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Deep Seabed Mining and the Common Heritage of Mankind: Myth or Reality?

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ABSTRACT

The deep seabed beyond national jurisdiction holds mineral deposits that have become commercially attractive as the global energy transition drives demand for cobalt, nickel, manganese and copper. Part XI of the United Nations Convention on the Law of the Sea declares the Area and its resources the common heritage of mankind and entrusts their administration to the International Seabed Authority for the benefit of all States, with particular regard for developing countries. This paper examines the distance between that normative promise and the practice of deep seabed mining. It traces the origins of the common heritage principle from Arvid Pardo's 1967 address and General Assembly Resolution 2749 (XXV) to its codification in UNCLOS, sets out its five core elements, and then assesses four practical obstacles: the concentration of exploration contracts in the hands of technologically advanced States and their corporate affiliates, the absence of any operative benefit-sharing, the dilution of Part XI by the 1994 Implementing Agreement including the dormancy of the Enterprise, and the environmental risks of exploitation. The invocation of the two-year rule by Nauru in 2021 is treated as an illustration of how procedural devices can be used to compress regulatory deliberation. The paper concludes that the common heritage principle remains largely aspirational, and proposes a pre-agreed revenue distribution formula, the capitalisation of the Enterprise, an environmental regime that operates as a precondition to exploitation, and governance reform within the Authority.

Keywords: *deep seabed mining, common heritage of mankind, unclos, international seabed authority, part xi, 1994 implementing agreement, benefit-sharing, polymetallic nodules, two-year rule, marine environmental protection*

I. INTRODUCTION

The deep seabed extending beyond the limits of national jurisdiction harbours vast mineral wealth in the form of polymetallic nodules, cobalt-rich crusts and hydrothermal vent deposits. Deep seabed mining refers to the extraction of these mineral resources from the Area, a term defined under the United Nations Convention on the Law of the Sea (UNCLOS), 1982, to mean

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the seabed and ocean floor and their subsoil beyond the limits of national jurisdiction.[1] As demand for critical minerals such as cobalt, nickel, manganese and copper surges in the context of the global green energy transition, the commercial exploitation of these resources has attracted considerable international attention.

To govern this domain, UNCLOS, widely regarded as the 'constitution of the oceans', enshrined the principle of the Common Heritage of Mankind (CHM) under Articles 136 and 137, declaring the Area and its resources to be the 'common heritage of mankind' and placing them beyond national sovereignty.[2] The International Seabed Authority (ISA), established under Part XI of UNCLOS and the 1994 Implementing Agreement, was entrusted with administering the Area on behalf of humanity.[3] However, even though this framework rests on high and ideal principles, putting the Common Heritage of Mankind into practice in deep seabed mining has faced problems of inequality, weak implementation and control by commercial interests. This paper argues that the principle of the Common Heritage of Mankind, though enshrined in UNCLOS, remains largely a myth in practice, as deep seabed mining is increasingly dominated by technologically advanced States and private corporations, undermining equitable benefit-sharing and environmental protection.

II. Conceptual Framework of the Common Heritage of Mankind

The principle of the Common Heritage of Mankind emerged as a transformative concept in international law, articulated by the Maltese Ambassador Arvid Pardo in his landmark 1967 speech before the United Nations General Assembly, where he called for the seabed and its resources to be treated as the common heritage of all humanity.[4] This vision was subsequently formalised in the Declaration of Principles Governing the Sea-Bed and the Ocean Floor adopted by the General Assembly in 1970, and crystallised in Part XI of UNCLOS, 1982.[5]

The CHM principle comprises five core elements. First, non-appropriation: no State or private entity may claim or exercise sovereign rights over the Area or its resources. Second, shared benefits: the exploitation of resources must be carried out for the benefit of mankind as a whole,

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[1] United Nations Convention on the Law of the Sea art. 1(1)(1), Dec. 10, 1982, 1833 U.N.T.S. 3 [hereinafter UNCLOS] (defining 'the Area' as the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction).

[2] UNCLOS, *supra* note 1, arts. 136-137. Article 136 declares that the Area and its resources are the common heritage of mankind; Article 137 provides that no State may claim or exercise sovereignty or sovereign rights over any part of the Area or its resources.

[3] Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, July 28, 1994, 1836 U.N.T.S. 3 [hereinafter 1994 Agreement]; UNCLOS, *supra* note 1, arts. 156-157 (establishment, nature and fundamental principles of the Authority).

[4] Arvid Pardo, Statement to the First Committee of the United Nations General Assembly (Nov. 1, 1967).

[5] G.A. Res. 2749 (XXV), Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction (Dec. 17, 1970); *see* UNCLOS, *supra* note 1, pt. XI.

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with particular regard for the interests of developing States. Third, peaceful use: the Area must be used exclusively for peaceful purposes. Fourth, environmental protection: activities in the Area must be accompanied by the measures necessary to ensure effective protection of the marine environment from their harmful effects. Fifth, intergenerational equity: the resources of the Area must be preserved for present and future generations.[6]

The institutional expression of this principle is the International Seabed Authority, headquartered in Kingston, Jamaica. Established under UNCLOS and the 1994 Implementing Agreement, the ISA is mandated to organise and control all activities relating to the mineral resources of the Area. It grants exploration and exploitation licences, collects fees and, in theory, redistributes benefits to member States, particularly developing nations. The ISA's Enterprise, envisioned as an operational arm to conduct mining activities on behalf of the international community, was designed to be the practical vehicle of the CHM principle.[7] However, as discussed below, the Enterprise has never been operationalised in any meaningful sense, exposing a fundamental gap between the principle's normative promise and its institutional reality.

III. Background and Economic Significance of Deep Seabed Mining

The deep ocean floor contains an extraordinary concentration of mineral wealth. Polymetallic nodules, potato-sized concretions found on abyssal plains at depths of 4,000 to 6,000 metres, contain manganese, nickel, cobalt and copper. The Clarion-Clipperton Zone (CCZ) in the Pacific Ocean alone is estimated to contain more nickel and cobalt than all known land-based reserves combined.[8] Cobalt-rich ferromanganese crusts are found on seamounts and ridges at depths of 800 to 2,500 metres, while seafloor massive sulphides (SMS), forming around hydrothermal vents, are rich in copper, zinc, lead, gold and silver.

The economic significance of these resources has been dramatically amplified by the global push towards decarbonisation. Cobalt, nickel and manganese are essential components of the lithium-ion batteries used in electric vehicles, renewable energy storage systems and consumer electronics. The International Energy Agency has projected that demand for critical minerals

[6] UNCLOS, *supra* note 1, arts. 137, 140, 141, 145. Article 137 states the non-appropriation rule; Article 140 requires activities in the Area to be carried out for the benefit of mankind as a whole, with particular consideration for the interests and needs of developing States; Article 141 reserves the Area for use exclusively for peaceful purposes; Article 145 requires the measures necessary to ensure effective protection of the marine environment from harmful effects arising from activities in the Area.

[7] UNCLOS, *supra* note 1, arts. 153, 156-158, 170 & Annex IV (system of exploration and exploitation, the organs of the Authority, and the Statute of the Enterprise); 1994 Agreement, *supra* note 3, Annex, § 2.

[8] James R. Hein, Kira Mizell, Andrea Koschinsky & Tracey A. Conrad, *Deep-Ocean Mineral Deposits as a Source of Critical Metals for High- and Green-Technology Applications: Comparison with Land-Based Resources*, 51 Ore Geology Revs. 1 (2013).

could rise by up to six times by 2040 under clean energy transition scenarios.[9] This technological demand has intensified commercial interest in deep seabed mining, transforming it from a speculative venture into a commercially viable and geopolitically significant industry. Against this backdrop, the question of whether the CHM principle meaningfully governs resource distribution, or whether it has been eclipsed by commercial imperatives, becomes acutely important.

IV. Practical Challenges Undermining the Common Heritage of Mankind

The most fundamental challenge to the CHM principle lies in the structural dominance of technologically advanced States and their corporate affiliates in deep seabed mining. As of 2024, the ISA had issued 31 exploration contracts, predominantly to entities sponsored by States such as China, Russia, Germany, France, Japan, South Korea and India.[10] Notably absent from this list are developing States that lack the requisite deep-sea technology, capital and navigational expertise. The licensing system ends up favouring countries that already possess advanced technology and capital, so they are the ones who benefit the most. This creates inequality and runs against the CHM principle, which promises equitable access to all countries.

The benefit-sharing mechanism under UNCLOS is at best aspirational and at worst illusory. Article 140 requires that the financial and other economic benefits derived from activities in the Area be shared equitably, with particular regard for the interests and needs of developing countries, and the ISA's Finance Committee was tasked with designing a revenue distribution scheme.[11] However, since no exploitation licence has yet moved into commercial production, no financial benefits have ever been distributed. Moreover, the 1994 Implementing Agreement, negotiated primarily at the insistence of developed States and particularly the United States, which had declined to ratify UNCLOS under the original regime, significantly diluted the redistributive ambitions of the original Part XI. It disapplied the mandatory transfer of technology provisions and restructured the ISA's decision-making so as to give greater weight to industrialised States and major financial contributors.[12] The Enterprise, intended as the operational embodiment of equitable access, was effectively rendered dormant by the 1994

[9] INT'L ENERGY AGENCY, THE ROLE OF CRITICAL MINERALS IN CLEAN ENERGY TRANSITIONS (2021).
[10] INT'L SEABED AUTH., *Exploration Contracts*, https://www.isa.org.jm/exploration-contracts/ (last visited July 25, 2026) (recording 31 contracts for exploration, held by 21 contractors sponsored by 20 States).
[11] UNCLOS, *supra* note 1, art. 140(2); 1994 Agreement, *supra* note 3, Annex, § 9 (Finance Committee).
[12] 1994 Agreement, *supra* note 3, Annex, §§ 3, 5 (restructuring decision-making in the Council through chambered voting and providing that Article 144(2) of UNCLOS, on the mandatory transfer of technology, shall not apply).

Agreement, which allowed it to conduct its initial operations only through joint ventures, a mechanism that has never been used.[13]

Environmental concerns show another way in which the promise of preserving the resources of the Area for future generations remains unfulfilled. Deep seabed ecosystems are among the least understood and most fragile environments on Earth. Mining activities cause direct habitat destruction, generate sediment plumes that can travel hundreds of kilometres and may permanently disrupt chemosynthetic communities around hydrothermal vents. The scientific community has repeatedly cautioned against premature exploitation. A landmark 2020 study by Levin, Amon and Lily in NATURE SUSTAINABILITY emphasised the potentially irreversible loss of biodiversity in mining zones,[14] while a statement signed by more than 700 marine scientists has called for a precautionary pause on exploitation.[15] The ISA has often been criticised for giving more importance to commercial timelines than to environmental protection, which weakens its stewardship responsibility under the Common Heritage of Mankind.

Corporatisation represents a further structural threat to the CHM principle. The predominant model for deep seabed mining involves private corporations sponsoring State applications to the ISA, a mechanism that formally preserves State sponsorship but functionally transfers operational control to commercial entities. Companies such as The Metals Company (formerly DeepGreen), a Canadian firm, have driven aggressive timelines for exploitation in the CCZ, effectively lobbying ISA member States to accelerate licensing. The Metals Company's sponsoring State, Nauru, invoked the so-called 'two-year rule' under the 1994 Implementing Agreement in June 2021, triggering an obligation for the ISA to complete exploitation regulations within two years regardless of their adequacy.[16] This action showed how companies can use legal procedures to their advantage and weaken the fair and inclusive decision-making that the Common Heritage of Mankind requires.

Finally, the ISA itself suffers from significant regulatory weaknesses that undermine its capacity to serve as an effective custodian of the common heritage. Critics have noted a structural conflict of interest at the heart of the ISA's mandate. It is simultaneously tasked with promoting

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[13] 1994 Agreement, *supra* note 3, Annex, § 2(2) (initial operations of the Enterprise to be conducted through joint ventures).

[14] Lisa A. Levin, Diva J. Amon & Hannah Lily, *Challenges to the Sustainability of Deep-Seabed Mining*, 3 NATURE SUSTAINABILITY 784 (2020).

[15] *Marine Expert Statement Calling for a Pause to Deep-Sea Mining* (2022) (signed by more than 700 marine science and policy experts).

[16] 1994 Agreement, *supra* note 3, Annex, § 1(15); INT'L SEABED AUTH., *Nauru Requests the President of the ISA Council to Complete the Adoption of Rules, Regulations and Procedures Necessary to Facilitate the Approval of Plans of Work for Exploitation in the Area* (2021), https://www.isa.org.jm/news/nauru-requests-president-isa-council-complete-adoption-rules-regulations-and-procedures/.

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exploitation and protecting the environment, creating an institutional tension that has historically resolved in favour of commercial progress. The ISA's Council, which approves contracts, is structured to favour industrialised States, and its proceedings have lacked the transparency and inclusivity required for genuine representation of humanity's interests. The Deep-Ocean Stewardship Initiative and other civil society groups have documented instances where the ISA's deliberations have been shaped by contractor influence rather than by the interests of the international community.

V. Recent Developments and Case Studies

The year 2021 marked a critical juncture in deep seabed mining governance. In June 2021, Nauru, acting on behalf of The Metals Company, triggered the two-year rule under the 1994 Implementing Agreement, requiring the ISA to finalise exploitation regulations by July 2023 or, failing that, to consider and provisionally approve applications under the existing framework.[17] This move sent shockwaves through the international community and prompted an urgent debate over whether a moratorium on exploitation licences was needed until scientific understanding of seabed ecosystems improved. Several States, including France, Germany, Chile, Panama and New Zealand, have publicly called for a precautionary pause. The European Parliament passed a resolution in 2022 endorsing such a moratorium.[18]

As of early 2024, the ISA had not completed its exploitation regulations and no commercial extraction licence had been granted.[19] Nevertheless, the invocation of the two-year rule revealed the vulnerability of the CHM framework to procedural exploitation by technologically advanced commercial actors. Meanwhile, the ISA's ongoing negotiations over the Mining Code, the comprehensive regulatory framework for exploitation, have exposed deep divisions between developed and developing States over liability, environmental thresholds and benefit-sharing formulae. The Pacific Island States, whose exclusive economic zones border the most mineral-rich zones, have called for stronger environmental protections and more meaningful benefit-sharing, reflecting the enduring tension between the normative promise of the CHM principle and its governance reality.

VI. Suggestions and Way Forward

For the Common Heritage of Mankind principle to move from aspiration to reality, a number of structural reforms are urgently required. First, the ISA's benefit-sharing mechanisms must be

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[17] 1994 Agreement, *supra* note 3, Annex, § 1(15)(b)-(c).
[18] *European Parliament Resolution Calling for an International Moratorium on Deep-Sea Mining* (2022).
[19] INT'L SEABED AUTH., *Draft Regulations on Exploitation of Mineral Resources in the Area*, ISBA/25/C/WP.1 (2019).

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significantly strengthened. This requires the development of a clear, pre-agreed formula for distributing exploitation revenues to developing States, including landlocked States and small island developing States, before any commercial licences are granted. The dormant Enterprise should be capitalised and activated as a genuine operational entity capable of conducting independent mining activities on behalf of the international community.

Second, the ISA must establish a robust, scientifically grounded environmental protection regime as a precondition to exploitation rather than as a concurrent obligation. This should include mandatory environmental impact assessments, the designation of no-mining protected areas and independent scientific review mechanisms free from contractor influence. Third, governance reform within the ISA is essential. Decision-making processes must be restructured to ensure greater transparency, civil society participation and equitable voting rights for developing States. The current regime's tilt towards industrialised States and corporate contractors must be corrected if the ISA is to serve as a legitimate custodian of humanity's common heritage.

VII. Conclusion

The principle of the Common Heritage of Mankind under UNCLOS was created with an ambitious goal, namely to ensure that the resources of the global commons benefit all of humanity, beyond differences in power and technology. It reflects a strong ideal of fairness and shared responsibility. However, in practice, and especially in deep seabed mining, this principle has not worked as intended. Wealthier and technologically advanced countries continue to dominate access and control, while corporate interests play a growing role in shaping outcomes. At the same time, benefit-sharing mechanisms have weakened, particularly after the 1994 Agreement, and the regulatory role of the International Seabed Authority has faced criticism for being insufficient.

Recent developments such as the use of the two-year rule, the failure to operationalise the Enterprise and delays in creating a fair and environmentally protective Mining Code highlight these issues. Together, they suggest that the principle remains more of an ideal than a reality. Ultimately, international law depends not just on written rules but on genuine commitment and fair governance. Unless stronger institutions, political will and accountability are ensured, the promise of shared benefit may remain unfulfilled, leaving the deep seabed open to unequal exploitation rather than collective gain.

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