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Commencing Deep Seabed Mining: A Review on Law No. 3 of 2020 on Mineral and Coal Mining

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Abstract: *In 2020, the Government of Indonesia enacted Law No. 3 of 2020 on Mineral and Coal Mining, which amended Law No. 4 of 2009 on Mineral and Coal Mining. Under this amendment, Law No. 3 of 2020 on Mineral and Coal Mining expands the definition of mining law territories, as stipulated under Article 1, number 28a. This provision covers the mining law territories of the Indonesian archipelago, seabed area, and continental shelf. This study explores the legal consequences of the term "seabed area" in Law No. 3 of 2020 on Mineral and Coal Mining, to determine whether the law paves the way for deep seabed mining. Through normative and descriptive approaches, this study found that despite the broader definitions of mining territories, Law No. 3 of 2020 on Mineral and Coal Mining is insufficient to initiate deep seabed mining. This is because seabed mining requires a detailed governance structure, especially on the rights and duties of every party involved. Therefore, this paper recommends that the activity be regulated by a distinctive law that specifically addresses seabed mining.*

Keywords: *deep seabed mining, Law No. 3 of 202, mineral mining, coal mining, UNCLOS.*

I. Introduction

Over the years, technological advancement has offered a better opportunity to reduce social and economic inequalities.[1] The adoption of technology to boost business productivity also becomes a prerequisite for business actors to adapt in the midst of digital transformation.[2] With the increasing dependency on technology, the demand for raw mineral resources to support the infrastructure has also increased. This trend is estimated to account for a 7% rise of profit in worldwide mining and metals industries by 2025 and the demand is expected to increase up to 500% by 2050.[3] Notably, the demand for various resources varies, with several minerals, such as graphite, lithium,

1 Kim Lessley, "How Tech Can Help Bridge the Equality Divide," Forbes.com, 2020, https://www.forbes.com/sites/sap/2020/12/10/how-tech-can-help-bridge-the-equality-divide/?sh=4257f60d174f.

2 Lessley.

3 "Mining and Metals: Digital Transformation and the Industry's 'New Normal," World Economic Forum, n.d., https://reports.weforum.org/digital-transformation/mining-and-metals-digital-transformation-and-the-industrys-new-normal/; Hund Kirsten, *Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition* (Washington D.C: World Bank, 2020), 12.

cobalt, and vanadium, being considered as essential for supporting the infrastructure.

The increase in demand also poses another challenge as it is predicted that the minerals, which are mainly acquired from land, will be depleted in the next 50 years.[4] As a result, scientists have proposed the seabed area as an alternative source of minerals. This idea was floated after minerals, such as polymetallic nodules, were discovered on the seabed area. Moreover, the United Nations Convention on the Law of the Sea 1982 (UNCLOS), which provides a comprehensive framework governing the use of seas and oceans, also encourages states to explore and exploit seabed areas by providing equal shares and participation for both developed and developing states.

Part XI of the UNCLOS refers to the international seabed area as "the Area" and describes its resources as a common heritage of mankind. It further says that no state shall claim its sovereignty or sovereign rights upon "the Area." To implement this provision, the UNCLOS established the International Seabed Authority (ISA) and tasked it with the responsibility of administering activities in the Area. Therefore, any states or concerned enterprises that wish to carry out mining activities on the seabed must seek the approval of the ISA. Currently, the ISA has issued exploration rights to 22 contractors, and these contractors are bound to the UNCLOS and ISA regulations.

In Indonesia, Law No. 32 of 2014 about the Sea (Law 32/2014 on Sea) recognizes the existence of the deep seabed in areas beyond national jurisdiction,[5] which allows international cooperation to be established in the said area.[6] However, the law does not provide a clear mechanism of initiating deep seabed mining; instead, it directs the government of Indonesia to enact a new law regarding the activity itself.[7]

In 2020, Law No. 4 of 2009 on Mineral and Coal Mining (Law 4/2009 on Mineral and Coal Mining) was amended by Law No. 3 of 2020 on Mineral and Coal Mining (Law 3/2020 on Mineral and Coal Mining). Under the amendment, the definition of mining law territories was expanded to include the seabed area.[8] Notably, Article 17 of Law 3/2020 on Mineral and Coal Mining allows a Mining Business Permit Area to be established in the sea, which can be effective through ministerial coordination with relevant authorities. Therefore, it can be argued that this law establishes the possibility that seabed mining be conducted under Indonesia's authority. Consequently, this study first examines whether seabed mining can be conducted under the existing Mineral and Coal Mining Law. Second, it assesses whether the law is suitable for conducting seabed mining activities. However, the study does not delve into each right and obligation under the UNCLOS or Indonesian law; instead, it provides a general overview of the international and Indonesian laws governing seabed mining.

[4] Simon (et.al) Jowitt, "Future Availability of Non-Renewable Metal Resources and the Influence of Environmental, Social, and Governance Conflicts on Metal Production," *Communications Earth & Environment* 1, no. 13 (2020): 2, https://doi.org/https://doi.org/10.1038/s43247-020-0011-.

[5] Law No. 32 of 2014 on Sea, Article 10 (2).

[6] Law No. 32 of 2014 on Sea, Article 12.

[7] Law No. 32 of 2014 on Sea, Article 12 (2).

[8] Law No. 4 of 2009 on Mineral and Coal Mining (as amended by Law No. 3 of 2020 on Mineral and Coal Mining), Article 1 (28).

II. Legal Materials and Methods

This study discusses the required standard for states to conduct deep seabed mining, especially under the regime of international law. It also examines whether there is any sufficient legal basis for Indonesia to conduct deep seabed mining.

Further, it employs normative juridical research to examine how international conventions, judicial decisions, and national laws govern seabed mining.

III. Results and Discussion

Development of Deep Seabed Mining

The discovery of polymetallic nodules in 1872 initiated the idea of shifting from land-based mining to deep seabed mining. This idea was further supported by the discovery of a Ferromanganese Crust and Sulfide Deposit at depths of 3000–6000 m in the Pacific Ocean, Peru Basin, and Cook Island.[9] These minerals contain various valuable mineral resources, especially the types of minerals required for computer-based technology, such as gold, cobalt, zinc, nickel, mangan, bronze, molybdenum, lead, silver, and vanadium.[10] As a result, deep seabed mining is expected to be the future of mining. Notably, the exploration of the seabed has covered only 2% of the area, which suggests the possibility of states discovering other seabed areas with large amounts of minerals.[11]

Many states, such as Japan, Canada, and West Germany, began explorations of the seabed area in 1970, immediately after the discovery of the minerals.[12] By 1970, six international consortia had conducted pilot tests on the seabed area.[13] However, as a result of high expenses, political tension between the Global North and Global South, and the rising environmental concerns during the 1970s, the exploration was halted.[14]

Nonetheless, in the beginning of the 21st century, several states took another round at examining the potential of the seabed because of the increasing demand for raw materials. By 2019, 17 state-sponsored companies were conducting explorations on the seabed area. Besides exploration, in 2017, a Belgian-sponsored company initiated environmental impact assessment activities in the Pacific area as it planned to start mining operations in 2026.[15]

With more attention being drawn to seabed mining, the following factors continue to influence the states' decisions to re-examine the potential of deep seabed mining:

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[9] Ola Sparenberg, "A Historical Perspective on Deep-Sea Mining for Manganese Nodules, 1965-2019," *The Extractive Industries and Society* 6, no. 3 (2019): 1–2, 10–11, https://doi.org/https://doi.org/10.1016/j.exis.2019.04.001.

[10] Kathryn A. Miller, Kirsten F. Thompson, and David Santillo, "An Overview of Seabed Mining Including the Current State of Development, Environmental Impacts, and Knowledge Gaps," *Frontiers in Marine Science* 4, no. 418 (2018): 2–6.

[11] Zou Keyuan, "China's Effort in Deep Sea-Bed Mining: Law and Practice, The International Journal of Marine and Coastal Law," *The International Journal of Marine and Coastal Law* 18, no. 4 (2003): 483, https://doi.org/https://doi.org/10.1163/157180803322710994.

[12] Sparenberg, "A Historical Perspective on Deep-Sea Mining for Manganese Nodules, 1965-2019," 2.

[13] Sparenberg, "A Historical Perspective on Deep-Sea Mining for Manganese Nodules, 1965-2019."

[14] Sparenberg, 11.

[15] Sparenberg, "A Historical Perspective on Deep-Sea Mining for Manganese Nodules, 1965-2019."

a. Increasing Demand for Mineral Resources

The relationship between humans and technology is remarkably intertwined. This advancement requires a stable amount of resources—such as manganese for wire, gold for electroplated coating, and cobalt for lithium-ion batteries—to support the infrastructure of technology. Moreover, the increasing human population and the ever-growing trend of the digital economy contribute to the increasing demand for mineral resources. Most resources are acquired through land-based mining, which has attracted a lot of criticism because of its harmful effects on the environment. Scientists have also predicted that mineral resources from land-based mining would be depleted in the next 50 years.[16] Given these reasons, deep seabed mining offers an alternative to embrace the existing trend for mineral resources and to protect the environment.[17]

b. UNCLOS Provides an Equal Opportunity for both Developed and Developing States to Participate in Deep Seabed Mining

The UNCLOS governs mining activities in deep seabed areas or "the Area." The Convention described the resources from the Area as being part of the common heritage of humankind, which renders every resource derived from the Area as an international common good.[18] To actualize this principle, the UNCLOS established the ISA to regulate and control exploration activities in seabed areas. This move aims at ensuring that both developed and developing states are offered equal opportunities to participate in deep seabed mining.[19] Moreover, the UNCLOS expressly restricts any claim over the Area and requires deep sea resources to be distributed equally to each state.[20] However, these provisions do not imply that no state can initiate any activities over the Area; the UNCLOS only provides the regulatory framework for states to participate under several limitations. For example, the UNCLOS allows enterprises to participate in deep seabed mining, but they must be registered as sponsored contractors under a particular state[21] and the sponsoring state is responsible for private contractors' actions while conducting mining activities within the Area.[22] These provisions highlight the prospective legal framework for states to participate in deep seabed mining and its benefit in equally acquiring deep seabed resources.[23]

The International Legal Regime of Deep Seabed Mining

Part XI of the UNCLOS refers to the seabed area as "the Area."[24] The Area is defined as areas that comprise the seabed and ocean floor and subsoil thereof, beyond the

[16] Jowitt, "Future Availability of Non-Renewable Metal Resources and the Influence of Environmental, Social, and Governance Conflicts on Metal Production," 1.

[17] Daina (et.al) Paulikas, "Life Cycle Climate Change Impacts of Producing Battery Metals from Land Ores versus Deep-Sea Polymetallic Nodules," *Journal of Cleaner Production* 275, no. 123822 (2020): 7–8, 17–18, https://doi.org/https://doi.org/10.1016/j.jclepro.2020.123822.

[18] United Nation Convention on the Law of the Sea 1982, Article 136.

[19] Axel Hallgreen and Anders Hansson, "Conflicting Narratives of Deep Sea Mining," *Sustainability* 13, no. 5261 (2021): 6–9, https://doi.org/https://doi.org/10.3390/su13095261.

[20] Rakhyun E. Kim, "Should Deep Seabed Mining Be Allowed?," *Marine Policy* 82 (2017): 134–37.

[21] Hallgreen and Hansson, "Conflicting Narratives of Deep Sea Mining," 8.

[22] Kim, "Should Deep Seabed Mining Be Allowed?"

[23] Ibid.

[24] United Nations Convention on the Law of the Sea 1982, Part XI.

boundaries of national jurisdiction.[25] Under Part XI of the UNCLOS, the governance of the Area is laid down based on the concept of *Mare Liberum*, which was contested by Hugo Grotius in the 16th century. This concept considers the sea as an area incapable of being owned by any state.[26] This concept is enshrined in Article 137 of the UNCLOS, which stipulates that:

> *"No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized."*[27]

Pursuant to the aforementioned provision, every activity conducted on the seabed areas must be carried out under the regulation and supervision of the ISA.[28] The ISA is expected to supervise every activity in the seabed area to ensure that it is in agreement with the purpose of common heritage of mankind, as stipulated under Article 150, namely, (1) fostering healthy development of the world economy; (2) balanced growth of international trade; and (3) promoting international cooperation for the overall development of all countries, especially developing States.[29]

To implement the virtue of common heritage of mankind and the purpose contained under Article 150, the UNCLOS has tasked the ISA with the responsibility of organizing, carrying out, and controlling activities that take place on the Area.[30] The UNCLOS also governs the organization structure of the ISA as well as how it administers mineral resources as part of the common heritage of mankind, governs the marine scientific research in the Area, and protects and conserves the natural resources of the Area.[31] Tasked with these responsibilities, the ISA is obligated to develop and fill in the legal gap regarding the activities conducted on the Area, especially on the technical aspect of mining.[32] In a bid to meet its obligations, the ISA has issued several regulations, such as technical guidance for environmental impact assessments, an environment management plan, exploration regulations, and drafting exploitation regulations.[33]

In regard to the activities carried out on the Area, Article 153 of the UNCLOS lists the subjects allowed to explore or exploit the Area, which are (1) enterprises of the ISA; (2) States; (3) State enterprises; and (4) natural or juridical persons whom state parties effectively control.[34] Regarding the natural or juridical persons involved in the activities, the UNCLOS requires the private entities to be registered under a state. This allows the said private entities to hold the status of a contractor and the states to act as

[25] United Nations Convention on the Law of the Sea 1982, Article 1(1)

[27] United Nations Convention on the Law of the Sea 1982, Article 137.

[28] United Nations Convention on the Law of the Sea 1982, Article 153.

[29] United Nations Convention on the Law of the Sea 1982, Article 150.

[30] United Nations Convention on the Law of the Sea 1982, Article 153.

[31] United Nations Convention on the Law of the Sea 1982, Section 4.

[32] James Harrison, "The Inernational Seabed Authority and the Development of the Legal Regime for Deep Seabed Mining," *University of Edinburg School of Law Working Paper No. 2010/17*, 2010/17 (Edinburgh, 2010), https://doi.org/https://dx.doi.org/10.2139/ssrn.1609687.

[33] "The Mining Code," International Seabed Authority, accessed February 17, 2022, https://www.isa.org.jm/mining-code.

[34] United Nations Convention on the Law of the Sea 1982, Article 153.

sponsoring states.[35] Moreover, a state-sponsored mechanism also creates an obligation for the state to ensure that the private entities comply with the relevant international regulations.[36]

The UNCLOS also expressly stipulates that every activity conducted by the said subjects can be initiated only after they acquire the ISA's permission. Article 153 further requires the ISA to assess compliance with the elements contained under Annex III of the Convention, such as environmental assessment, monitoring, and due diligence, before issuing a permit.[37]

Liability and Responsibility under UNCLOS

The attempt to shift the source of minerals from land-based mining to seabed-based mining poses a higher risk to the sea ecosystem. Therefore, every entity must take precautionary measures to prevent any catastrophic events in the future. This explains why the UNCLOS has adopted a responsibility and liability regime that governs seabed mining activities.[38]

The drafters of the UNCLOS were well aware of the environmental concerns surrounding deep seabed mining. As a result, the ISA was tasked with the responsibility of protecting the sea ecosystem on behalf of humankind. All activities conducted by state actors or sponsored-private entities must, therefore, be authorized and supervised by the ISA.[39]

Notably, the ISA holds a prominent role in administering the seabed Area, especially to the protection of the marine environment.[40] The role of the ISA also extends to formulating rules, regulations, and procedures necessary to prevent any harmful effect to the marine environment. In this regard, Article 139 of the UNCLOS requires contractors to comply with every provision contained under the Convention and regulations enacted by the ISA. This also extends to the natural and juridical bodies sponsored by states.[41]

As deep seabed mining involves a wide range of actors—including states, state enterprises, private companies, international organizations, and sponsoring states—as well as various rights and obligations, the question of attribution for responsibility and liability arises.[42] In 2008, the UNCLOS's responsibility and liability regime was questioned by Nauru, a developing state that was going to sponsor Nauru Ocean Resources, Inc. Nauru, together with Tonga, sought clarification on the issue of liability from the ISA.[43] In response, in 2010, the ISA requested an advisory opinion from the

[35] Ximena Oyarce, "Sponsoring States in the Area: Obligations, Liability and the Role of Developing States," *Marine Policy* 95 (2018): 1–2, https://doi.org/10.1016/j.marpol.2016.06.002.

[36] United Nations Convention on the Law of the Sea 1982, Article 4 (3) of Annex III.

[37] United Nations Convention on the Law of the Sea 1982, Article 153

[38] Tara Davenport, *Responsibility and Liability for Damage Arising Out of Activities in the Area: Attribution of Liability* (Canada: Centre for International Governance Innovation, 2019).

[39] United Nations Convention on the Law of the Sea 1982, Article 157.

[40] United Nations Convention on the Law of the Sea 1982, Article 145.

[41] United Nations Convention on the Law of the Sea 1982, Article 139; Ximena Oyarce, "Sponsoring States in the Area: Obligations, Liability and the Role of Developing States," 1.

[42] Davenport, *Responsibility and Liability for Damage Arising Out of Activities in the Area: Attribution of Liability*, 1.

[43] Donald Anton, "The Principle of Residual Liability in the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea: The Advisory Opinion on Responsibility and Liability for International Seabed Mining (ITLOS Case. 17)," *McGill International Journal of Sustainable Development Law and Policy* 7, no. 2 (2012): 245–46.

International Tribunal for the Law of the Sea (ITLOS) on three main questions:

1) *What are the legal responsibilities and obligations of State Parties to the Convention with respect to the sponsorship of activities in the Area in accordance with the Convention, in particular Part XI, and the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of December 10, 1982 ("the 1994 Agreement")?*
2) *What is the extent of liability of a State Party for any failure to comply with the provisions of the Convention, in particular Part XI, and the 1994 Agreement, by an entity whom it has sponsored under Article 153, paragraph 2 (b), of the Convention?*
3) *What are the necessary and appropriate measures that a sponsoring State must take in order to fulfill its responsibility under the Convention, in particular Article 139 and Annex III, and the 1994 Agreement?*

Broadly speaking, these three questions can be arranged into three aspects, namely, state parties' responsibility and obligation; state parties' liability; and appropriate measures for a sponsoring state.

1) *State Parties' Responsibility*

As mentioned above, the question of responsibility brings up another issue regarding the attributability of private contractors' actions in seabed mining. Therefore, to address the first question, the ITLOS must clarify the meaning of "responsibility to ensure" of States as contained under Articles 139(1), 153(4), and 4(4) Annex III.

To start with, it is important to consider the fact that the exploration and exploitation of the seabed area requires private contractors to be sponsored by states, either under the circumstances where they are owned by states or under the condition where states effectively control them (e.g., where a state has dominant ownership over a private enterprise's shares).[44] Therefore, Articles 139(1), 153(4), and Article 4(4) Annex III of the UNCLOS task sponsoring states with the responsibility of ensuring that the conduct of the private contractors they sponsor is in line with the requirements of the ISA and UNCLOS.

Consequently, the Tribunal found that the role of sponsoring states is to support the ISA in implementing the requirements of international law (specifically the UNCLOS) with regard to seabed activities.[45] This assistance is expressly provided for under Article 139 of the UNCLOS, which uses the words "responsibility to ensure" to emphasize the role of states. However, this provision is still considered vague, especially when it comes to interpreting the meaning of "responsibility to ensure."[46]

To further clarify this, the ITLOS gave an advisory opinion indicating that the meaning of "responsibility to ensure" is limited only to the obligation of sponsoring states "to ensure" and not "to achieve."[47] Moreover, the ITLOS highlighted five legal instruments that states must ensure private contractors comply with. They include:

a. Part XI of the UNCLOS
b. relevant annexes to the Convention

[44] United Nations Convention on the Law of the Sea 1982, Article 152

[45] United Nations Convention on the Law of the Sea 1982, Article 153.

[46] ITLOS, Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, ITLOS Reports 2011, para. 107.

[47] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 110

c. rules, regulations, and procedures of the Authority
d. the terms of its exploration contract with the Authority
e. any other obligations under the Convention.[48]

In sum, sponsoring states are required to take necessary measures to ensure that activities within the seabed area comply with the requirements of the UNCLOS and ISA.[49] This may include exercising due diligence to ensure that a private contractor is qualified and has complied with all the relevant legal instruments. In other words, states are only required to ensure that all the qualifications listed under the UNCLOS and any related instruments have been fulfilled by the said private actors. This implies that not all the activities of private contractors can be attributed to sponsoring states.[50] The ITLOS gave a clear elucidation on this matter:

> *The sponsoring State's obligation "to ensure" is not an obligation to achieve, in each and every case, the result that the sponsored contractor complies with the aforementioned obligations. Rather, it is an obligation to deploy adequate means, to exercise best possible efforts, to do the utmost, to obtain this result. To utilize the terminology current in international law, this obligation may be characterized as an obligation "of conduct" and not "of result," and as an obligation of "due diligence."*[51]

Moreover, in the advisory opinion, the ITLOS considers the view of the International Law Commission in its commentary on Articles on Prevention of Transboundary Harm from Hazardous Activities 2001, which states that:

> *The obligation of the State of origin to take preventive or minimization measures is one of due diligence. It is the conduct of the State of origin that will determine whether the State has complied with its obligation under the present articles. The duty of due diligence involved, however, is not intended to guarantee that significant harm be totally prevented, if it is not responsibilities and obligations of states with respect to activities in the area (advisory opinion of 1 February 2011) possible to do so. In that eventuality, the State of origin is required . . . to exert its best possible efforts to minimize the risk. In this sense, it does not guarantee that the harm would not occur.*[52]

The ITLOS affirms other types of obligations under Article 153(4) of the UNCLOS, which are considered as direct obligations. These include assisting the ISA, adopting a precautionary approach, adopting best environmental practices, providing recourse for compensation, and conducting an environmental impact assessment.[53]

2) *State Parties' Liability*

Unlike states' obligation, the second question led to the issue of states' liability (i.e., the consequences when states or sponsored entities fail to meet their obligations). This question is intended to ascertain the extent to which states or sponsoring states can be held

[48] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 103-104

[49] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 113

[50] Anton, "The Principle of Residual Liability in the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea: The Advisory Opinion on Responsibility and Liability for International Seabed Mining (ITLOS Case. 17)," 247.

[51] ITLOS, Responsibilities and obligations of States with respect to activities in the Area, para. 110

[52] ITLOS, Responsibilities and obligations of States with respect to activities in the Area, para. 116.

[53] ITLOS, Responsibilities and obligations of States with respect to activities in the Area, para. 121-150. See also, Fatma Muthia Kinanti, "Responsibilities of States Sponsoring Persons and Entities Who Conduct Activities in the International Seabed Area", *Indonesian Journal of International Law* vol. 18, no. 2 (2021): 203-204.

liable when there is a failure to comply with the provisions of the Convention. It refers to Article 139(2) of the UNCLOS and Annex III Article 4(4) of the UNCLOS.

In response to this question, the Tribunal explained that the liability of a sponsoring state is limited only to its primary obligations or the failure to meet its obligations to the applicable law. As mentioned previously, this is described as the "states' responsibility to ensure," which takes us back to the ITLOS's opinion on the first question.[54] Therefore, the sponsoring state is not liable for a private contractor's actions if the state did its best to ensure the private contractor's compliance.

The ITLOS also highlights other measures that can be used to determine whether a private contractor's actions can be attributed to the state. The measures are whether (1) the sponsoring state failed to fulfill its obligation and (2) there is a causal link between the damage and the failure.[55]

The first measure—the sponsoring states' responsibility—has been addressed by the Tribunal in the first question. The responsibility of a sponsoring state is limited only to the "responsibility to ensure," which requires it to exercise the necessary measures as stipulated under the relevant international legal regime.[56] The second measure requires the damage to have a causal relationship between the sponsoring states' failure to meet its obligations and the damage itself.[57] Therefore, not every action of a private contractor can be attributed to its sponsoring state.[58] The ITLOS also reaffirms that the type of liability implied by the UNCLOS does not refer to strict liability or residual liability between the sponsoring state and a private contractor.[59] Instead, every liability must be assessed by considering whether the sponsoring state has fulfilled its obligations and whether there is a causal link between the said failure and the damage.

3) *Appropriate Measures for Sponsoring States*

To answer the third question, the ITLOS had to determine the meaning of "necessary and appropriate measures," as used under Article 139 and Annex III of the UNCLOS. The requirements under Article 139 and Annex III of the UNCLOS generally obligate every state to fulfill its responsibilities in sponsoring or initiating activities on the seabed area. From these provisions, it is evident that a sponsoring state is responsible for ensuring contractors' compliance with the applicable law. Therefore, regarding question three, the ITLOS emphasized the importance of sponsoring states adopting laws and regulations that conform to UNCLOS and ISA regulations and procedures.[60] This opinion points to the need for states to have their own domestic

[54] ITLOS, Responsibilities and obligations of States with respect to activities in the Area. para. 113; See also, I. Plakokefalos, "Seabed disputes chamber of the International Tribunal for the Law of the Sea responsibilities and obligations of states sponsoring persons and entities with respect to activities in the Area," Journal of Environmental Law 24, no. 1 (2011): 133–143.

[55] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 176-177.

[56] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 176-177.

[57] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 181.

[58] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 181-184.

[59] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 188.

[60] ITLOS, Responsibilities and obligations of States with respect to activities in the Area. para. 241, 218-219.

measures to ensure compliance from the contractors themselves.[61]

Adopting domestic law: Current practices

From the advisory opinion above, the ITLOS provided the much-needed guidance on sponsoring states' responsibility, liability, and measures they should adopt before getting involved in deep seabed mining. Therefore, for states to participate in seabed mining, they must first ensure compliance with the established international regulations. The same applies to private contractors, where sponsoring states have the responsibility to ensure that private contractors are qualified to initiate activities in the seabed area. It is also clear that the domestic laws of every state are an indispensable aspect that contributes to implementing international regulations at the domestic level. Under the current international regime, the UNCLOS provides a wide range of opportunities for private actors to take part in seabed mining as long as they are sponsored by states. Therefore, states play a crucial role by creating a national legal system that can enable the said entities obtain a certificate of sponsorship.[62]

Considering the crucial role that national legislation plays, states must formulate proper seabed mining laws under their domestic sovereignty. Klaas Willaert provides a general overview of the elements that most states consider when enacting national laws on deep seabed mining. However, this paper does not address each of these elements in depth. Instead, it highlights the wide-ranging issues that need to be governed within the domestic laws, to illustrate the complexities that may arise in governing the mining activities on the seabed. Regarding this, Willaert found six common factors that states need to consider. They include the following:

a. General Provisions

It is necessary for States to have adequate definitions about every term used to describe seabed mining activities. This includes definitions of the seabed area, mining, exploration, exploitation, and other related terms. Moreover, considering the differences between different legal systems―for example, common law and civil law systems―states must be careful when defining legal concepts to ensure that the intended meaning of a particular provision is in accordance with applicable rules under international law.[63]

b. Relevant Principles of International Law

Adopting international law principles is an important aspect in enacting appropriate domestic laws. For instance, the UNCLOS recognizes various distinct legal principles regarding seabed mining. These include the common heritage of mankind, sustainable development, and the peaceful use principle. According to Willaert, although international principles are not required to be explicitly stated in national legislation, it is possible if the scope or the intended interpretation is the one that is put in the national legislation itself.[64] This can be seen from the following provision:

[61] ITLOS, Responsibilities and obligations of States with respect to activities in the Area., para. 221-222, 226.

[62] Klaas Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," *Marine Policy* 119 (2020): 1.

[63] Willaert, 2.

[64] Willaert, 2–3.

Singapore on Deep Seabed Mining Act 2015:[65]

"The purpose of this Act is to regulate the exploration for and exploitation of resources in the Area by persons sponsored by Singapore under the Convention and the Agreement."

Kiribati Seabed Minerals Act 2017:[66]

"The objects of this Act are:… to provide that Seabed Mineral Activities under Kiribati's sponsorship in the Area must be carried out in accordance with best international practice and in a manner that is consistent with internationally accepted rules, standards, principles and practices, including Kiribati's responsibilities under the UN Convention on the Law of the Sea."

c. Procedural Aspects in Issuing a Certificate of Sponsorship

The UNCLOS allows natural or juridical persons to conduct mining activities on the seabed area if they are sponsored by a particular state. It requires the state to issue a legally sound procedure for private contractors who wish to obtain a certificate of sponsorship. This illustrates the state's obligation to ensure that private contractors meet the necessary requirements according to UNCLOS or ISA regulations. However, only the ISA is authorized to issue a deep seabed mining license. This signifies the important role that the ISA plays in regulating seabed mining.[67]

Moreover, the UNCLOS requires states to have effective control over private contractors. States can achieve this through regulatory control or economic control.[68] To facilitate regulatory control, a state can decide to be a majority shareholder in a mining company.[69]

Procedural matters include various qualifications, such as the basic information of the applicant, activities, purposes, private contractors' financial and technical capability, draft plan for the intended mining activities, and environmental impact assessment report.[70] Besides the basic requirement to apply for sponsorship, public interest is also considered. For instance, Cook Islands' laws require any seabed activity undertaken under its sponsorship to be of benefit to the general public.[71]

d. Rights and Duties of Contractors and Sponsoring States

The essence of the law is to create rights and duties, and this also applies to seabed mining legislation. The role of private contractors must be clearly defined and governed. The same approach is also adopted when specifying the rights and duties of sponsoring states. Article 139 of the UNCLOS and ITLOS's Advisory Opinion requires domestic laws to provide an adequate legal basis for sponsoring states to ensure that private contractors comply with international regulations.

In addition, the duties and responsibilities of sponsoring states must consider the required elements of "responsibility to ensure" as provided for under Article 139 of the

[65] Singapore Deep Seabed Mining Act 2015, Article 3(c).
[66] Republic of Kiribati Seabed Minerals Act 2017, Article 5.
[67] Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," 3.
[68] Article 153 of United Nations Convention on the Law of the Sea 1982
[69] Andres Sebastian Rojas and Freedom-Kai Phillips, *Effective Control and Deep Seabed Mining: Toward a Definition* (Canada: Centre for International Governance Innovation, 2019), 2–3.
[70] Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," 3.
[71] Section 134 Cook Islands Seabed Mineral Act 2019.

UNCLOS and other relevant international legal instruments. For example, sponsoring states are required to conduct monitoring activities, collect records from the mining activities, develop a proper mechanism for applying to the ISA, and facilitate a precautionary approach in undertaking seabed activities. Domestic laws also govern a number of obligations, such as minimum working conditions, protection to marine environment, applying the precautionary approach, and having adequate insurance.[72]

The rights and duties provided for under international law are also adopted by states through several domestic laws. For example, Singapore, through the Deep Seabed Mining Act 2015, requires the licensing process to satisfy the condition stipulated under Annex III, Article 4 of the UNCLOS.[73] This requirement acknowledges the collaboration between the ISA and the Government of Singapore in issuing licenses and monitoring seabed mining.[74]

e. Information and Transparency

When enacting domestic laws, states must also consider the nature of information they can collect from seabed activities. Arguably, seabed-related activities are costly and some information acquired in the course of these activities might be of high value. Therefore, states should adopt strict regulations to ensure information transparency or, where necessary, create a strict confidential system to protect information exclusively meant for private contractors.[75]

f. Monitoring and Enforcement

Domestic laws also govern the monitoring and enforcement aspects of seabed mining. From Willaert's findings, several national legislations have adopted strict monitoring policies, which include vessel inspection, installation, annual document submission, and even minimum technological standards. Several national legislations have also established institutions whose main function is to monitor contractors' activities. Sponsoring states impose administrative and penal sanctions, through these monitoring systems.[76]

Indonesian Law and Deep Seabed Mining

Indonesia is popularly known as the largest archipelago state in the world. Up to 62% of Indonesia's territory is covered by the sea.[77] Therefore, it is not surprising that the Government of Indonesia considers the sea as one of the significant aspects in its effort to develop its economy.[78] The sea area in Indonesia is governed by Law 32/2014 about the Sea. Article 6 of Law 32/2014 about the Sea allows the Government of Indonesia to explore and exploit the international seabed area.[79] Further, the Law also opens the possibility for the Government of Indonesia to conclude international treaties with

[72] Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," 4.
[73] Singapore Deep Seabed Mining Act 2015, Article 7(1).
[74] Singapore Deep Seabed Mining Act 2015, Article 3, Article 16(4).
[75] Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," 4.
[76] Willaert, 5.
[77] "Menko Maritim Luncurkan Data Rujukan Wilayah Kelautan Indonesia," Coordinating Ministry for Maritime Affairs and Investment, Kementrian Koordinator Bidang Kemaritiman dan Investasi, accessed February 16, 2022, https://maritim.go.id/menko-maritim-luncurkan-data-rujukan-wilayah-kelautan-indonesia/.
[78] "Presiden Jokowi Nyatakan Komitmen Indonesia Dalam Perlindungan Laut," Sekretariat Kabinet Republik Indonesia, accessed February 16, 2022, https://setkab.go.id/presiden-jokowi-nyatakan-komitmen-indonesia-dalam-perlindungan-laut/.
[79] Law No. 32 of 2014 on Sea, Article 6.

relevant international organizations within the international seabed area.[80]

The Law also directs the government of Indonesia to formulate other laws that can govern the activities conducted in the seabed area.[81] As a result, Law 3/2020 on Mineral and Coal Mining provides a wider definition of mining law territories ("Wilayah Hukum Pertambangan"), which include the seabed area.[82] This acts as the legal basis to commence deep seabed mining.[83]

The Law 3/2020 provides several changes to the previous law. The key highlight of the amendment is the centralization of the licensing process that confers most of the authority to the Central Government.[84] Law 3/2020 on Mineral and Coal Mining also introduces six new types of mining licenses,[85] whereas Law 4/2009 on Mineral and Coal Mining had only three types of mining licenses.[86]

According to Law 3/2020, all mining licenses can be issued only within the territories covered under mining territories ("Wilayah Pertambangan").[87] Furthermore, the territories must specify the scope of mining law territories,[88] which under Law 3/2020 on Mineral and Coal Mining, not only covers the area of Indonesia's land and sea but also the water column and seabed.[89] Therefore, when issuing a territory, the mining law territory must be considered, which can be achieved through a policy-making process involving the Indonesian Government.[90] The Law 3/2020 on Mineral and Coal Mining also makes it possible for any party to be involved in sea mining activities; however, such a party should seek permission from the relevant institution through the Ministry of Energy and Mineral Resources.[91]

From the foregoing, it is evident that both Law 32/2014 on Sea and Law 3/2020 on Mineral and Coal Mining provide the legal basis to initiate seabed mining in Indonesia. This corroborates the provisions of UNCLOS and ISA regulations, which allow states, in this case, the government of Indonesia, to issue mining permission through policy measures, such as adopting the seabed territory as part of Indonesian's mining territories.

Questioning Law 3/2020 on Mineral and Coal Mining to Commence Deep Seabed Mining

The UNCLOS provides equal opportunities for both developed and developing states to participate in deep seabed mining. Notably, many states are already involved in deep seabed mining because of the minerals already discovered there. The Indonesian

80 Law No. 32 of 2014 on Sea, Article 12.
81 Law No. 32 of 2014 on Sea, Article 12 (2).
82 Law No. 3 of 2020 on Mineral and Coal Mining, Article 1(28a); Idris and Taufik Rachmat Nugraha, "Does the International Community Have Efforts to Protect the Marine Environment from Seabed Mining?", *Sriwijaya Law Review* 5, No. 2 (2021): 283; Indonesian Ministry of Maritime and Investment Affairs. "Webinar on the Work of ISA and State Practices in Regulating Deep Seabed Mining in the Area'. https://www.youtube.com/watch?v=yq1MSWDCBc0&t=3452s (accessed on 16 February 2022).
83 Ibid.
84 Law No. 3 of 2020 on Mineral and Coal Mining, Article 35.
85 Law No. 3 of 2020 on Mineral and Coal Mining, Article 35 (3).
86 Law No. 4 of 2009 on Mineral and Coal Mining, Article 35.
87 Law No. 3 of 2020 on Mineral and Coal Mining, Article 10; Article 35.
88 Law No. 3 of 2020 on Mineral and Coal Mining, Article 9.
89 Law No. 3 of 2020 on Mineral and Coal Mining, Article 1(28a).
90 Law No. 3 of 2020 on Mineral and Coal Mining, Article 9.
91 Law No. 3 of 2020 on Mineral and Coal Mining, Article 17(2).

Government has also expressed its interest to explore the seabed. This is evident from Presidential Regulation No. 16 of 2017 on Indonesian Ocean Policy, which supports the effort to find alternative mineral resources in sea, specifically in the vast area of the international seabed.[92]

The Government of Indonesia has further actualized its interest in deep seabed mining through Law 3/2020 on Mineral and Coal Mining and expands the definition of mining law territories to include the seabed area.[93] Moreover, these amendments allow the Ministry of Energy and Resources to conclude international agreements with relevant organizations to initiate mining in the sea area.[94] Therefore, with the amendments effected by Law3/2020, the Government of Indonesia considers "the Area" as part of its mining law territories, which forms the basis of its mining territories. Moreover, these amendments allow the Government of Indonesia to enter into international agreements with the ISA through the Ministry of Energy and Resources.

However, despite the amendments and possibilities they offer, this paper recommends that seabed mining be governed by a distinctive law that specifically addresses seabed activity. As mentioned in section D, UNCLOS and ISA regulations identify many aspects that need to be adequately governed before seabed mining can be initiated. This includes the rights and duties of sponsoring states and private contractors, the relationship between sponsoring states and the ISA, adopting rules for mining technicalities, and states' responsibility in case of damage. The most suitable legal instrument that can address all these issues is a Statute ("Undang-Undang"). In contrast, under the existing legal regime, Law 3/2020 on Mineral and Coal Mining and Law 32/2014 on Sea only govern seabed activities by instructing the Government of Indonesia to enact implementing legislation.

It is important to note that several states govern the issue of seabed mining under the same law with another law and several states govern this matter separately.[95] Therefore, this paper contends that seabed activities be regulated under the Statute for Indonesian law. The same recommendation has also been put across by Putuhena, who argues that deep seabed mining is inherently classified as a subject whose content is intended to meet the legal needs of society ("pemenuhan kebutuhan hukum dalam masyarakat").[96] In this regard, he refers to Article 10 of Law No. 12 of 2011 on the Formation of Laws and Regulations (Law 12/2011 on the Formation of Laws and Regulations), which requires every matter that relates to any aspect that meets the legal needs of society to be governed by Statute.[97]

This paper construes Putuhena's argument as a sound one. This is because seabed activities cover many wide-ranging aspects that are not only limited to administrative or technical aspects but also contain the rights, duties, responsibilities, and liabilities of every

[92] Presidential Regulation of the Republic of Indonesia No. 16 of 2017 concerning Indonesian Maritime Policy, Appendix 1 Chapter II

[93] Law No. 3 of 2020 on Mineral and Coals Mining, Article 1(28a).

[94] Law No. 3 of 2020 on Mineral and Coal Mining, Article 17 (2).

[95] Willaert, "Crafting the Perfect Deep Sea Mining Legislation: A Patchwork of National Laws," 2.

[96] M. Ilham F. Putuhena, "Urgensi Pengaturan Mengenai Eksplorasi Dan Eksploitasi Pertambangan Di Area Dasar Laut Internasional (International Seabed Area)," *Jurnal Rechtsvinding* 8, no. 1 (2019): 178.

[97] Law No. 12 of 2011 on the Formulation of Laws and Regulations, Article 10.

involved party, including states, international organizations, and private actors. Moreover, the notion of "state responsibility" is a clear indication that the Government of Indonesia must ensure that seabed mining is in accordance with requirements of the Indonesian Constitution as well as the UNCLOS itself. Therefore, as Article 6 of Law No. 12 of 2011 on the Formation of Laws and Regulations (Law 12/2011 on the Formation of Laws and Regulations) requires the implementation of the Indonesian Constitution to be regulated by Statute, seabed activities should also be regulated in the same manner.

IV. Conclusion

Seabed mining offers humankind an alternative for finding mineral resources. This advancement will surely provide a better opportunity to support the digital transformation that inevitably requires raw resources. Moreover, the sea constitution, the UNCLOS, provides an equal opportunity for both developed and developing states to explore the seabed area. With this, it is not surprising that a large number of states, ranging from developed to developing ones, have commenced explorations. As a result, the ISA has formulated regulations to keep up with the current development.

In Indonesia, the government has enacted Law 3/2020 on Mineral and Coal Mining, which further expands the definition of mining law territories to cover the seabed area. Therefore, the Government of Indonesia is capable of issuing seabed mining permits within its territory. However, this paper contends that Law 3/2020 on Mineral and Coal Mining is not suitable to govern the matter of seabed mining, even if the government can enact policies that recognize the seabed area as part of mining territories. This is because seabed mining is not only limited to administrative matters but also involves how the rights, duties, and responsibilities of states should be implemented in the international legal landscape. Therefore, this paper recommends the use of Statute to govern seabed mining activities, as opposed to the current legal regime that depends on implementing regulations.

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