rights over any part of the High Seas.⁵³
- g. Seabed or The Area: The term "Area" refers to the seabed, ocean floor, and subsoil beyond national jurisdiction. Within this area, the principle of the common heritage of mankind applies. This principle entails that all countries have the freedom to conduct exploration activities in the Area and share a collective responsibility to monitor and protect it from potential damage.⁵⁴

2. Areas and Areas Beyond National Jurisdiction (ABNJ)

ABNJ itself consists of two separate maritime zones delineated in the UNCLOS: **the high seas**, referring to the water column outside of national jurisdiction.⁵⁵ and **the Area**, i.e. the seabed, ocean floor and subsoil thereof beyond the limits of national jurisdiction.⁵⁶ Any state has no control over the sea outside of these boundaries, which is referred to as the high seas.⁵⁷ Article 87 of UNCLOS stipulates that the high seas are

⁵³ Article 87 of UNCLOS

⁵⁴ M. Ilham F. Putuhena, Urgensi Pengaturan Mengenai Eksplorasi dan Eksploitasi Pertambangan di Area Dasar Laut Internasional, *Jurnal Rechtsvinding*, Vol. 8, No. 2, 2019, p. 174.

⁵⁵ Paul A Berkman, *Op. Cit.* p. 311-320.

⁵⁶ Article 1 (1) of UNCLOS

⁵⁷ Article 86 of UNCLOS

accessible to all nations, irrespective of their geographic location. Consequently, no individual nation holds exclusive sovereignty or accountability for their administration. However, the Convention granted the International Seabed Authority (ISA) the mandate to oversee the exploration and utilization of resources located in "the Area."⁵⁸

The rights and obligations on the high seas are governed by UNCLOS Part VII. This includes the capacity for overflight, navigation, building artificial islands, installing undersea cables, fishing, and conducting scientific research. The list is not all-inclusive and only includes a few of the activities that are permissible to be carried out on the high seas. Since marine genetic resources are derived from living things that can be found in the sea, they must be seen as falling within this clause.⁵⁹ Beside that, BBNJ Agreement also regulate several freedoms in High Sea including the rights and obligation of each state which include to conduct Marine Scientific Research, Environmental Impact Assessment, Fair and Equitable Benefit Sharing, Capacity Building, and Technology Transfer.⁶⁰ However, enforcement in the future will depend on the willingness of nations to commit to the Agreement's principles, the development of effective monitoring mechanisms, various international

⁵⁸ Article 137 (2) of UNCLOS

⁵⁹ Article 87(2) of UNCLOS. In the 1974 Fisheries Jurisdiction case (Federal Republic of Germany vs. Iceland), the International Court of Justice characterized the freedom of the high seas as "a recognition of the duty to have due regard to the rights of other States and the needs of conservation for the benefit of all." (ICJ Reports), 3.

⁶⁰ UNGA A/RES/66/119 (30 June 2011) p. 2, para 1 (b).

institution, cooperation among states, and the establishment of robust governance structures to ensure effective implementation once the treaty becomes legally binding.⁶¹

3. Marine Scientific Research (MSR)

The general phrase most frequently used to characterize actions carried out in ocean and coastal waters with the aim of advancing scientific understanding of the marine environment and its processes is "marine scientific research."⁶² Legal scholars have used the description "any type of scientific exploration, whether foundational or practical, focused on the marine environment, meaning research that centers on the marine environment itself."⁶³ Marine scientific research may include physical oceanography, marine chemistry, marine biology, fisheries research, scientific ocean drilling and coring, geological and geophysical research, and other activities with a scientific purpose. On the other hand, Part XIII of UNCLOS regulates marine scientific research which conducted by states both for education purposes and commercial purposes.⁶⁴

⁶¹ Carlos M. Correa, 'Access to and Benefit Sharing of Marine Genetic Resources Beyond National Jurisdiction: Developing a new Legally Binding Instrument', South Centre, Research Paper 79 (2017), p. 15.

⁶² National Oceanic and Atmospheric Administration, U.S. Department of Commerce "Marine Scientific Research" <https://www.noaa.gov/marine-scientific-research>

⁶³ P. Birnie, 'Law of the Sea and Ocean Resources: Implications for Marine Scientific Research' 10 International Journal of Marine and Coastal Law (1995), p. 242.

⁶⁴ Sri Wartini, Op. Cit, p.65.

Another regime that could potentially regulate States' rights to access and utilize MGRs is the regime of Marine Scientific Research, outlined in Part XIII of the UNCLOS. MSR is recognized as one of the freedoms of the high seas, allowing States to conduct scientific research in the Area in accordance with the provisions of Part XI of UNCLOS.⁶⁵ According to Article 238 of UNCLOS, "All States" and "competent international organizations" have the entitlement to conduct MSR, subject to the conditions specified in the convention.⁶⁶ Therefore, scientific research in marine areas is considered a fundamental freedom of the high seas, intended to be conducted solely for peaceful purposes and in accordance with the general principles outlined in UNCLOS Article 240.⁶⁷ It is evident that every state has the right to conduct marine scientific research in ABNJ. Marine scientific research conducted in the Area is governed by the principle of the Common Heritage of Mankind (hereinafter CHM), meaning that the benefits of such research should accrue to the entire global community.⁶⁸ This includes the publication of research findings and the transfer of scientific knowledge resulting from this research, with a particular emphasis on benefiting developing states.⁶⁹

⁶⁵ Articles 256 and 257 of UNCLOS

⁶⁶ Article 238 of UNCLOS

⁶⁷ Article 240 of UNCLOS

⁶⁸ 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.

⁶⁹ Sri Wartini, *Op. Cit.*, p.66.

MSR stated in the BBNJ Agreement in the Article 7 (c), “*The freedom of marine scientific research, together with other freedoms of the high seas*”.⁷⁰ This shows that the BBNJ Agreement guarantees the freedom and right to marine scientific research to all countries on the high seas, which in this case includes ABNJ. Also, in the Article 8 of BBNJ Agreement regulates regarding International cooperation which stated “Parties are required to encourage international cooperation in marine scientific research and the development and transfer of marine technology, aligning with the principles of the Convention, to support the objectives outlined in this Agreement.”⁷¹ To guarantee comprehensive understanding of the biological diversity in ABNJ, diversity depends on international cooperation for current and upcoming research.⁷² Therefore, it will fill up the gaps in scientific understanding of biological variety, particularly for the most challenging areas. improved political involvement may result from improved information sharing, and increased research capacity and technology transfer may follow. Furthermore, the possibility of achieving global financial cooperation may play a critical role in guaranteeing benefit sharing and equal access.

⁷⁰ Article 7 (c) of BBNJ Agreement

⁷¹ Article 8 of BBNJ Agreement

⁷² The Ad Hoc Open-ended Informal Working Group established to study issues related to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction (referred to as the BBNJ Working Group) UNGA A/RES/59/24 (17 November 2004), p. 13, para 73.

4. The Principles of International Environmental Law

Countries in conducting exploration and exploitation of MGRs in ABNJ require regulation and application in the principles of International Environmental Law:

a. Common Heritage of Mankind (CHM)

The principle of the common heritage of mankind asserts that specific geographical regions and elements of humanity's cultural and natural heritage should be conserved for future generations and protected from exploitation by private entities or individual national governments. It's important to differentiate the concept of CHM from two previously established concepts: *res nullius* and *res communis*.

Res Nullius means that certain objects or things which according to the traditional legal system include wild animals and plants are not owned by anyone and can be freely used and taken by everyone.⁷³ *Res*

Communis, on the other hand, has implications for international law in that some parts of the earth's surface, such as the high seas and outer space, cannot be owned since they are owned by certain communities.

However, the resources can be used by everyone.⁷⁴

The concept of the CHM recognized in the Article 7 of BBNJ Agreement. The inclusion of the CHM principle in the BBNJ Agreement is substantiated by significant policy decisions and

⁷³ Jonathan M. Harris, Basic Principles of Sustainable Development, Working Paper 00-04, Global Development and Environment Institute, June 2000, p. 5-6.

⁷⁴ Ibid

foundational values in textual interpretation. Embracing a system built on this principle aligns with the core goals of the Agreement: fostering both the preservation and responsible utilization of marine biodiversity while concurrently establishing an equitable ocean governance framework for the collective advantage of current and future generations worldwide.⁷⁵ CHM Principle states that all countries have equal rights to certain resources, such as resources in outer space and non-living resources on the undersea floor. That no country will exercise its sovereignty over these resources, as they belong to all humanity. States should cooperate in managing and using such resources in a sustainable manner and the economic or financial gains from the exploitation of such resources should be shared equitably.⁷⁶ This concept is also contained in the provisions of Article 36 of UNCLOS, which states that the high seas and the resources contained therein are the CHM. Article 36 states: “*the area and its resources are the common heritage of mankind*”.⁷⁷

⁷⁵ Opinio Juris. “Memorandum on the Common Heritage of Mankind and Biodiversity Beyond National Jurisdiction (Part II)”. <https://opiniojuris.org/2023/02/24/memorandum-on-the-common-heritage-of-mankind-and-biodiversity-beyond-national-jurisdiction-part-ii/#:~:text=A%20regime%20of%20common%20heritage,all%20countries%20across%20the%20globe.>

⁷⁶ Chris World, The Status of Sea Turtles under International Environmental Law and International Environmental Agreements, *Journal of International Wildlife Law and Policy*, 2008, p. 23-24.

⁷⁷ Article 36 of UNCLOS

b. Equitable Access and Benefit-Sharing

The BBNJ Agreement, particularly in Article 7, establishes provisions for equity and the fair and equitable sharing of benefits.

The preamble and Article 9 of the BBNJ Agreement recognize the importance of access to and utilization of digital sequence information on marine genetic resources in areas beyond national jurisdiction, alongside fair and equitable benefit-sharing, to foster research and innovation between developed and developing countries.⁷⁸

Furthermore, the objectives of the CBD emphasize the conservation of biodiversity, sustainable use of its components, and ensuring just and equitable distribution of benefits derived from genetic resources.

This includes provisions for funding, access, and transfer of relevant technologies.⁷⁹ The Nagoya Protocol on Access and Benefit-sharing

reinforces this connection by linking fair and equitable benefit-sharing from genetic resource utilization with biodiversity conservation and

sustainable use of its components. The protocol encourages both users and providers to direct benefits arising from genetic resource use

towards biodiversity conservation and sustainable component utilization.⁸⁰

⁷⁸ The Preamble and Article 9 of BBNJ Agreement

⁷⁹ Smagadi, A. (2006) Analysis of the Objectives of the Convention on Biological Diversity: Their Interrelation and Implementation Guidance for Access and Benefit Sharing. *Columbia Journal of Environmental Law*, 16, 243-284.

⁸⁰ Siebenhuner, B. and Suplie, J. (2005) Implementing the Access and Benefit-Sharing Provisions of the CBD: A Case for Institutional Learning. *Ecological Economics*, 53, 507-522. <https://doi.org/10.1016/j.ecolecon.2004.10.012>

c. Sustainable Development Goals (SDGs)

SDGs (Sustainable Development Goals) is a sustainable development program in which there are 17 goals with 169 measurable targets with specified deadlines. The SDGs are a global development agenda that aims for the well-being of people and the planet. The SDGs cover a wide range of social and economic development issues. These include poverty, hunger, health, education, climate change, water, sanitation, energy, environment and social justice. The SDGs are also known as Transforming our World: the 2030 Agenda for Sustainable Development. The SDGs consist of three aspects: economic, environmental, and social. The 17 goals of the SDGs are interconnected and influence each other. Achieving the SDGs requires collaboration and cooperation. The SDGs are a global commitment to achieve better sustainable development where efforts to improve the economic climate must also pay attention to ecological or environmental and social aspects. Every country has the responsibility to achieve the SDGs goals.

d. Principle of Cooperation

The obligation of states to cooperate with other states is a central feature of international law in general. Many international treaties are based on the recognition of the need for cooperation

between states at different levels, whether bilateral, regional or global.⁸¹ The establishment of a number of international institutions also highlights the importance of cooperation between states. These international institutions aim to strengthen and accelerate cooperation among their member states.⁸²

In the field of environmental protection, international cooperation is a very important aspect in order to preserve the environment as a whole, both in the jurisdiction of countries or the environment outside the jurisdiction of the state, such as the high sea, Antarctica, or space. The principle of cooperation can be seen from international legal instruments, namely UNCLOS in article 118 which reads.⁸³

“States are encouraged to cooperate with each other in the conservation and management of living resources in the high seas areas. States whose nationals exploit the same or different living resources in the same area are expected to engage in negotiations to implement necessary measures for the conservation of the relevant living resources. Additionally, they should collaborate to establish subregional or regional fisheries organizations, as appropriate, to facilitate these conservation efforts.”

The duty to cooperate is a core principle of general international law. In a dissenting opinion, even Judge Rudiger

⁸¹ Howard Mann, *International Environmental Law*, Alexandre Kiss and Dinah Shelton, New York: Transnational Publishers, Inc., 1991, Pp. 541, *Yearbook of International Environmental Law*, Volume 2, Issue 1, 1991, p. 72, <https://doi.org/10.1093/yiel/2.1.476>

⁸² Ibid

⁸³ Article 118 of UNCLOS

Wolfrum stated that the obligation to cooperate with other states whose interests will be involved in the framework of environmental protection is a Grundnorm that is not only found in Part XII of UNCLOS but also in customary international law.⁸⁴

e. Common but Differentiated Responsibilities Principle

The principle of common but differentiated responsibilities is contained in principle 7 of the Rio Declaration which states as follows:⁸⁵

“States are obligated to collaborate in a spirit of global partnership to conserve, protect, and restore the health and integrity of the Earth's ecosystem. Recognizing the varying degrees of contribution to global environmental degradation, States acknowledge the principle of common but differentiated responsibilities. Developed countries acknowledge their particular responsibility in the international pursuit of sustainable development, considering the pressures their societies place on the global environment and the technologies and financial resources at their disposal.”

According to Alexandre Kiss, the concept of "shared responsibility" is easy to understand, whereas the concept of "differentiated liability" requires further explanation. Likewise, Christopher D. Stone argues that the concept of "differentiated liability" is problematic,⁸⁶ but can be interpreted as follows

⁸⁴ Chinthaka Mendis. (2006). 'Sovereignty vs. trans-boundary environmental harm: The evolving International law obligations and the Sethusamuduram Ship Channel Project'. United Nations/Nippon Foundation Fellow Paper.

⁸⁵ Principle 7 of Rio Declaration

⁸⁶ Christopher D. Stone, Common but Differentiated Responsibilities in International Law, the American Journal of International Law, Vol. 98: 276, p. 277.

“ ‘Common’ suggests that certain risks affect and are affected by every nation on earth. These include not only the climate and ozone shield, but all risks related global public goods, including peace, public health, and terrorism. In reducing the mutual risks, all nations should cooperate in a spirit of a global partnership. Responsibilities are said to be “differentiated”, however, in that not all countries should contribute equally. Common but differentiated responsibility charger some nations, ordinarily the Rich, with carrying a greater share of the burden than others, ordinarily the Poor.”⁸⁷

According to the Third World Network, what is meant by common but differentiated responsibilities is that the destruction of the earth and environmental degradation is our common responsibility, both northern nations and southern nations, but in terms of the obligation to help heal and preserve it, because the degree of contribution to damage is different (with Industrialization the northern nations have more sins), northern nations are obliged to contribute technology and income much more.⁸⁸

f. Precautionary Principle

Precautionary principle are principles that were originally adopted in the declaration and later adopted in various conventions as a form of embodiment of the principle of sustainable development principle. The precautionary principle was originally codified into law in 1971 when it was included as *"vorsorge"* in the German Program

⁸⁷ Ibid, p. 276-277.

⁸⁸ Third World Network, *Pengelolaan Lingkungan Internasional dari Sudut Pandang Negara Sedang Berkembang* (Yogyakarta: Cinderalas Pustaka Rakyat Cerdas, 2005), p. vi-vii.

of Environmental Protection. The precautionary principle is one of the guiding concepts included in a number of rules that emerged from this initiative and are part of Germany's extensive environmental protection legislation.⁸⁹ This principle is a development in national and international policies that aim to protect humans and the environment from and the environment from serious and irreversible harm. irreversible harm. Precautionary principle emphasizes on how to take precautions so that no degradation of the quality of the environment due to pollution.⁹⁰ One definition of the precautionary principle is contained in in Article 15 of the Rio Declaration, as follows:⁹¹

“In situations where there are threats of serious or irreversible damage to the environment, the absence of complete scientific certainty should not be a justification for delaying cost-effective measures aimed at preventing environmental degradation.”

The precautionary principle or approach has regulated in the Article 7 (e) of BBNJ Agreement.⁹² According to this principle, scientific uncertainty cannot be used as an excuse to postpone taking appropriate action to avert environmental damage if there is a threat

⁸⁹ Cranor, Carl. F. 1999. Asymmetric Information, the Precautionary Principle, and Burdens of Proofs, in Carolyn Raffensperger and Joel A. Tickner, Protecting Public Health and the Environment: Implementing the Precautionary Principle, Washington DC: Island Press. p.4.

⁹⁰ Wibisana, M.R.A.G. 2008. Law and Economic Analysis of the Precautionary Principle. Desertasi Doktor Maastricht University, Maastricht. p. 214.

⁹¹ Article 15 Rio Declaration

⁹² Article 7 (e) of BBNJ Agreement

or very serious harm. On the other hand, the precautionary principle states that no action will be made in the absence of sufficient scientific evidence. An action will only be performed in the event that there is sufficient scientific evidence.⁹³ Prevention is carried out on activities and/or businesses where the extent and magnitude of the loss and/or damage is not yet known. Prevention is carried out by taking concrete steps, even though there is no scientific evidence regarding the extent and magnitude of the consequences that may occur. However, this principle will only apply to estimates of serious and irreversible damage to the environment.⁹⁴ In the context of MGRs exploitation in ABNJ, the precautionary principle is of great relevance. The limited knowledge of the potential long-term impacts of exploitation of genetic resources in international waters poses serious uncertainties. Therefore, the precautionary principle demands precautionary measures and careful management of MGRs exploitation activities in ABNJ even though there is no conclusive evidence of their impacts.

⁹³ Anais Kedgley Laidlaw, "Is it Better to be Safe than Sorry? The Cartagena Protocol versus The World Trade Organisation", Victoria University of Wellington Law Review, August, 2005, p. 6.

⁹⁴ Freestone, David & Ellen Hey. 1996. Origins and Development of the Precautionary Principle, dalam The Precautionary Principle and International Law, The Challenge of Implementation. Hague: Kluwer Law International. p.12.

G. DEFINITION OF TERM

The title of this thesis writing is “**Legal Analysis of the Equitable Access to Marine Genetic Resources in Areas Beyond National Jurisdiction: In The Perspective of Developing Countries**”, there are several explanations to provide an understanding that will be examined in this research, including:

1. Areas Beyond National Jurisdiction (ABNJ)

UNCLOS recognizes Areas Beyond National Jurisdiction (ABNJ) as "Areas," referring to "the seabed, ocean floor, and subsoil thereof, beyond the limits of national jurisdiction."⁹⁵ The BBNJ Agreement further clarifies ABNJ as encompassing the high seas and the Area.⁹⁶

2. Marine Genetic Resources (MGRs)

Marine genetic resources are defined as any material of marine plant, animal, microbial, or other origin containing functional units of heredity of actual or potential value. This definition is derived from Article 1(11) of the United Nations 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.⁹⁷

⁹⁵ Article 1 (1) of UNCLOS

⁹⁶ Article 1 (2) on 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

⁹⁷ Article 1 (8) on 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. Marine Scientific Research (MSR)

Marine Scientific Research is defined as any fundamental or applied research and related experimental work conducted by States, their legal entities, physical persons, and international organizations. This research is not aimed directly at industrial exploitation but is designed to acquire knowledge of all aspects of natural processes and phenomena occurring in ocean space, including the seabed and subsoil. Such knowledge is necessary for the peaceful activities of States, further development of navigation, utilization of the sea, and utilization of the airspace above the world ocean". Another definition proposed by legal scholars describes Marine Scientific Research as "any form of scientific investigation, whether fundamental or applied, focused on the marine environment." This definition emphasizes research that targets the marine environment as its primary subject of study.⁹⁸

4. Developing Country

As per the Dictionary of Indonesian Language, a developing country is defined as one that has undeveloped industries, a huge population with a high rate of growth, low per capita income, unexplored natural resources, and traditional agriculture as the principal element

⁹⁸ Patricia Birnie, "Law of the Sea and Ocean Resources: Implications for Marine Scientific Research" published in the International Journal of Marine and Coastal Law (1995), p. 242, see also this definition applied by Tim Stephens and Donald R. Rothwell in 'Marine Scientific Research', The Oxford Handbook of the Law of the Sea, Oxford University Press (2015), p. 2.

of production.⁹⁹ Furthermore, a developing country is characterized as a low-income country that mainly relies on agriculture for its economic growth. These countries may be experiencing demographic changes, are often industrializing, and have little means to deal with their own socioeconomic and environmental problems.¹⁰⁰

H. RESEARCH METHOD

The research methods used in preparing this thesis are described in more detail as follows:

1. Research Typology

The author's typology or type of research is normative juridical research, which is carried out by looking at secondary data or library resources that use actual libraries as the topic of writing studies. The author uses several book references to conduct research related to the topic in this study,¹⁰¹ which is how developing countries' access to MGRs in ABNJ is followed by the application of international environmental law principles.

2. Research Approach

⁹⁹ Kamus Besar Bahasa Indonesia, Badan Pengembangan dan Pembinaan Bahasa, Jakarta, 2016.

¹⁰⁰ Oxford University Press's Dictionaries, Companions, and Encyclopedias.

¹⁰¹ Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. 2020. The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute. Also see: Evanson Chege Kamau. (2022). "Transformations in International Law on Access to Genetic Resources and Benefit-Sharing and Domestic Implementation. Introduction, Synthesis, Observations, Recommendations and Conclusions," IUS Gentium 95.

This research used historical approach, conceptual approach, and statutory approach. Historical approach is an approach used to find out the historical values that become the background and that affect the values contained in a regulation or statute.¹⁰² Furthermore, conceptual approach is a type of approach in legal research that provides an analytical point of view of solving problems in legal research from the aspect of the legal concepts behind it, or it can even be seen from the values contained in the enactment of a regulation in relation to the concepts used.¹⁰³ Other than that, the statutory approach is a research that prioritizes legal material in the form of laws and regulations as a basic reference material in conducting research. The statutory approach is usually used to examine laws and regulations in which there are still shortcomings or even multiply deviant practices either at the technical level or in their implementation in the field.¹⁰⁴

In this research, the author will discuss the equality of access of developing countries to the utilization of MGRs in ABNJ by describing the historical approach to ABNJ arrangements in International Law of the Sea first, then linking it to concepts or principles in applicable International Environmental Law. In addition, the author will use a lot of statutory

¹⁰² S. Nasution. (2011). *Metode Research (Penelitian Ilmiah) usulan Tesis, Desain Penelitian, Hipotesis, Validitas, Sampling, Populasi, Observasi, Wawancara, Angket*, (PT. Bumi Aksara, Jakarta, Cetakan ke-4), p. 16.

¹⁰³ Soerjono Soekanto dan Sri Mamuji. (2001). *Penelitian Hukum Normatif (Suatu Tinjauan Singkat)*, Rajawali Pers, Jakarta, p. 14.

¹⁰⁴ Peter Mahmud Marzuki. (2005). *Penelitian Hukum*, Prenada Media, Jakarta, p. 87 – 91.

approaches and their derivatives.¹⁰⁵ However, the question raised by this thesis cannot be resolved solely by applying these instruments. The legal challenges addressed have been tried to be resolved through the BBNJ Agreement.¹⁰⁶ For that reason, the most recent BBNJ Agreement will act as the primary source throughout this thesis.

3. Research Objectives

The object of research in this study is to examine why does the current international legal frameworks for equitable access of Marine Genetic Resources (MGRs) in Areas Beyond National Jurisdiction (ABNJ) have to guarantee the equity among developed and developing countries. This research also will analyze what kind of improvements should be done by the developing countries to ensure that developing nations have equitable opportunities to access, research, and utilize MGRs in ABNJ.

4. Research Data Sources

Research The data sources needed in this research use secondary data with the following legal materials:

a. Primary Legal Materials

¹⁰⁵ Such as UNCLOS, CBD, as well as its associated protocols, such as the Nagoya Protocol.

¹⁰⁶ UNGA, A/CONF.232/2022/5 (2022), ‘Further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction’.

1. United Nations Convention on the Law of the Sea (UNCLOS), adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 396.
2. United Nations Convention on Biological Diversity (CBD), adopted 15 June 1992, entered into force 29 December 1993, 1760 UNTS 107.
3. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, adopted 29 October 2010, entered into force 12 October 2014.
4. 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 (BBNJ Agreement, has not come into force).

b. Secondary Legal Materials

Secondary legal materials have the function of discussing or further explaining primary legal materials, such as draft laws, literature books, journals, research reports, the internet, documents, infographics, and other scientific works related to this research.

c. Tertiary Legal Materials

Legal materials that serve to provide explanations of primary and/or secondary legal materials consisting of legal dictionaries, the Big Indonesian Dictionary, and others.

5. Data Analysis

The author uses a qualitative descriptive analysis method, namely by collecting data which is then processed and analyzed with the existing problems. The results of the analysis are then presented in narrative form.

6. Thesis Outline

To facilitate the discussion in writing, this research is organized using the following systematics:

CHAPTER I INTRODUCTION

It is a chapter that contains an introduction which includes the background of the problem, problem formulation, research objectives, research originality, literature review, operational definitions, and research methods.

CHAPTER II THEORETICAL REVIEW

A chapter that presents an explanation of the potential of MGRs in ABNJ, an explanation of the current legal frameworks governing access to the utilization of MGRs in ABNJ today, to the concept of equal access and benefit-sharing of the utilization of MGRs in ABNJ in the perspective of Developing Countries itself. The author will explain starting from the theories and principles in international law such as Common Heritage of Mankind, Equitable Access and Benefit-Sharing, Sustainable Development Goals, Common but Differentiated Responsibilities

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C. TREATIES AND CONVENTION

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