



Equity, Benefit-Sharing and Financial Architecture in the International Seabed Area

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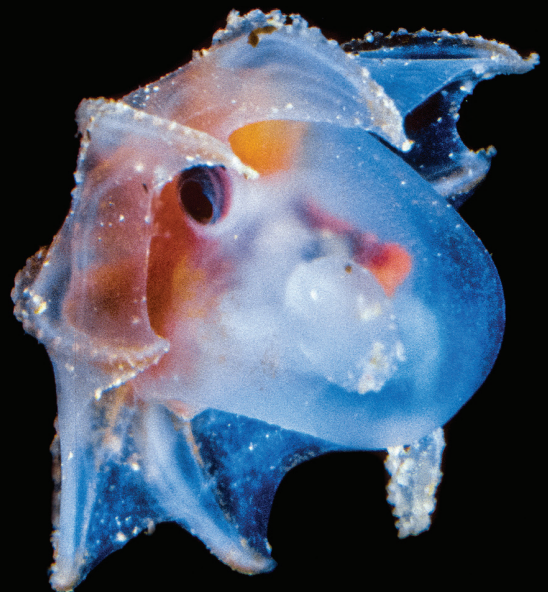


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ACRONYMS

BRICS - Brazil, Russia, India, China, and South Africa

GDP - Gross domestic product

ISA - International Seabed Authority

MIT - Massachusetts Institute of Technology

SIDS - Small Island Developing States

UNCLOS - United Nations Convention on the Law of the Sea

I. Executive Summary

1. Purpose and scope

The principle of equitable sharing of the benefits derived from deep-seabed mining, as articulated in the United Nations Convention on the Law of the Sea (UNCLOS), rests on a legal expectation that any mineral exploitation of the common heritage of humankind be structured in a manner capable of producing demonstrable and material distributive outcomes, with particular regard for developing States. Upon examination of the proposals submitted by the Finance Committee of the International Seabed Authority (ISA) between 2022 and 2025¹, this briefing finds that it remains uncertain whether the proposed benefit-sharing architecture is capable of meeting that expectation. **Behind repeated references to equity and intergenerational justice lies a financial architecture in which the revenues available for sharing are clearly insufficient to sustain or justify industrial deep-seabed mining.**

This analytical brief provides an independent legal, economic and political assessment of the benefit-sharing proposals developed by the ISA Finance Committee on the basis of publicly available documents published between 2022 and 2025. It is intended to inform delegates, decision-makers, journalists and civil society actors engaged in current and forthcoming multilateral discussions on the governance of activities in the Area.

This paper is presented as an independent expert analysis authored by Harvey Mpoto Bombaka² and

Ben Tippet³. It is made available by Greenpeace International, which holds observer status at the International Seabed Authority and commissioned the work, to inform and support public and diplomatic debate. The views expressed herein are solely those of the authors.

2. Methodological clarification

This briefing examines benefit-sharing as only one dimension of a much broader legal, political, ecological, and moral debate surrounding deep-seabed mining. It does not presume the acceptability of such activities, nor does it suggest that higher or more evenly distributed financial returns would, in themselves, render deep-seabed mining legitimate or justify the opening of this new frontier. It further recognises that low or unevenly distributed revenues are neither the sole nor even the primary reason why the commencement of exploitation in the Area remains questionable. Where financial figures and projections are discussed, they are used exclusively as analytical stress tests, designed to assess the distributive implications of the institutional architecture currently under consideration.

These scenarios are purely hypothetical: at present, activities in the Area remain limited to exploration, and no commercial exploitation contract has yet been triggered or implemented, nor could such activation occur in the absence of an applicable regulatory framework for exploitation.⁴

The analysis therefore seeks to determine whether the benefit-sharing proposals formulated to date would be capable, in principle, of generating meaningful and predictable benefit-sharing outcomes consistent with the requirements of UNCLOS, without claiming to be exhaustive or to resolve the broader normative questions surrounding deep-seabed mining.

¹ ISA, ISBA/29/FC/2 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; ISA, ISBA/30/A/8-C/12 https://www.isa.org.jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committeefv-AUV-1.pdf; ISA, Technical Study No. 31 https://www.isa.org.jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

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3. Dual Structure of the Benefit-Sharing Architecture under Review

Importantly, the Finance Committee's work does not proceed on a single track. It combines (i) technical reflection on criteria and formulas for the equitable sharing of potential monetary revenues derived from deep-seabed mining⁵, and (ii) the parallel development of a Common Heritage Fund conceived as an **alternative or complement to direct monetary redistribution**.⁶ This briefing therefore examines both dimensions of the proposed architecture: the size and structure of the distributable monetary base, and the institutional choice to channel revenues through a programmatic, fund-based model focused on research, training and capacity-building.

In this context, it is important to distinguish between two analytically distinct categories of non-financial benefits, which operate under different legal logics. Within the Finance Committee's framework, and in accordance with Article 140 of UNCLOS, non-financial benefits refer exclusively to programme-based advantages derived from activities carried out in the Area and financed by mining revenues, such as research, training, capacity-building, technological cooperation and regulatory support for developing States.⁷ These benefits are institutionally embedded in the proposed architecture and are contingent upon the commencement of exploitation.

By contrast, the non-monetary ecological benefits associated with intact deep-sea ecosystems— such as biodiversity protection, ecosystem integrity, climate regulation and other planetary services—are significantly threatened by mining activities⁸ but do not fall within the scope of Article 140 benefit-sharing mechanisms. While this report focuses on

the benefit-sharing mechanisms within the scope of Article 140, the environmental costs of deep-seabed mining constitute some of the most significant reasons for a moratorium and are discussed at length in other reports⁹.

4. Geographical Focus of the Analytical Brief: African States, Pacific Island States and Brazil

To illustrate the distributive effects of the proposed benefit-sharing system, this analytical brief presents indicative calculations for three representative groups of States within the ISA. These groups were selected to reflect the diversity of economic circumstances and political positions across the membership.

Brazil is included as a major emerging economy and influential member of the BRICS group, whose economic weight and diplomatic posture make it a key actor in the debate. Pacific Island States represent Small Island Developing States (SIDS) located in the region where deep-sea mining exploration is most advanced. These countries currently hold some of the strongest and most visible positions on both sides of the deep-sea mining debate. African States constitute a region comprising a significant number of Least Developed Countries, including Landlocked Least Developed Countries. The African Group has also been one of the strongest regional advocates for allowing more time for discussions on benefit-sharing within the ISA.

These three categories therefore offer a coherent and policy-relevant snapshot of how the proposed system would distribute revenues across markedly different economic and geopolitical contexts.

4 While certain legal interpretations have suggested that, in theory, applications for exploitation could be examined in the absence of adopted exploitation regulations following the expiry of the two-year period referred to in section 1, paragraph 15, of the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea— following the notification submitted by Nauru in June 2021—this possibility remains highly contested. To date, no commercial exploitation contract has been approved or implemented on this basis. Both the Council of the International Seabed Authority and a majority of States have acknowledged that the absence of an adopted regulatory framework for exploitation, combined with unresolved environmental obligations under UNCLOS, precludes the authorisation of commercial deep-seabed mining activities in practice.

5 See: ISA, Technical Study No. 31 https://www.isa.org.jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf; Squires, D. (2025). Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining. Report to the Finance Committee of the International Seabed Authority, April 2025. <https://equitablesharing.isa.org.jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

6 ISA, ISBA/29/FC/2 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; ISA, ISBA/30/A/8-C/12, Section IX https://www.isa.org.jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committee-fv-AUV-1.pdf.

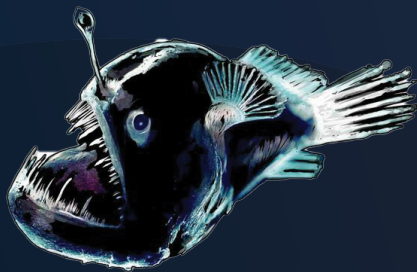
7 ISA, ISBA/29/FC/2, Annex, Draft financial regulations of the Common Heritage Fund, regs.3–4 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf

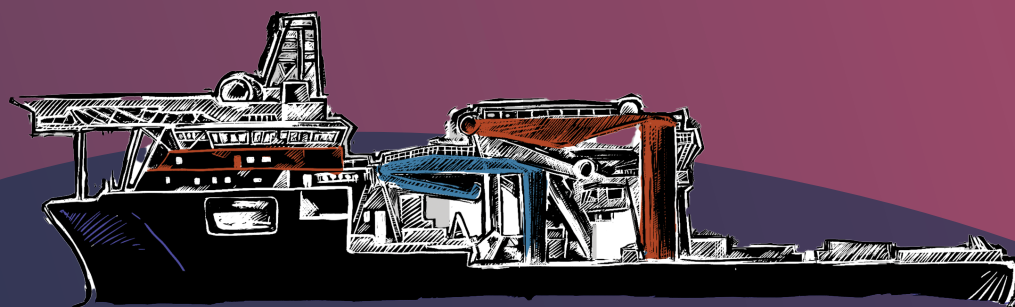
8 Amon, D. et al. (2025). Delivering Benefits to Humankind: Opportunities for the International Seabed Authority Under a Deep-Sea Mining Moratorium. The Deep-Sea Conservation Coalition. pp. 2-7, 13-17 <https://deep-sea-conservation.org/wp-content/uploads/2025/04/Opportunities-for-the-ISA-under-a-Deep-Sea-Mining-Moratorium.pdf>

9 Amon, D. et al. (2025). Delivering Benefits to Humankind: Opportunities for the International Seabed Authority Under a Deep-Sea Mining Moratorium. The Deep-Sea Conservation Coalition. pp. 2-7. <https://deep-sea-conservation.org/wp-content/uploads/2025/04/Opportunities-for-the-ISA-under-a-Deep-Sea-Mining-Moratorium.pdf>

KEY POINTS AT A GLANCE:

- The expected revenues remaining available for distribution to Member States after mandatory internal allocations (administrative costs, the Enterprise, and targeted economic assistance) are extremely limited, making material redistribution structurally residual
- Under a reasonable scenario of six mining sites being opened by the early 2030s, and under the proposed sharing arrangement set out in the 2025 report to the Finance Committee by Dale Squires, countries can be expected to receive the following royalties per year:
 - On average each year, **African countries are expected to receive 0.49% per country** of total ISA royalties. This corresponds to the average country receiving \$344,000 in 2018 US dollars per year in the medium term (2028–2030), \$1,775,000 per year in the long term (2031–2035) and \$3,448,000 per year in the very long term (2036–2056).
 - The average **Pacific Island State is expected to receive \$46,000 per year** in 2018 dollars in the medium term (2028–2030), \$241,000 per year in the long term (2031–2035) and \$468,000 per year in the very long term (2036–2056).
 - **Brazil is expected to receive \$2,334,000 in 2018 dollars per year** in the medium term (2028–2030), \$12,169,000 in the long term (2031–2035) and \$23,638,000 in the very long term (2036–2056).
 - These revenues make up a tiny fraction of GDP, **roughly 0.001% of GDP** year in the medium term - effectively a rounding error in the national accounts.
- **Mining companies will receive the vast bulk of revenues from deep-sea mining** according to the discounted cash-flow model developed for the ISA by a Massachusetts Institute of Technology (MIT) team (referred to henceforth as the “MIT model”). Under the assumption of 6 mines, private mining contractor revenues are expected to receive 98% of the revenues - \$5,439,000,000 annually for all companies in the medium run from 2028-2030. In the long term, their share of revenues marginally decrease to 94% of revenues, equivalent to \$12,096,000,000 per year for all companies. These are the gross revenues that mining companies will receive before fixed and variable costs of setting up and running the mines. The profits of mining companies will therefore be lower, but cannot be reliably estimated on the basis of publicly available information alone.





- **No guaranteed minimum payout floor is currently planned for developing countries**

(including Small Island Developing States in the Pacific), even though the principle of equitable sharing remains affirmed.¹⁰

- Because the residual distributable base is so limited, non-financial benefits become the principal deliverable by default rather than by collective distributive choice, raising a structural distinction between:
 - non-financial benefits chosen as an expression of equity, and
 - non-financial benefits imposed by economic constraint in the absence of redistributable revenues
- The proposed Common Heritage Fund centralises revenues intended to finance ISA-managed research and capacity-building, which are legitimate non-financial benefits under UNCLOS. However, the model does not demonstrate how this programmatic approach would deliver predictable, material benefit-sharing outcomes at scale when distributable revenues are marginal.
- On the legal front (UNCLOS, arts. 136–140, 148, 150, 160(2)(g)), the requirement of effective benefit-sharing is not demonstrated in the absence of a guaranteed minimum payout floor



and clear public triggers¹¹; and although art. 82(4) establishes a parallel obligation for certain coastal States, it likewise lacks any operational criteria guaranteeing concrete distributive outcomes.

- Given all these elements, **calling for a global moratorium on deep-sea mining remains the most coherent position** — not as an ideological stance, but as a measure of legal and institutional precaution required by the absence of demonstrable distributive outcomes under the current interpretation of Part XI of UNCLOS.

¹⁰ See ISA Technical Study No. 31 https://www.isa.org.jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf; ISA, ISBA/29/FC/2, §8–15 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; ISA, ISBA/30/A/8–C/12, Section IX, none of which provide for a guaranteed minimum payout or automatic distributive threshold https://www.isa.org.jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committeefv-AUV-1.pdf.

¹¹ The “triggers” (the order according to which revenues must first cover administrative costs, then the Enterprise, then economic assistance) constitute accounting priorities, not sharing guarantees. As a result, any redistribution remains contingent upon the residual balance left after internal priorities have been satisfied. ISA, ISBA/29/FC/2, §10–12 <https://www.isa.org.jm/wp-content/uploads/2024/05/2407295E.pdf>; ISA, ISBA/30/A/8–C/12, Section IX https://www.isa.org.jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committeefv-AUV-1.pdf.

5. Structural Weaknesses of the Proposed Financial Architecture

Genuine equity does not derive from statements of principle, but from measurable distributive outcomes. From a revenue-distribution perspective, the central weakness of the proposed architecture lies in the structurally limited scale of revenues available for sharing, combined with the absence of binding safeguards ensuring that developing States receive material and equitable, predictable benefits. In such conditions, redistribution is not eliminated, but becomes residual by design.

Where the redistributable base is narrow, allocation formulas – however refined – cannot produce meaningful redistributive outcomes. The central problem therefore does not lie in the weighting formula itself, but in the narrowness of the redistributable base and in the absence of an automatically triggered guaranteed minimum payout floor. This constitutes an additional structural weakness, compounding the many environmental, social and governance risks associated with deep-sea mining.

As a result, non-financial and programmatic benefits increasingly assume a central role within the architecture, not necessarily by deliberate collective choice, but as a consequence of budgetary constraint. However, where such non-financial benefits become predominant, they must be assessed in light of the corresponding non-financial losses associated with mining activities, including the degradation of intact deep-sea ecosystems and the erosion of essential ecological functions. While such benefits are legitimate under UNCLOS, their predominance reflects the limited distributive capacity of the system rather than the realisation of equitable sharing as an outcome.

Taken together, these features indicate that the proposed financial architecture does not, at this stage, demonstrate an ability to deliver predictable and equitable, in both material and distributive terms, benefit-sharing for developing States, despite repeated references to equity within the governing documents.

6. Legal and Political Implications

The proposed benefit-sharing architecture raises a fundamental question as to its conformity with the distributive requirements of UNCLOS. While the allocation remains formally compatible with the Convention, the absence of guaranteed minimum distributive outcomes means that equitable sharing, as required under Articles 136 to 140, is not demonstrated in practice.

In a context where the revenues remaining are insignificant, non-financial benefits tend to assume a dominant role by default rather than by deliberate collective choice. This configuration does not negate the legitimacy of such benefits under UNCLOS, but it raises a normative ambiguity as to whether they can substitute for material redistribution without weakening the common heritage regime as envisaged under Part XI of the Convention.

The current proposals of the Finance Committee, although framed by repeated references to equity, operate in a context where benefit-sharing remains residual and deferred. Given the structurally limited revenues available, developing States would receive only modest and diluted returns. In this configuration, sharing functions more as a management of scarcity than as a corrective to inequality, and the benefit-sharing regime risks losing its normative substance. Compliance with UNCLOS therefore remains, at this stage, more declared than demonstrated.

Taken together, these elements indicate that the current proposals do not yet demonstrate an operationalisation of equitable benefit-sharing capable of meeting UNCLOS expectations, particularly with regard to developing States. In the absence of demonstrable distributive outcomes, calls for a precautionary pause or a moratorium emerge as a legally and institutionally coherent response.



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II. Context and Mandate

1. Legal and Institutional Foundations of the Benefit-Sharing Mandate

The question of whether deep-seabed mining activities should be authorised to proceed, including the modalities of benefit-sharing arising from such activities, is currently situated at a pivotal stage in the global governance of the oceans. The Finance Committee is a subsidiary organ of the International Seabed Authority established under section 9 of the Annex to the 1994 Agreement relating to the implementation of Part XI of UNCLOS. It is mandated to examine financial and budgetary matters of the Authority and to formulate recommendations to the Council and the Assembly. The Committee performs a technical and advisory function and does not possess autonomous decision-making powers. Its role is to support the framework of the Authority by providing financial analysis and guidance, including with respect to mechanisms relevant to benefit-sharing, in accordance with the objectives and principles set out in Part XI of UNCLOS¹².

Since 2022, the Finance Committee has more specifically been tasked with developing technical proposals intended to support a more coherent framework for the redistribution of benefits derived from activities in the Area. Its work takes place within the broader institutional mandate established under Article 140 of UNCLOS and operationalised through Section 9 of the Annex to the 1994 Agreement, which define the Authority's responsibility to operationalise equitable benefit-sharing, with particular regard for developing States.

At this stage, two structural parameters warrant particular attention, as they condition the coherence of any benefit-sharing architecture. First, the distributive promise of the common heritage regime depends on the ability of the system to produce measurable outcomes, not merely on the existence

of an institutional mechanism. Second, where such outcomes are not demonstrated, the legitimacy of the ISA cannot rest solely on financial engineering, but also on its capacity to act as a guardian of the common heritage of humankind, grounded in transparency, traceability and public accountability.

Within this framework, UNCLOS establishes two legally distinct but normatively convergent regimes of benefit-sharing, which together form part of a broader distributive ambition aimed at ensuring that ocean-related activities do not deepen global inequalities. Article 140 concerns the sharing of benefits derived from activities in the Area, recognised as the common heritage of humankind and administered by the Authority. Its distributive focus places particular emphasis on the interests and needs of developing States, which are identified as priority beneficiaries within this system.

Article 82(4), while operating under a different legal logic, similarly reflects a concern for global equity. It requires certain coastal States to make payments or contributions in kind when utilising the non-living resources of the continental shelf beyond 200 nautical miles. These payments, channelled through the Authority, are to be shared among all States Parties, again with specific consideration for developing States, whose developmental needs are given priority in the distribution criteria.

ISA Technical Study No. 31 explicitly recalls, in this respect, that while the 1994 Agreement does not refer to equitable sharing under art. 82(4), the structural similarities between art. 140 (benefit-sharing for activities in the Area) and art. 82(4) (payments from exploitation of the outer continental shelf beyond 200 nautical miles) suggest that it would be “efficient” for the Finance Committee to consider questions of equitable sharing under both provisions in parallel, subject to a strict separation of the funds and potentially distinct classes of beneficiaries.¹³

The origin of the Article 82(4) obligation stems from a political compromise reached during the negotiation of UNCLOS. Many States initially viewed the outer continental shelf as part of the common heritage regime; the eventual recognition of coastal States’ sovereign rights over this zone was therefore

balanced by a compensatory payment mechanism. Its purpose was to ensure that developing States would not be excluded from potential economic benefits linked to the use of these offshore resources.

Taken together, these provisions illustrate that the principle of equitable sharing permeates different parts of UNCLOS’s distributive architecture. They reflect the Convention’s overarching objective of reconciling sovereign rights with the requirement that the benefits derived from ocean-related activities be shared in a manner consistent with global equity. Beyond purely technical considerations, the question of benefit-sharing is directly linked to one of UNCLOS’s founding principles: the recognition of the resources of the Area as the common heritage of humankind. This concept, elaborated in a context of legal and economic decolonisation, was intended to address structural imbalances in global resource governance by ensuring that the exploitation of marine resources would generate benefits extending beyond those actors with the greatest economic or technological capacity.

Within this framework, responsibility for giving concrete effect to this principle rests with the International Seabed Authority, acting through its membership, and, in particular, with the bodies entrusted with shaping and overseeing the financial dimensions of the regime, notably the Finance Committee, whose work carries significant weight in informing how this principle is given concrete effect. Benefit-sharing therefore functions not merely as a budgetary or technical exercise, but as a core component of the mandate to operationalise the common heritage principle through arrangements capable of producing equitable outcomes.

That said, in line with the clarification provided in ISA Technical Study No. 31 regarding the parallel but distinct treatment of Articles 140 and 82(4), and following the analytical delimitation adopted by the Finance Committee itself, the present analysis is deliberately confined to the benefit-sharing regime applicable to activities in the Area under Article 140, and to the financial architecture developed in that context.

12 UNCLOS, arts. 156–157, 160–163 https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf; 1994 Agreement, Annex, Section 9 https://www.un.org/depts/los/convention_agreements/texts/agreement_part_xi/agreement_part_xi.htm

13 ISA, Technical Study No. 31, Introduction and Part VI https://www.isa.org.jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

2. Exercise of the Benefit-Sharing Mandate within the Current Financial Architecture

The proposals presented by the Finance Committee as the framework through which benefit-sharing could be organised under UNCLOS are based, for the purposes of this analytical note, on three key institutional documents made public by the ISA, namely ISA Technical Study No. 31 (2022)¹⁴, ISBA/29/FC/2 (2024)¹⁵ and ISBA/30/A/8-C/12 (2025)¹⁶. In addition, as a theoretical basis, the economic report entitled *Fair, Equitable, Efficient and Just Sharing Royalties from Deep-Seabed Mining*, by Dale Squires (2025)¹⁷, prepared for the ISA Finance Committee, constitutes the latest analytical reference. Taken together, the instruments developed and examined in the aforementioned documents reflect the manner in which the Finance Committee has sought to give operational content to the benefit-sharing mandate conferred upon the Authority under Part XI of UNCLOS.

Article 140 of UNCLOS does not limit benefit-sharing to a single economic modality, but explicitly encompasses both monetary revenues and non-monetary economic advantages. Indeed, paragraph 2 refers to the “equitable sharing of financial and other economic benefits” derived from activities in the Area, thereby establishing a distinction between direct monetary income and broader forms of economic benefit that do not necessarily take a strictly financial form, while Article 140(1) provides that activities in the Area shall be carried out “for the benefit of mankind as a whole,” with particular regard for the interests and needs of developing States. Read together, these provisions indicate that the Convention conceives benefit-sharing as a composite notion, encompassing both monetary returns in the form of revenues and payments and broader non-monetary advantages of an economic nature, linked to knowledge generation, capacity-building and participation in activities relating to the Area.

Importantly, however, Article 140 does not establish a hierarchy between these different forms of benefits, nor does it clarify under what conditions non-financial benefits may legitimately substitute for, or complement, economic redistribution. The provision therefore leaves a significant margin of

discretion to the Authority – and, by extension, to its subsidiary organs such as the Finance Committee – in determining how the balance between financial and non-financial benefits is to be struck in practice. It is precisely within this interpretative space that the current financial architecture is being developed.

Rather than redefining the legal obligation itself, the Committee’s work has focused on identifying practical modalities through which benefit-sharing may be implemented within a financial architecture marked by uncertainty as to future revenues, competing internal budgetary priorities, and the need to ensure the functioning of the Authority.

In this sense, the exercise of the benefit-sharing mandate has progressively been framed as a question of financial design and sequencing: determining what types of benefits may be generated, through which instruments, and at what stage in the allocation process. This approach does not prejudge the legal form that benefit-sharing must take – since UNCLOS does not prescribe a single modality – but it does structure the practical space within which both financial and non-financial benefits are envisaged and operationalised.

The mandate is therefore exercised through a dual register. On the one hand, the Finance Committee has continued to examine the possibility of direct monetary redistribution to States, notably through the development and refinement of allocation formulas intended to operationalise equity. On the other hand, it has increasingly explored programmatic mechanisms – such as funds dedicated to research, training and capacity-building – as alternative or complementary means of giving effect to the principle of equitable sharing.

This duality reflects an inherent feature of the mandate itself: the need to articulate the normative requirement of equitable sharing with anticipated constraints on the distributable revenue base, and to balance outcome-oriented redistribution with administratively manageable forms of benefit delivery. The manner in which this balance has been struck within the proposed financial architecture directly conditions the scope, modalities and beneficiaries of benefit-sharing under Article 140. This approach therefore calls for a careful examination of its concrete distributive effects and of its actual capacity to meet the equity requirements laid down in the Convention.

¹⁴ ISA, Technical Study No. 31 https://www.isa.org.jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

¹⁵ ISA, ISBA/29/FC/2 <https://isa.org.jm/documents/isba-29-fc-2/>

¹⁶ ISA, ISBA/30/A/8-C/12, Section IX <https://isa.org.jm/wp-content/uploads/2025/07/2511052E-1.pdf>

¹⁷ Squires, D. (2025). *Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining*. Report to the Finance Committee of the International Seabed Authority, April 2025. <https://equitablesharing.isa.org.jm/Documents/Fair,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>



III.

Financial Benefit-Sharing: Allocation Models, Revenue Constraints and Budgetary Sequencing

This section examines the financial dimension of benefit-sharing under Article 140 of UNCLOS through the lens of allocation models, revenue constraints and budgetary sequencing as progressively envisaged by the Finance Committee of the International Seabed Authority. It analyses how methodological choices and projected financial assumptions shape the scope of the proposed benefit-sharing approach (1) and modalities of redistribution as a residual outcome, and how these design elements condition the timing, scale and beneficiaries of potential financial transfers (2). By situating the proposed mechanisms within their institutional and economic context, the section lays the analytical groundwork for a subsequent empirical assessment of their likely distributive effects.

1. Methodological Foundations of the Proposed Benefit-Sharing Approach

For the purposes of this analysis, the analytical starting point of the Finance Committee's work on financial benefit-sharing is situated in Technical Study No. 31 of 2022¹⁸, which establishes the

methodological basis for examining sharing formulas within a context where financial redistribution is assumed to be structurally constrained.

The study examines several allocation models, based on demographic, economic or vulnerability-related criteria, and explores the possibility of a redistribution system weighted according to the gross national income and population of member States. While the document is presented as a theoretical analysis, it already highlights an important semantic shift: "benefit-sharing" becomes an exercise in balancing industry profitability, economic efficiency and relative equity, rather than a concrete transfer of wealth to the least developed countries.¹⁹ This conceptual shift constitutes an early indication of a move from redistribution as outcome towards weighting as method, where equity is increasingly framed as an administratively manageable allocation exercise rather than as a distributive entitlement grounded in the collective ownership of resources.

At this stage, the link with the concerns flagged in the Executive Summary becomes explicit: where the redistributable base is anticipated to be structurally narrow, the proposed approach tends to redefine equity primarily through the design of allocation formulas rather than through guaranteed redistributive outcomes. Technical Study No. 31 does not impose binding limits, but implicitly acknowledges that projected net revenues available for redistribution may be limited, uncertain and delayed, once administrative costs, the financing of the Enterprise and economic assistance mechanisms are deducted. The risk, at this preliminary stage, lies in the possibility that equity becomes increasingly justified by reference to methodological sophistication rather than by reference to the scale of redistribution actually achieved. In this configuration, non-financial benefits would tend to operate less as complements to monetary sharing than as functional substitutes for redistribution that the financial architecture might be structurally unable to deliver.

¹⁸ ISA, Technical Study No. 31. https://www.isa.org/jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

¹⁹ ISA, Technical Study No. 31. https://www.isa.org/jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

In addition, Technical Study No. 31 briefly addresses the question of Article 82(4), noting that, although the 1994 Agreement does not expressly mention equitable sharing in that context, the parallels between Article 140 and Article 82(4) make it operationally efficient for the Finance Committee to reflect on both regimes in parallel. At the same time, the study insists that payments received under Article 82(4) (from exploitation of the outer continental shelf) and those linked to activities in the Area under Article 140 must be kept in separate accounts and may involve different classes of beneficiaries, which prevents any simple “merger” of the two streams of revenue.²⁰

Accordingly, these models are not “purely theoretical”: they remain dependent on assumptions regarding an extremely narrow financial base. *Moreover, the uncertainty surrounding the sector’s financial prospects should not, at the design stage, create incentives to multiply exploitation licences for the sole purpose of artificially increasing a limited and uncertain revenue base.* This consideration underscores the importance of ensuring that distributive expectations are not subordinated to speculative assumptions about future revenue generation.

The 2025 economic report by Dale Squires, commissioned by the International Seabed Authority²¹, constitutes a theoretical contribution intended to inform and rationalise the emerging discussions on financial allocation models within the Finance Committee. The report entitled *Fair, Equitable, Efficient and Just Sharing Royalties from Deep-Seabed Mining* (Squires, 2025) constitutes a formalised theoretical framework intended to rationalise and systematise the benefit-sharing logic previously explored in Technical Study No. 31 and subsequently reflected and further elaborated in later policy and financial proposals.

It develops a series of so-called “equitable” formulas, based on economic and philosophical parameters

such as equality of opportunity, individual responsibility and the compensation of structural inequalities. Importantly, the report explicitly re-engages with the question of financial and direct monetary benefit-sharing, seeking to identify conditions under which limited revenues could nonetheless be redistributed in a manner consistent with equity objectives. Rather than redefining the scope of redistribution, the report seeks to optimise potential distributive outcomes within a set of financial scenarios that remain largely hypothetical. It recommends introducing “distribution weights” that marginally redistribute royalties from high-income States towards those with lower incomes, according to their multidimensional vulnerability index.²²

In practical terms, however, the effect of these distribution weights remains extremely limited: they modify only a very small fraction of an already narrow residual revenue pool, producing transfers that are negligible in scale and incapable of altering underlying inequalities under current revenue assumptions. They do not, and cannot, compensate for a redistributable base that is projected to remain minimal. While the report explicitly acknowledges inequalities of opportunity between States with and without mining capacities, it ultimately relies on abstract allocation formulas grounded in income and selected vulnerability indicators²³. These formulas do not resolve the fundamental issue: even where allocation models are theoretically coherent, their distributive impact remains contingent on the size of a revenue base that has yet to materialise. That design choice directs attention toward the operational dimension of the framework—namely, the sequencing of financial flows and the conditions under which any redistribution may occur—rather than toward distributive outcomes themselves.

²⁰ ISA, Technical Study No. 31, Introduction and Part VI. https://www.isa.org/jm/wp-content/uploads/2023/04/ISA_Technical_Study_31.pdf

²¹ Squires, D. (2025). *Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining*. Report to the Finance Committee of the International Seabed Authority, April 2025. <https://equitablessharing.isa.org/jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

²² Squires, D. (2025). *Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining*. Report to the Finance Committee of the International Seabed Authority, April 2025. sections 2.6 and 13. <https://equitablessharing.isa.org/jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

²³ Squires, D. (2025). *Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining*. Report to the Finance Committee of the International Seabed Authority, April 2025. sections 2.6 and 13. <https://equitablessharing.isa.org/jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

2. Priority-Based Financial Flows and the Residual Nature of Redistribution

At the operational level, the distributive implications of the proposed framework become most visible in the sequencing of financial flows, where the order of allocation plays a decisive role in determining whether, when, and to whom any redistribution may occur. Functionally, the envisaged mechanism follows a priority-based scheme of financial flows. Revenues from mining activities would be handled within an allocation framework distinct from the ISA's general budget, before being distributed according to three priorities:

- **Financing of the Enterprise**, a public structure intended to enable the ISA's direct participation in mining activities, constitutes a priority primarily justified by initial capitalisation and the need to ensure a minimum operational capacity. However, no rule on minimum dividends nor any distribution timetable is provided for the benefit of developing States, and any potential surpluses may be reallocated through reinvestment mechanisms, thereby maintaining redistribution within a discretionary logic²⁴. The institutional evolution of the Enterprise since the 1994 Agreement indicates that this priority reflects an administrative and operational requirement rather than a redistributive mechanism. Its functioning relies largely on joint ventures and access to proprietary technologies, distancing it from the role of economic participation initially envisaged during the Third United Nations Conference on the Law of the Sea. Accordingly, the priority accorded to the Enterprise in the allocation sequence cannot, in itself, be equated with a tangible redistributive benefit

for developing States, but rather operates as an institutional cost centre than as a mechanism through which the common heritage of humankind generates material developmental advantages for those with the least capacity to participate in seabed activities²⁵.

- **Financing of the Economic Assistance Fund**, intended to compensate certain developing States for the adverse economic effects of exploitation. Within this architecture, economic assistance is defined as a specific compensatory mechanism established under UNCLOS, designed to address negative economic impacts arising from deep-seabed mining. More specifically, pursuant to Articles 151(10) and 160(2)(l), this mechanism targets a limited category of developing States whose economies are highly dependent on terrestrial mineral exports – such as nickel, cobalt, copper or manganese – and which may be adversely affected by shifts in global commodity prices resulting from the production of marine minerals in the Area. Its scope is therefore selective rather than general: it applies only to developing States that satisfy defined economic-impact criteria linked to vulnerabilities in terrestrial mineral export sectors. Legally and conceptually, this compensatory mechanism is distinct from the obligation of equitable benefit-sharing under Article 140, and operates independently of any general redistributive logic. See Article 151 of UNCLOS, section 10 in fine, and section 7 of the 1994 Agreement.²⁶
- **The transfer of the remaining balance to the Common Heritage Fund**, whose governance is ensured by a Management Board, a Scientific Committee and an audit body. **(This issue will be examined in depth in Section V).**²⁷

24 ISA, ISBA/29/FC/2, §10–12. https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf

25 UNCLOS, art. 170 and Annex IV https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf; 1994 Agreement, Section II https://www.un.org/depts/los/convention_agreements/texts/agreement_part_xi/agreement_part_xi.htm

26 UNCLOS, art. 151 https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf; 1994 Agreement, Annex, Section 10 in fine and Section 7 https://www.un.org/depts/los/convention_agreements/texts/agreement_part_xi/agreement_part_xi.htm

27 ISA, ISBA/29/FC/2, Annex, regs. 8–11 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf



A nodule collector is launched during mining gear testing in the Pacific.

© Marten van Dijk / Greenpeace

**Revenues → administrative expenses → Enterprise / economic assistance
→ Common Heritage Fund [→] possible redistribution.**

This sequencing favours institutional sustainability, but risks subordinating any direct payment to States to the prior coverage of internal priorities, including operational and administrative expenditures, thereby transforming redistribution into a residual variable rather than an outcome-oriented obligation. While economic assistance and benefit-sharing are recognised obligations under UNCLOS, this ordering, at the design stage, already signals a preference for system viability over automatically guaranteed distributive results, which remain contingent on subsequent policy choices rather than being ensured by the architecture itself.

Within this projected framework, countries of the Global South appear less as assured recipients of tangible financial transfers than as potential beneficiaries of a mechanism whose redistributive effects remain uncertain and temporally deferred. The combination of narrow revenue assumptions, residual

redistribution and discretionary governance may result in a model in which access to financial benefits is contingent, postponed and subject to institutional arbitration. The proposed formulas and governance structures thus give rise to a form of deferred financial sharing, whereby the realisation of equity depends less on legal entitlement than on hypothetical future revenue generation and policy choices. Whether this projected configuration is capable of delivering meaningful distributive outcomes, however, cannot be assessed on the basis of institutional design alone. Absent minimum transfer guarantees or binding distributive benchmarks, uncertainty persists as to whether developing States will effectively access financial benefits under Article 140. This uncertainty calls for an examination of empirical indicators and projected revenue scenarios, in order to assess how these design choices translate, in practice, into distributive effects.

A manganese nodule.



IV. Economic Impact Assessment of Financial Revenue-Sharing

This section estimates projected revenues for ISA members and deep-sea mining companies under the following scenario:

- six polymetallic nodule mines in the Clarion–Clipperton Zone will be opened: three mines in the medium term (2028-2030), and a further three mines in the longer term (2031-2056)
- revenues will be distributed between the ISA and mining contractors according to the MIT model
- contractor payments to the ISA will be deducted for ISA administrative costs, compensation payments to land-based mining countries, possible Enterprise costs and repayments to member states for previous contributions
- the amount left for benefit-sharing is allocated to ISA members based on the allocation formula set out in the 2025 report Fair, Equitable, Efficient, and Just Sharing Royalties from Deep-Seabed

The projection of six mines is assumed to be reasonable given that there are currently 31 contracts in force with the ISA related solely to exploration. To correctly interpret the figures presented in this section, it is essential to emphasise that all projections rely exclusively on hypothetical scenarios, not to predict future exploitation trajectories but to test the distributive implications and internal robustness of the proposed benefit-sharing architecture. At present, there is no commercial mining activity in the area. While contractors may advance internal and prospective feasibility assessments, these remain largely non-public and untested at scale. More broadly, empirical experience from extractive sectors suggests that only a limited proportion of exploration

projects ultimately transition to commercial exploitation²⁸. In this context, the six-mine scenario reflects a cautious and illustrative methodological assumption rather than an optimistic one, and is used to assess whether, even under comparatively favourable revenue conditions, the proposed framework would be capable of delivering meaningful redistributive outcomes.

At present, no empirical, independently verifiable evidence exists demonstrating the technological, economic or regulatory feasibility of commercial exploitation in the Area. Such feasibility can ultimately only be confirmed ex post, once operations have been effectively conducted under a fully applicable and operational regulatory framework. We believe six is a reasonable number for how many of these contracts could in theory be converted into mines.

While the MIT model remains the bedrock of the discussions for how revenues will be distributed between the ISA and contractors, it is possible that the latest equalisation measure²⁹ will likely impact this distribution. This brief does not take these equalisation measures into account, as it is not clear how to fully integrate them into the analysis based on available documentation and it will not change the orders of magnitude of the revenue estimates countries will receive.

The analysis unfolds in three parts: (a) projections on the total gross expected revenues to be made from 6 mines and how these revenues will be distributed between Deep-Sea Mining industries (private sector) and the ISA; (b) an analysis of how the ISA revenues will be allocated to member states, with a particular focus on African Group States, Brazil and Pacific Island States; (c) further analysis on the revenues generated by Deep-Sea Mining industries.

A detailed methodological note on the construction of this section is provided in Annex 1. Part (a) utilises extensively the work of Wilde et al., (2023), “Equitable Sharing of Deep-Sea Mining Benefits: More Questions than Answers”. Part (b) utilises the most recent allocation formula set out in the ISA 2025 report on Fair, Equitable, Efficient, and Just Sharing Royalties from Deep-Seabed.

28 World Bank. (2017). *The Growing Role of Minerals and Metals for a Low Carbon Future*. Washington, DC: World Bank. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/207371500386458722>; Crowson, P.C.F. (2008). *Mining Unearthed: The Definitive Book on How Economic and Political Influences Shape the Global Mining Industry*. London: Aspermont UK, ISBN 9780954689339; Tilton, J. E., and Guzmán, J. I. (2016). *Mineral Economics and Policy*. New York: Routledge. <https://www.taylorfrancis.com/books/mono/10.4324/9781315733708/mineral-economics-policy-john-tilton-juan-ignacio-guzman%C3%A1n>.

29 ISA, *An Equalization Measure for Deep-Seabed Mining in the Area* (2024). <https://www.isa.org.jm/wp-content/uploads/2025/07/EqualizationMeasure070725Final.pdf>

30 National Ocean Protection Coalition (2025). *New Report Finds Deep-Sea Mining Has No Clear Economic or Strategic Justification* - Press Release. <https://www.oceanprotectioncoalition.org/dsmfeasibility>; Barnard, Michael, and Lyle Trytten (2025). *A Techno-Economic Assessment of Seabed Mining: American Samoa and Global Implications*. National Ocean Protection Coalition. . . <https://drive.google.com/file/d/1RettUw5s1sn0rHeyDDjVzcBcimieY9e/view>

Beyond the uncertainty highlighted above, a central question concerns economic viability. Available technical and industrial assessments indicate that extraction, lifting, processing and refining costs for polymetallic nodules remain particularly high, while the technological readiness level of these processes remains limited. Recent analysis – including those concerning nodules in the Cook Islands and American Samoa³⁰ – suggest that, despite their cobalt content, it is difficult to generate profits under prevailing market conditions due to mineral composition, separation processes and energy requirements.

1. Projections on the total gross expected revenues to be made from 6 mines

Table 1 displays the expected revenues to be generated from the six mines. These numbers build on the work of Wilde et al. (2023) who use the MIT model to derive a figure for the funds available for equitable sharing by working backwards from a stylised revenue scenario for two polymetallic nodule mines in the Clarion–Clipperton Zone. The first row presents the gross total expected revenues for both the ISA and mining companies per year in the medium, long and very long run from all mines. Gross total expected revenues refers to all revenues that are expected to be made from selling the metals/minerals from the mines, before any costs of running the mines or the ISA are deducted. We present the gross revenues in 2018 USD to keep the numbers consistent with the Wilde et al. (2023) paper - the underlying academic reference for this part of the analysis. \$1USD in 2018 is worth \$1.28USD in 2025.

Following Wilde et al., in the medium run (2028 to 2030), we assume that three of the six mines will start operating below full capacity, extracting metals and minerals that will be sold for a total gross revenue of \$5,550m per year. In the long run (2031–2035) a further three mines will be opened at below full capacity, while the initial three mines will ramp up production to full capacity. During this period, the total expected gross revenues will rise to \$12,600m per year. Finally in the very long run (2036 to 2056), all

six mines will be operating at full capacity, generating total expected gross revenues of \$16,050m per year.

Row 2 and row 3 splits these gross total expected revenues into the royalties for the ISA (row 2) and the mining companies (row 3), according to the MIT financial model. According to this model, a royalty of 2% of the total value of relevant metals recovered for the first five years of commercial production and 6% afterwards is paid to the ISA, with the mining contractor retaining the remaining revenues. The initial 3 mines starting commercial production in 2028 therefore pay a 2% royalty until the end of 2032, and a 6% royalty until they cease production in 2054. The remaining three mines which start in 2031 pay a 2% royalty commercial production until 2036 and then a 6% royalty until they cease production in 2057. Given this allocation it is clear that the vast majority of the revenues are distributed to the mining companies. In the medium term (2028-2030) are expected to receive \$5,439m per year, while the ISA receives \$111m per year. In the long term (2031-2035), the mining companies receive \$12,096m per year while the ISA receive \$504m per year. In the very long term (2036-2056), mining companies receive \$15,087 per year and the ISA receives \$963.

It should be reiterated that these are gross revenues for both the deep-sea mining companies and the ISA, before the fixed and variable costs of setting up and running the deep-sea mines and the ISA are subtracted. The final row of Table 1 estimates the net expected revenues to be distributed to the ISA, after accounting for the costs of running the ISA. Following Wilde et al (2023) the ISA administrative costs are assumed to be \$13m per year, while the compensation payments to land-based mining countries is assumed to be at 25% of the ISA revenues (assumed to be \$27.75m per year in the medium run, \$365m per year in the long run and \$240.75 per year in the very long run). After these costs have been deducted the net royalties that the ISA will expect to receive from six mines are \$70.25m per year in the medium run, \$365m per year in the long run, and \$709.25 in the very long run. These are the revenues that are ultimately distributed out to member states which we now turn to in the next section.

Table 1. Revenue projections to be distributed between the ISA and mining contractors under a six mine scenario \$m 2018 per year

	Medium Term 2028–2030 (\$m per year)	Long Term 2031–2035 (\$m per year)	Very Long Term 2036–2056 (\$m per year)
Total Expected Gross Revenues 6 mines	5550	12600	16050
ISA Total Expected Gross Royalties 6 mines	111	504	963
Mining Companies Total Expected Gross Revenues 6 mines	5439	12096	15087
ISA Total Net Royalties 6 mines	70.25	365	709.25

Note: These figures are adjusted from Wilde et al. (2023). ISA Total Net Royalties ISA Total Expected Gross royalties minus ISA administrative costs (assumed to be \$13m per year) and compensation payments to land-based mining countries (assumed to be at 25% of the ISA revenues). See Table A2 in the appendix for a more detailed breakdown.

2. Impact on ISA member countries

As we can see from above, the ISA in total will receive the following royalties to be paid out to member countries after contractors and administrative costs:

- Medium term (2028–2030): \$70m per annum in 2018 dollars.
- Long term (2031–2035): \$365m per annum in 2018 dollars.
- Very long term (2036–2056): \$709m per annum in 2018 dollars

These are then distributed out to countries based on the allocation formula set out in the 2025 report Fair, Equitable, Efficient, and Just Sharing Royalties from Deep-Seabed Mining: Report to the Finance Committee of the International Seabed Authority by Dale Squires to the financial committee of the ISA. Please see Annex 1 for details on how this is constructed and a full overview of data sources. We discuss the revenues for the three groups discussed above: the African Group, Brazil and Pacific Island States. The appendix shows revenues for all countries.

a. African countries

Table 2 shows the simulated revenues that are expected for each African country. The first column outlines the shares of total ISA revenues that will go to each country.

Table 2. African countries

Country	Share (%)	Medium Term 2028–2030 (\$m) per year	Long Term 2031–2035 (\$m) per year	Very Long Term 2036–2056 (\$m) per year
Algeria	1.2	0.821	4.283	8.32
Angola	0.8	0.555	2.895	5.624
Benin	0.3	0.217	1.13	2.195
Botswana	0.2	0.128	0.67	1.301
Burkina Faso	0.4	0.26	1.357	2.637
Cameroon	0.5	0.35	1.824	3.544
Cape Verde	0.1	0.055	0.288	0.559
Chad	0.4	0.276	1.438	2.793
Comoros	0.1	0.047	0.245	0.476
Congo	0.3	0.182	0.948	1.842
Côte d'Ivoire	0.6	0.396	2.066	4.013
Democratic Republic of Congo	1.3	0.896	4.673	9.078
Djibouti	0.1	0.073	0.379	0.736
Egypt	1.9	1.356	7.069	13.73
Equatorial Guinea	0.1	0.098	0.51	0.991
Eswatini	0.1	0.072	0.375	0.728
Gabon	0.2	0.12	0.627	1.219
Gambia	0.1	0.091	0.477	0.927
Ghana	0.6	0.44	2.295	4.458
Guinea	0.3	0.19	0.993	1.929
Guinea-Bissau	0.1	0.078	0.407	0.791
Kenya	0.9	0.656	3.421	6.645
Lesotho	0.1	0.086	0.447	0.869
Liberia	0.2	0.125	0.651	1.264
Libya	0.4	0.273	1.423	2.764

Country	Share (%)	Medium Term 2028–2030 (\$m) per year	Long Term 2031–2035 (\$m) per year	Very Long Term 2036–2056 (\$m) per year
Madagascar	0.4	0.3	1.562	3.034
Malawi	0.3	0.24	1.249	2.426
Mali	0.4	0.284	1.479	2.873
Mauritania	0.2	0.143	0.745	1.447
Mauritius	0.1	0.105	0.547	1.063
Morocco	0.9	0.642	3.347	6.502
Mozambique	0.5	0.35	1.824	3.543
Namibia	0.2	0.125	0.654	1.271
Niger	0.4	0.288	1.5	2.914
Nigeria	2.7	1.893	9.873	19.178
Rwanda	0.3	0.231	1.205	2.341
São Tome and Principe	0	0.025	0.13	0.253
Senegal	0.4	0.264	1.376	2.673
Seychelles	0.1	0.063	0.328	0.637
Sierra Leone	0.2	0.159	0.83	1.613
Somalia	0.3	0.242	1.26	2.447
South Africa	1.4	1	5.215	10.13
Tanzania	0.9	0.598	3.12	6.06
Togo	0.2	0.167	0.868	1.687
Tunisia	0.5	0.337	1.757	3.412
Uganda	0.7	0.497	2.594	5.038
Zambia	0.4	0.281	1.463	2.842
Zimbabwe	0.4	0.266	1.389	2.699
Average	0.49	0.34	1.775	3.448

On average, each African group country is expected to receive 0.49% of total ISA royalties. Under the assumptions of the six-mine scenario discussed above, this is projected to correspond, on average, to \$344,000 (i.e. \$0.34m) in 2018 dollars per year in the medium term (2028–2030), \$1,795,000 per year in the long term (2031–2035), and \$3,488,000 per year in the very long term (2036–2056).

An activist from Greenpeace Brazil holds a banner reading "Clean Ocean, help build this reality." in Fernando de Noronha, Brazil.





b. Brazil

Table 3 presents the same results for Brazil, which is expected to receive \$2,334,000 in 2018 dollars per year in the medium term (2028–2030), \$12,169,000 in the long term (2031–2035) and \$23,638,000 in the very long term (2036–2056).

Table 3. Brazil

Country	Share (%)	Medium Term 2028–2030 (\$m) per year	Long Term 2031–2035 (\$m) per year	Very Long Term 2036–2056 (\$m) per year
Brazil	3.3	2.334	12.169	23.638
Average	3.3	2.334	12.169	23.638



Greenpeace International activists peacefully confront a vessel in the Pacific.

c. Pacific Island States

Table 4 presents the same results for Pacific Island States. On average Pacific Island States are expected to receive \$46,000 (0.046m) in 2018 USD per year in the medium term (2028–2030), \$241,000 per year in the long term (2031–2035) and \$468,000 per year in the very long term (2036–2056).

Table 4. Pacific Island SIDS

Country	Share (%)	Medium Term 2028–2030 (\$m) per year	Long Term 2031–2035 (\$m) per year	Very Long Term 2036–2056 (\$m) per year
Fiji	0.1	0.068	0.354	0.687
Kiribati	0	0.015	0.079	0.154
Marshall Islands	0	0.011	0.057	0.111
Micronesia	0	0.017	0.088	0.171
Nauru	0	0.02	0.105	0.203
Palau	0	0.029	0.153	0.297
Papua New Guinea	0.3	0.216	1.125	2.186
Samoa	0	0.026	0.133	0.259
Solomon Islands	0.1	0.049	0.254	0.493
Timor	0.1	0.07	0.365	0.709
Tonga	0.1	0.048	0.25	0.485
Tuvalu	0	0.005	0.027	0.052
Vanuatu	0	0.028	0.146	0.283
Average	0.054	0.046	0.241	0.468



Cook Island activists peacefully confront a vessel in Rarotonga port.

Pacific Island states are geographically the closest countries to proposed deep-sea mining areas, particularly in the Clarion-Clipperton Zone of the Pacific Ocean, and thus are likely to experience the earliest and most intense environmental and socioeconomic impacts from mining activities. These impacts could affect marine ecosystems, food security and the livelihoods of coastal communities that depend on ocean resources.³¹ In contrast, one of the most significant current ocean-based revenue streams for many Pacific Island economies comes from tuna fishing: Figure 1 in Bell et al. (2021) shows that industrial tuna fishing access fees contribute on average around 37% of total government revenue (excluding grants) for ten tuna-dependent Pacific Small Island Developing States. While this is comparing well established government revenues with future expected returns from mining, the differences in magnitudes are quite startling. Take for example, the Marshall Islands, where average annual access fees from Tuna was \$31m per year, compared to just an expected revenue of \$11,000 from deep-sea mining in the short run - over 2818 times more.³²

To understand these numbers in more detail, we pick out three sample countries from each group that roughly represent the averages for each group: Zambia, Brazil and Fiji.

In the medium run where only the first three mines are operational, Zambia would expect to receive

\$281,000 in USD per year from 2028 to 2030. This is just 0.001% of Zambia's current GDP converted into 2018 USD for equivalence (see appendix A for details). It is a tiny fraction - effectively a rounding error in the national accounts. In the long run from 2031 to 2035, when all 6 mines are operational, Zambia royalties would only increase to \$1,460,000 in 2018 USD per year (0.007% of current GDP). In the very long run from 2035 to 2056 when all 6 mines are operational and the ISA is receiving the full 6% of royalties, Zambia would receive \$2,842,000 per annum (0.014% of its current GDP).

Turning now to Brazil, in the medium run it would expect to receive 2,334,000 in 2018 dollars per year from 2028 to 2030. This is just 0.0001% of Brazil's current GDP. In the long run from 2031 to 2035, Brazil's royalties would increase to \$12,169,000 in 2018 dollars per annum - 0.0007% of current GDP. In the very long run from 2035 to 2056 Brazil would receive \$23,638,000 per annum - 0.0014% of current GDP.

Lastly, Fiji is expected to receive \$68,115 in 2018 dollars per year in the medium term (2028–2030). This is the equivalent of 0.001% of Fiji's current GDP. In the long run from 2031 to 2035, Fiji's royalties would increase to \$354,000 in 2018 dollars per annum - 0.008% of current GDP. In the very long run from 2035 to 2056 Fiji would receive \$687,000 per annum - 0.015% of current GDP.

31 Alam, L., Pradhoshini, K. P., Flint, R. A., & Sumaila, U. R. (2025). Deep-sea mining and its risks for social-ecological systems: Insights from simulation-based analyses. *PLOS ONE*, 20(3): e0320888. <https://doi.org/10.1371/journal.pone.0320888>

32 Bell, J. D. et al. (2021). Pathways to sustaining tuna-dependent Pacific Island economies during climate change. *Nature Sustainability*, 4(10), 900–910. <https://doi.org/10.1038/s41893-021-00745-z>

3. Impact on Deep-Sea Mining industries (private sector)

We now return to the revenues that will be made from the deep-sea mining companies, i.e. the private sector. As highlighted in Table 1 above, the total expected gross revenue for all deep-sea mining companies under the scenario of six mines, is \$5,439m per year USD in the medium run (2028-2030), \$12,096m per year in the long run (2031-2035) and \$15,087m per year in the very long run (2036-2056), after 2% and 6% royalties have been paid to the ISA.

It is important to note that these are gross revenues before the costs of setting up and running the mines. It is challenging to accurately estimate what percentage of these revenues will be used to cover the costs of deep-sea mining, as costs depend on a complex set of technical, financial, and regulatory assumptions. Deep-sea mining projects are characterized by very large upfront capital expenditures and long project lifetimes. Costs as a percentage of revenues can therefore be very high several years, even in projects that meet investor return thresholds over the life of the mine. Costs and profits margins are thus highly time-varying and sensitive to how capital costs are amortized.³³

a. asymmetries between public and private benefit

The budgetary sequence – administrative costs and ISA internal instruments first, possible redistribution only afterwards – means that the private sector captures the initial economic rents, whereas public

benefits are collectivised on a narrow and deferred basis. Actors with higher technological and institutional capacity internalise a disproportionate share of value, while the international community receives only the residual. At the same time, the environmental costs associated with deep-seabed mining – including ecosystem degradation, biodiversity loss and long-term ecological risk – are effectively socialised, borne collectively and intergenerationally rather than internalised by the primary economic beneficiaries. This misalignment remains structural so long as triggers remain internal and unconstrained by guaranteed minimum payout floors.

b. risk of subsidy-like outcomes

Since the royalty system and Fund governance are organised to preserve the economic viability of the sector before redistribution, the architecture may produce effects akin to implicit subsidies: socialisation of scientific research, environmental monitoring and broader ecological governance costs, and institutional governance costs, combined with the privatisation of initial margins.³⁴ The language of “equity” is thus accompanied by a pro-industry effect, not because explicit subsidies are paid, but because the priority of payment and order of allocations protect the private value chain first, while a significant share of environmental risks and long-term ecological costs remains collectively borne.

This point should be framed with care: non-financial benefits are not “subsidies” by nature, and the

³³ Kirchain, R. et al. (2019). Financial Regimes for Polymetallic Nodule Mining: A Comparison of Four Economic Models. Massachusetts Institute of Technology. <https://www.isa.org/jm/wp-content/uploads/2022/06/mit.pdf>

³⁴ ISA, ISBA/29/FC/2, Annex, regs. 4–8 https://www.isa.org/jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; Squires, D. (2025). Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining. Report to the Finance Committee of the International Seabed Authority, April 2025. chapters 13–16. <https://equitablesharing.isa.org/jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>



proposals do not expressly characterise them as such. However, where non-financial programmes are (i) explicitly conditioned upon the commencement of exploitation, (ii) financed out of a quasi non-existent distributable base, and (iii) embedded in an allocation order that prioritises sector viability before redistribution, they may, in practice, generate effects that are functionally comparable to indirect support for the sector—not by design, but by consequence. The Authority does not explicitly deny this risk, but it does not clearly identify it, name it, or frame it with safeguards.

4. Conclusion of Section IV: who really benefits economically?

Taken together, these elements explain why, even under a payment scenario, countries of the Global South would receive only symbolic amounts; for instance, the average country in Africa would receive around \$344,000 per year in the medium term,

Brazil approximately \$2,334,000, and Pacific Island States as little as \$46,000. These are a tiny fraction of the respective countries' GDPs, close to or even less than 0.001%. Taken together, these figures illustrate the limited distributive capacity of the proposed arrangements. The redistributable base is reduced by the priority given to administrative costs and internal instruments; direct redistribution is deferred and conditional; and the proposed "equity/vulnerability" formulas apply only to the residual portion.³⁵ Conversely, industry and technologically dominant actors retain most of the upstream value, under a regime designed not to compromise profitability. These results confirm that allocation formulas operate within, and cannot compensate for, a structurally minimal revenue base. The limitation lies not in the mathematics of distribution, but in the economic reality that there is simply too little to share. From an economic perspective, these results indicate that the proposed architecture would generate symbolic and uneven transfers, while leaving upstream value largely unaffected.

35 ISA, ISBA/29/FC/2, §10–12 https://www.isa.org.jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; ISA, ISBA/30/A/8–C/12, Section IX https://www.isa.org.jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committee-fv-AUV-1.pdf; Squires, D. (2025). Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining. Report to the Finance Committee of the International Seabed Authority, April 2025. Chapters 13–16. <https://equitablessharing.isa.org.jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

V.

Non-Financial and Programmatic Benefit-Sharing: The Common Heritage Fund

This section examines the increasing reliance on non-financial and programmatic benefits as a central modality of benefit-sharing under the proposed framework. To this end, the analysis proceeds in three stages: first, it examines the consolidation of a programmatic benefit-sharing architecture, tracing the shift from allocation models toward the proposed Common Heritage Fund (1); second, it analyses the method used to operationalise non-financial and programmatic sharing, focusing on the design choices and procedural mechanisms through which such benefits are delivered (2); and third, it assesses the distributive implications of programmatic sharing, with particular attention to how this model shapes access, timing and equity outcomes in practice (3).



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Common Fangtooth *Anoplogaster Cornuta*.

1. Consolidation of a Programmatic Benefit-Sharing Architecture: From Allocation Models to the Common Heritage Fund

Formalised in document ISBA/29/FC/2 (2024), the Finance Committee's approach shifts benefit-sharing away from direct monetary distribution towards predominantly non-financial forms, notably through the proposed establishment of a Common Heritage Fund intended to replace, or at least significantly complement, cash-based redistribution. Building on the methodological premises previously developed, this evolution marks a qualitative shift in the operationalisation of benefit-sharing, recasting redistribution as a programmatic and institutionally managed process rather than as an outcome-oriented entitlement. In this perspective, the proposed Common Heritage Fund, set out in document ISBA/29/FC/2 (2024) and subsequently refined in ISBA/30/A/8-C/12 (2025), centralises mining revenues in order to finance research, capacity-building and sustainable development projects.³⁶ In the 2024 draft financial regulations annexed to ISBA/29/FC/2, this shift is operationalised through a project-funding logic: rather than privileging automatic cash transfers, resources are channelled into activities framed as serving "collective interest" (including research, training, and capacity-building), with benefit delivery occurring through approved programmes.

As already indicated in Section III, the distributable base is not approached as an assured pool available for immediate sharing, but as an amount expected to remain limited, uncertain, and delayed once prior charges are taken into account. The fund-based approach is anchored in the same premise: any allocation to the Common Heritage Fund is dependent on what remains after expenditures and prior commitments have been met. These

priority allocations correspond to the Authority's administrative expenditures, the financing of the Enterprise, and targeted economic assistance mechanisms. The 2024 draft regulations make this sequencing explicit: receipts are processed through an allocation order in which cost coverage and predefined expenditure lines precede any crediting of residual amounts to the Fund. In this sense, programmatic benefit-sharing does not replace the residual logic identified earlier; it extends it into a different modality of delivery.

A further feature of the 2024–2025 proposals lies in the proximity between certain programmatic objectives and the operational ecosystem of seabed exploitation. Research, training, data generation and monitoring are classically recognised as “other economic benefits” within the meaning of Article 140(2), and their value is not in question. The point, rather, is that when such programmes are financed downstream of an allocation order designed to preserve viability and operational readiness before any broader sharing, they may be perceived as reinforcing the enabling conditions of the sector. This concern should be read in continuity with the “subsidy-like outcomes” flagged in Section IV: without any express subsidy being granted, the combination of upstream value retention by contractors and downstream collectivisation of governance and knowledge costs may produce effects comparable to indirect support – through the socialisation of certain enabling expenditures – while distributive transfers remain narrow and deferred.

The role of technology transfer should also be handled with precision. UNCLOS and the 1994 Agreement include obligations and expectations concerning technology-related capacity (classically associated with Part XI arrangements). In the current proposals, the Common Heritage Fund is primarily framed around research, training, and



capacity-building; to the extent that “technology transfer” is referenced, it tends to appear as an outcome pursued through training, partnerships, and capacity-development projects rather than as a direct, enforceable mechanism ensuring access to proprietary technologies. Accordingly, the Fund may support technology-related capability building, but it does not, in itself, resolve the longstanding tension between capacity objectives and the practical constraints linked to proprietary ownership, commercial confidentiality, and contractor-controlled innovation pathways. This distinction matters, because a programmatic fund can finance learning and participation while leaving intact the deeper asymmetries associated with access to, and control over, marine technologies.

2. Method Used to Operationalise Non-Financial and Programmatic Sharing

The method underpinning this shift is presented not as a redefinition of Article 140, but as a pragmatic route for implementing it under conditions of revenue uncertainty. In ISBA/29/FC/2 (2024), the approach rests on three interlocking design choices: (i) centralisation of receipts into a dedicated fund-account framework; (ii) prioritised sequencing of expenditures before any crediting of residual amounts to the Fund; and (iii) delivery of benefits through programme financing rather than entitlement-based transfers.

First, centralisation is achieved by organising mining-related receipts within a fund logic governed by draft financial regulations, including defined purposes, eligible activities, and modalities for financing projects. The effect is to treat benefit-sharing as a managed portfolio of programme expenditures that can be planned, budgeted, and audited, rather than as a distribution triggered automatically by revenue collection.

Second, sequencing is implemented through an allocation order that gives precedence to administrative expenditures, the Enterprise, and economic assistance, leaving the Common Heritage Fund downstream of these lines. This aligns with the broader fiscal logic discussed in Section III: the point is not merely that redistribution may be modest, but that it is positioned after several prior claims, which shapes both its timing and scale.

Third, programme delivery is operationalised through project selection and funding decisions overseen by dedicated governance bodies. The 2024 draft regulations provide for a Management Board, a Scientific Committee, and an audit/performance oversight function, embedding programme choices in procedures that screen, prioritise, and review funded activities. This arrangement converts benefit-sharing into a decision-driven allocation process: benefits accrue

through funded projects approved under defined procedures, rather than through automatic transfers determined solely by revenue inflows.

This approach was reinforced in 2025, when the Finance Committee recommended that the Common Heritage Fund become a principal instrument of sharing policy, while reaffirming that receipts must first be allocated to mandatory purposes such as financing the Enterprise, supporting the Authority's budget, or compensating States affected by declines in terrestrial mineral prices. The concern raised here is not the permissibility of this ordering as such, but its distributive implications: the proposals emphasise "flexibility" and "progressive evolution" without defining a timetable or a minimum payout floor. In practice, sharing becomes adjustable and contingent, while direct redistribution remains legally possible yet not operationally foregrounded. The absence of binding minima is combined with triggers that remain budget-order in nature (cost coverage, prioritisation of items), which defers redistribution and sustains uncertainty as to its materialisation.

3. Distributive Implications of Programmatic Sharing

A programmatic fund can, in principle, give concrete meaning to the "other economic benefits" of Article



Spinner dolphins are seen close to the Rainbow Warrior in the Pacific Ocean.

140(2) by financing scientific knowledge, training pathways, monitoring, and capacity-building. These are not secondary benefits: they may be essential to participation, oversight, and long-term governance. The difficulty arises when the programmatic route becomes the predominant vehicle of sharing under conditions where the residual base is expected to be narrow. In that configuration, programme funding risks operating less as a complement to meaningful financial transfers than as the main, and sometimes only, observable output of benefit-sharing.

The distributive effects flow from three features of the model. First, the ordering of allocations makes programme resources contingent on what remains after prior claims, reproducing the residual logic identified earlier in the financial architecture. Second, a project-based model differentiates, in practice, between those able to access funding and those less able to do so. Application readiness, proposal-writing capacity, scientific infrastructure, and sustained engagement with technical procedures become gatekeeping variables. Where access depends on proposal design, data readiness, co-financing capacity, and continuous engagement with technical requirements, programme benefits are more likely to accrue to those already positioned to meet such demands. Third, where programme priorities

overlap with the enabling needs of exploitation – data generation, compliance frameworks, monitoring capacity, technical training – the risk of subsidy-like outcomes becomes salient: not because non-monetary benefits are inherently subsidies, but because the allocation order may collectivise certain enabling expenditures while leaving upstream value largely retained by contractors.

The proposals do not formally abandon direct monetary redistribution to States; Technical Study No. 31 and subsequent work continue to explore allocation formulas in parallel. Yet the move toward a fund-based approach implies a conceptual rebalancing: equity is expressed increasingly through pooled expenditures and managed programme delivery rather than through direct revenue sharing. This shift has normative consequences. It can transform States from presumptive beneficiaries of a shared resource into applicants competing for project resources under criteria set by the Authority's bodies. It also raises accountability questions, because legitimacy in a common heritage setting depends not only on whether funds are spent, but on whether spending choices can be linked – credibly and transparently – to equitable outcomes.

None of this implies that non-monetary benefits are undesirable or legally insufficient in themselves. The point is narrower and more exacting: the current proposals do not yet demonstrate how a predominantly programmatic approach, operating downstream of prior allocations and without minimum distributive benchmarks, can deliver material, predictable, and broadly accessible outcomes consistent with the distributive aspirations associated with Article 140. As shown by the preceding analysis of revenue constraints and allocation priorities, the Common Heritage Fund currently operates as a managed spending framework, rather than as a benefit-sharing mechanism capable of producing measurable distributive effects.



VI.

UNCLOS

Compliance and Equity Test

The compliance test for assessing whether the proposed mechanisms align with UNCLOS distributive obligations does not consist merely in verifying regular procedures: it concerns the existence of a tangible distributive outcome, accessible in light of Articles 136–140, 148, 150 and 160(2)(g). In the absence of guaranteed minimum payout floors and publicly articulated triggers, the existence of such an outcome cannot be demonstrated.

UNCLOS constitutes the legal foundation of the international regime applicable to the Area and its resources. It enshrines both a principle of distributive justice and an institutional mandate: that of ensuring that the benefits derived from activities in the Area are shared equitably “for the benefit of all humankind”, in particular developing States (Articles 136 to 140). The International Seabed Authority (ISA) is the designated instrument to render this principle effective, not by delegation of sovereignty, but as the institutional steward of the common heritage of humankind. Article 151 section 10 (targeted economic assistance) must be read as complementing, not replacing, the general requirement of equitable sharing (Art. 140).

However, the analysis of recent proposals of the Finance Committee (2022–2025) reveals a growing tension between this legal mandate and the financial logic now dominant within the Authority. Although the rhetoric of “equity” remains omnipresent, the structure of the proposed mechanisms alters its meaning: equity ceases to be an objective of redistribution and becomes a method of administrative weighting.

Article 136 of UNCLOS establishes that the resources of the Area are the “**common heritage of [hu]mankind**”; Article 137 (1) provides that

“[n]o State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources[...]”; and Article 140 (2) further provides that the Authority “[...] shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism [...]”. In addition, Article 150 provides that the activities in the Area must be carried out in a way to “[...]foster healthy development of the world economy and balanced growth of international trade, and [...] promote international cooperation for the over-all development of all countries, especially developing States[...]”. Taken together, these provisions are commonly understood as forming a coherent normative framework, in which the legal regime of the Area is not confined to economic management but is oriented toward broader objectives of justice and solidarity. On this reading, the mandate of the International Seabed Authority extends beyond administrative coordination, encompassing the pursuit of distributive outcomes consistent with the principles articulated in Part XI. Article 160(2) (g) further specifies that the powers and functions of the Assembly consist in deciding “[...] upon the equitable sharing of financial and other economic benefits derived from activities in the Area, consistent with this Convention and the rules, regulations and procedures of the Authority[...]”, thereby conferring on such decisions a normative and operational significance, rather than a merely declaratory character.

Yet, in the absence of clearly established guaranteed minimum payout floors and in the presence of internal triggering mechanisms not constrained by public obligations, the effective scope of this requirement remains fragile. It is important to clarify, however, that UNCLOS does not expressly mandate quantified financial transfers or specify the form that equitable sharing must take. The concern is therefore not that UNCLOS imposes a numerically defined obligation of result, but that expected revenues from deep-sea mining activities, in conjunction with the proposals presently on the table, do not demonstrate how they would give material effect (financial or otherwise) to the distributive aspirations embodied in Articles 136–140.

A Greenpeace International activist a banner reading
"Our Pacific Is Not Yours To Destroy."

© Marten van Dijk / Greenpeace



1. The dilution of equitable sharing into deferred redistribution.

The Common Heritage Fund establishes a mechanism for investment and the financing of projects, but not a system of automatic transfer of revenues. Funds collected pass through several budgetary stages before potentially being reallocated to activities “of general interest”, such as scientific research or training. While such activities constitute recognised forms of benefit under UNCLOS, they do not, in themselves, demonstrate the realisation of equitable sharing as an outcome under Article 140.

In other words, redistribution becomes an optional externality rather than a right grounded in the collective ownership of the Area. Priority recourse to economic adjustment assistance³⁷ changes nothing: it is a selective form of compensation, not a general sharing. Added to this is the ambiguity surrounding the Enterprise: conceived as the vehicle of collective participation³⁸, it is not accompanied by any ex ante obligation of distributive outcome towards States. Without minima or public triggers, the objective of Article 140 (equitable sharing of benefits) remains uncertain, even in the event of profits.

2. The shift of the ISA's mandate towards institutional management.

This trend illustrates what we refer to as the persistent tension between distributive objectives and managerial constraints in the Law of the Sea. The ISA, which was intended to correct this asymmetry, could paradoxically become a vector of consolidation of unequal relations. The Authority was intended to be an institution of economic and environmental justice, a body intended to compensate for structural inequalities between States, not merely an agency for managing financial flows. Yet the framework proposed by the Finance Committee recentres one core element of the Authority's mandate within the scope of this analysis, namely benefit-sharing, on administration, performance and budgetary sustainability.³⁹ This evolution reflects a tension

between the redistributive objectives of Part XI and the managerial logic informing the proposed mechanisms, in particular the obligation to ensure effective participation of developing States in the benefits of the activities in the Area (Article 148). The absence of guaranteed minimum payout floors and the control exercised by technical organs over eligibility criteria weaken the justiciability of equitable sharing; public, enforceable triggers are required to restore the obligation of outcome.

3. The disproportionate impact on developing States.

The Squires report (2025), prepared as an expert input to the ISA Finance Committee – based on gross national income, population and the multidimensional vulnerability index – gives a veneer of equity to a structure that remains fundamentally asymmetrical. In practice, the redistribution achieved through these formulas remains limited in scale, as demonstrated in Section IV, while the principal beneficiaries remain the contracting enterprises and States possessing the technological, financial and industrial capacity to sponsor and control mining operations.⁴⁰ This result runs counter to the spirit of Articles 150 and 160(2) (g), which make the development of developing States a central, not ancillary, objective. Minimum and enforceable triggers are therefore necessary to render the development objective effective.

Taken together, these findings indicate that the current proposals of the Finance Committee do not yet demonstrate how UNCLOS distributive requirements would be operationalised in practice and, in their present form, cannot be said to fully satisfy the Convention's requirements in terms of equity and benefit-sharing. They reflect a restrictive reading of the principle of the Common Heritage, which risks reducing, in practice, its material content to mere institutional coordination. From this perspective, assessing compliance cannot be limited to a formal or procedural review. It implies verifying that the mechanism effectively guarantees

37 UNCLOS, art. 151. https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

38 UNCLOS, art. 170 and Annex IV. https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

39 ISA, ISBA/29/FC/2, Annex, regs. 8–11 https://www.isa.org/jm/wp-content/uploads/2024/05/ISBA_29_FC_2.pdf; ISA, ISBA/30/A/8–C/12, Section IX https://www.isa.org/jm/wp-content/uploads/2025/07/ISBA_30_A_8-ISBA_30_C_12-Report-of-the-Finance-Committee-fv-AUV-1.pdf.

40 Squires (2025). Fair, Equitable, Efficient, and Just Sharing of Royalties from Deep-Seabed Mining. Report to the Finance Committee of the International Seabed Authority, April 2025. Chapters 15–16. <https://equitablessharing.isa.org/jm/Documents/Fair,%20Equitable,%20Efficient,%20and%20Just%20Sharing%20Royalties%20from%20Deep-Seabed%20Mining-Report%20to%20the%20Finance%20Committee%20of%20the%20International%20Seabed%20Authority.pdf>

the economic participation of developing States, the transparency of the decision-making process and the traceability of financial flows. At this stage, the absence of tangible distributive results warrants a prudential examination of whether the current regulatory orientation remains consistent with the spirit and objectives of the Convention.

In conclusion, the equity test applied to the entirety of the Finance Committee's proposals reveals a structural deviation from the mandate conferred on the ISA. Equitable sharing, the

cornerstone of Part XI, recedes behind a model of financial administration in which the logic of budgetary efficiency is not accompanied by safeguards ensuring distributive justice. As mentioned earlier, in seeking to "make the system work", the Authority risks emptying it of its normative substance. In the absence of an explicit recentering on actual redistribution and the sustainable development of countries of the Developing States, compliance with UNCLOS remains, for now, more declared than demonstrated.



A piece of manganese crust



VII. Political and Communication Implications

The current proposals of the Finance Committee, beneath their apparent technical neutrality, carry major political consequences. While they formally preserve the possibility of direct monetary redistribution, the financial architecture they establish tends to relegate such transfers to a marginal, uncertain, and, in practice, largely inoperative role. By contrast, the programmatic channel, structured around an institutionally administered funding mechanism within the International Seabed Authority, benefits from operational continuity and stabilised governance frameworks, thereby becoming the primary vehicle through which benefit-sharing is effectively implemented. This reconfiguration alters the founding balance of the common heritage of humankind regime. This shift, although framed in the language of equity, reshapes how benefit-sharing is perceived and communicated, particularly by and towards developing countries.

Indeed, the model of the Common Heritage Fund⁴¹ introduces a de facto distinction between States capable of accessing funding - that is, those with sufficient human, administrative and scientific resources to meet ISA requirements - and those which, lacking institutional capacity, will remain at the margins of the process. This configuration reinforces an asymmetry already identified above, whereby industrialised countries and their enterprises benefit from institutional stability, while many developing States remain confined to the role of indirect or conditional beneficiaries. The result is paradoxical: a regime intended to correct historical inequalities risks institutionalising them in a new form.

In the current geopolitical context, this configuration also has implications for the political legitimacy of multilateral governance arrangements. For African States, the forthcoming African Union meeting represents a critical moment for political coordination. Even if marine resource governance does not formally appear on the agenda, the meeting provides an opportunity for African States to consolidate shared positions on the governance of global commons,

including benefit-sharing arrangements under UNCLOS. Africa, which has been at the heart of the common heritage concept since the Montego Bay negotiations, finds itself today in the position of observer rather than actor. If the proposals of the Finance Committee were adopted in their current form, the net economic benefits for the region would remain symbolic. Africa, despite its centrality in the historical development of the concept, is now kept at the periphery of decision-making processes. This reality feeds a coherent political narrative: that of a deferred ocean justice, in which proclaimed international solidarity translates into marginal financial transfers. Any financial arrangement perceived as reproducing historical extractive asymmetries under a new institutional framework would face serious challenges of legitimacy on the continent. From this perspective, meaningful benefit-sharing must be material, predictable, and aligned with the development priorities of African peoples. Absent a clear demonstration that commercial deep-seabed mining activities can deliver such outcomes, serious questions arise as to whether they should proceed. The current configuration, in which projected transfers remain largely symbolic, reinforces these concerns. For African States, this context may be understood as reopening a broader discussion on the ethical foundations of the common heritage of humankind. Rather than framing benefit-sharing primarily as an exercise in administrative fund management, such discussions may emphasise the role of the principle as an instrument of equitable and sustainable development. Within this perspective, calls for a precautionary pause or moratorium can be understood as part of a wider reflection on the conditions under which distributive arrangements under UNCLOS can retain their ethical and political legitimacy. Similar concerns, albeit articulated through different political and ecological lenses, emerge in other regional contexts.

In Brazil, the debate lies at the crossroads of environmental diplomacy and industrial policy. As an influential member of the Global South and a key actor within the BRICS, the country has an interest in denouncing a system that, under the guise of multilateralism, consolidates technological dependence on the North. Brazil can thus become a narrative pivot between African States and Pacific Island States, emphasising that the promise of equitable sharing will not materialise through algorithmic formulas, but through a political

rebalancing of the regime. In this perspective, the Finance Committee's proposals appear as an operational recentering on the administration of flows, where the original ideal of UNCLOS – a system based on distributive justice – tends to recede behind the pursuit of “efficient governance.” This dynamic suggests that, for many actors in Brazil and across Latin America, a system that organises “sharing” without producing meaningful redistributive outcomes risks perpetuating rather than correcting existing asymmetries.

For Pacific Island States, the implications of the proposed benefit-sharing architecture are often assessed through the combined lenses of economic vulnerability and environmental exposure. These States, whose economies and societies are closely linked to marine ecosystems, are located in regions where industrial interest in deep-sea mining is most advanced, while the prospective economic returns associated with the proposed sharing mechanisms remain uncertain and limited. Under the current configuration, their participation in the Common Heritage Fund is primarily envisaged through programme-based benefits, such as training, research, capacity-building and related forms of technical cooperation, rather than through predictable and sustained budgetary transfers. This situation has contributed to growing concerns regarding the balance between risks assumed and benefits received, particularly where non-financial benefits, even when framed in terms of capacity development or technology-related support, are not accompanied by demonstrable material redistribution. In such contexts, questions arise as to whether modest and uncertain financial returns could nonetheless be invoked as part of the political justification for advancing deep-sea mining activities, despite their limited development impact when assessed against the ecological, social and intergenerational risks involved. This highlights the close relationship between environmental protection and distributive equity within the common heritage regime, without presuming a uniform position among Pacific Island States.

These three regional narratives, African, Brazilian and Pacific, converge towards the same conclusion: the proposed mechanisms, far from guaranteeing the promised equity, risk anchoring a new structural dependence between North and South. They highlight a central tension: the disproportion

between the discourse of global justice carried by the common heritage regime and the economic reality of redistributive flows. This contradiction underscores the need to refocus the system on its primary purpose, international economic justice and deep ocean stewardship, rather than on mere administrative efficiency.

Taken together, these converging regional perspectives invite a broader institutional reflection. In this context, the current situation reinforces the view that the International Seabed Authority should more fully assume its role as a steward of the deep-seabed, with a primary focus on science, knowledge generation, and equity. This orientation becomes particularly salient where the distributive justification for exploitation remains insufficiently established or demonstrably weak. Such an evolution would depend on States choosing to prioritise these functions within a precautionary approach, reaffirming stewardship and collective interest as guiding principles of governance in the Area.⁴²

States may therefore wish to consider halting the progression of the current benefit-sharing proposals in order to allow for a full reconsideration of the framework and its implications. This approach aims to foster an informed and balanced discussion on benefit-sharing mechanisms, by articulating the legal, economic and environmental dimensions of the common heritage regime.

In sum, the political implications of the Finance Committee's proposals go beyond the narrow technical framework: they redefine the boundary between economic justice and administrative governance. Without the integration of concrete corrective mechanisms, they risk transforming the common heritage of humankind into the common heritage of industry. Benefit-sharing only makes sense if it corrects inequalities, not if it manages them.



VIII.

Recommendations and Way Forward

Demonstrable distributive safeguards and full transparency in benefit-sharing emerge as minimum conditions for political legitimacy and public trust when assessing the current benefit-sharing proposals. These safeguards are framed here not as technical prescriptions, but as criteria for assessing whether the current proposals meet the equity obligations embedded in UNCLOS. Benefit-sharing arising from activities relating to deep-seabed resources constitutes a decisive test for the credibility of the multilateral system and for the future of the principle of the common heritage of humankind. Although the ISA Finance Committee has taken an important step by proposing an institutional and financial structure, the mechanisms in their current configuration do not yet evidence compliance with UNCLOS distributive aspirations nor material economic equity for countries of the Global South.

In order to restore the balance between governance, distributive justice and sustainability, several orientations are necessary. In this perspective, the present briefing does not seek to design or recommend any operational benefit-sharing regime; it identifies the limitations of the current proposals, showing why maintaining the current trajectory without corrective safeguards would be incompatible with an equity-based interpretation of UNCLOS.

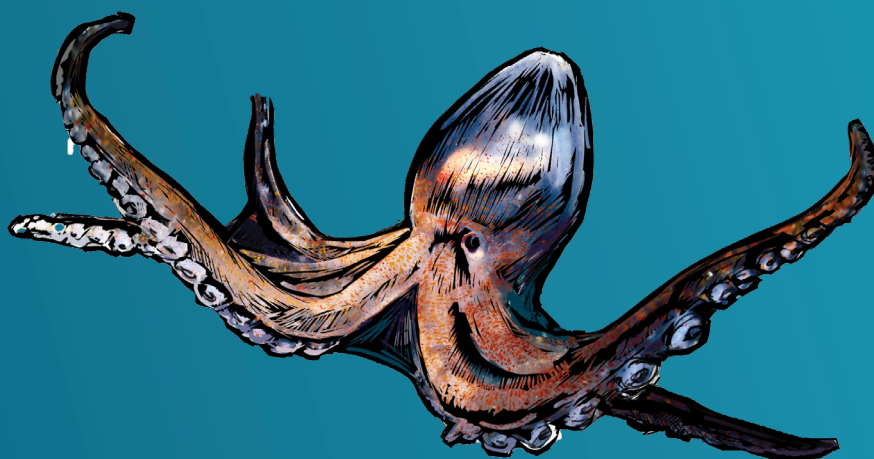
1. Reform options and institutional safeguards

First, it is essential to make clear, before any governance mechanisms are approved, that explicit and enforceable distributive safeguards be articulated within any Common Heritage Fund model.⁴³ These guarantees are invoked here as political and legal benchmarks for assessing the legitimacy of proposed configuration, rather than as technical drafting proposals. Their purpose is

to emphasise that, under the current architecture, demonstrable equity has not yet been evidenced or operationally secured by the Authority.

In parallel, States Parties, and developing States in particular, should ensure that the work of the Finance Committee is effectively directed and framed by the political organs of the Authority, so that its recommendations remain anchored in the consultative and technical functions established by UNCLOS and the 1994 Implementing Agreement, rather than acquiring de facto normative or policy-shaping force through technocratic interpretation alone. In this respect, the Council retains a central responsibility in guiding the Finance Committee's work and in assessing its proposals against the distributive objectives of Part XI. These adjustments must reaffirm UNCLOS obligations, particularly those relating to equitable development and intergenerational solidarity. They also require clarifying that economic assistance is a strictly compensatory instrument, distinct from general redistribution. The central point is that, without verifiable distributive outcomes (monetary or otherwise), the system cannot claim to satisfy the equity standard that UNCLOS imposes as an organising principle. Pending such reform, and in light of persistent scientific and distributive uncertainties, a global moratorium on deep-sea mining emerges as the position most consistent with international law and the precautionary principle. This is not a refusal of progress, but an act of collective responsibility aimed at preserving the legitimacy of the common heritage regime in the face of the risk of premature and inequitable implementation. What the moratorium is not: it does not block science or capacity-building; it ensures that no industrial deployment will take place under conditions that fail to demonstrate equity, transparency and environmental integrity.

In this light, the moratorium is framed as a safeguard: it should remain in place as long as existing regulatory pathways risk deepening inequalities, undermining ecosystem integrity, or eroding the credibility of the common heritage of humankind.



2. Key Takeaway

At a moment when decisions on the future governance of the deep-sea are approaching a critical juncture, the political context presents a unique opportunity to place questions of equity, legitimacy and global justice at the centre of the debate on marine resource governance. Regions and States that have historically been marginalised within international economic regimes, including many developing countries, are particularly well placed to articulate broader call for universal ocean justice, grounded in the principle that the resources of the deep-seabed constitute a collective heritage of humankind. States may therefore wish to consider halting the progression of the current benefit-sharing proposals at the March 2026 ISA meetings, and to reflect, in the lead-up to the July 2026 ISA session, on the suitability of a global moratorium on deep-seabed mining in light of the benefit-sharing, governance and legal-coherence issues documented in this briefing, based on the right of peoples to participate equitably in the collective wealth of the blue planet. The moratorium is framed here as a principled stance grounded in equity, legality and collective responsibility.

The common heritage of humankind is not merely a legal category: it is a universal political project, that of an economic humanism applied to the oceans. Reducing it to a management mechanism betrays its emancipatory potential. Safeguarding this vocation requires re-examining the direction of governance itself, with a view to reasserting distributive justice as a core organising principle, aimed at preventing the consolidation of structural inequalities and preserving the legitimacy of the common heritage regime.

In conclusion, the way forward does not lie in accelerating exploitation, but in strengthening the legal and moral legitimacy of the regime. The moratorium is not an obstacle to progress, but a step of collective wisdom: one that ensures that the deep ocean, the last frontier of the common good, does not become the frontline of a new global inequality.

Only a regime capable of evidencing real benefit-sharing outcomes – not residual or symbolic ones – can claim fidelity to both the letter and the spirit of UNCLOS and the common heritage of humankind.

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Annex :

Methodological Note on the Computation of Royalty Sharing Allocations

1. Constructing Royalty Shares

This methodological appendix describes the computation of international royalty shares used in the accompanying report. The objective is to reproduce the method set out in the Fair, Equitable, Efficient, and Just Sharing Royalties from Deep-Seabed Mining: Report to the Finance Committee of the International Seabed Authority by Dale Squires.

The model integrates three pillars: population shares, structural vulnerability (MVI), and inequality-of-opportunity weights derived via Random Forest regression. These components are combined into a geometric-mean aggregation rule, as this is the suggested royalty sharing scheme outlined on page 5 of the executive summary. Let country i have population pop_i , MVI $_i$, fairness weight ω_i , and final share S_i . Population share is defined as:

$$pop_share_i = pop_i / \sum_j pop_j.$$

The MVI enters as a multiplicative measure of structural vulnerability, while ω_i adjusts for unfair income differences.

To construct the inequality-of-opportunity weights, the following method is used. Firstly, we define a set of circumstance variables that are used to estimate GNI_hat_i , using random forest regressions. We have aimed to define the variables as close to that set out by Dale Squires in Table 3 of their report, which are described in the descriptive statistics table below. In total we have 66 countries that enter into the regression, given data availability.

Table A1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Life Expectancy at Birth 2023 Years World Bank	210	73.63	7.18	54.462	86.372
Expected Years Schooling Children of Age 5 Entering Education System 2022 World Bank	195	13.598	3.124	5.635	21.687
Probability of Survival to Age 5 2018 World Bank	173	.971	.029	.877	.998
Human Capital Index 2020 0-1 World Bank	173	.561	.139	.292	.879
Access to Electricity 2022 % of Population World Bank	209	87.843	22.661	5.4	100
People Using Safely Managed Sanitation Services 2022 % of Population World Bank	132	58.544	31.28	0	100
Government Efficiency Index World Governance Indicators	206	.005	.997	-2.391	2.144
Labor force participation female 2024 % of total labor force World Bank	181	41.896	9.193	6.804	54.719
Agricultural Land % Land Area 2022 % of total land World Bank	207	37.25	22.532	.449	84.554
Urban Population 2024 % Total Population World Bank	210	62.426	23.469	13.88	100
Median Age of Population 2023 AGE UN	226	31.143	9.807	14.32	59.625
Median Age of Population Squared 2023 AGE UN	226	1065.64	629.086	205.062	3555.141
Multivariate Vulnerability Index MVI 0 - 100 UN	141	52.851	8.409	32.1	72.9
Population 2024 No. people UN	210	38650449	1.450e+08	9646	1.451e+09
GNI in 2015 (constant 2015 US\$) World Bank	198	3.775e+11	1.620e+12	56981797	1.852e+13

To incorporate an equality-of-opportunity principle into benefit sharing, we estimate the portion of cross-country income differences that can be attributed to circumstances - structural factors plausibly beyond a state's direct control. This is referred to in the document as unfair GNI_hat_i . To estimate unfair GNI_hat_i we follow the report and estimate it using a Random Forest regressor. A Random Forest averages predictions from many decision trees built on bootstrap resamples of the data and random subsets of predictors, reducing overfitting and improving out-of-sample performance. In the implementation, missing values in circumstances are imputed using the median (via SimpleImputer), and the model is fit with $T=600$ trees and a fixed random seed for reproducibility; cross-validated R^2 is reported where the sample size permits. There are 137 countries in the final dataset.

The fitted model produces predicted income for each country:

$$GNI_hat_i = f_hat(c_i)$$

which we interpret as the component of income "explained" by circumstances alone—i.e., the unfair (circumstance-driven) income in the inequality-of-opportunity framework. The more unfair is inequality of opportunity due to circumstances, the larger GNI_hat_i will be. We then transform these predictions into an inequality-of-opportunity distribution weight:

$$\omega_i = \text{GNI_hat}_i / \text{GNI_bar}$$

Where GNI_bar is the global mean income. Values $\omega_i > 1$ indicate that a country has more unfair inequality of opportunity due to circumstances, and the more they will be compensated. In the royalty-sharing formula, ω_i enters multiplicatively (alongside population share and vulnerability) so that countries with more unfair inequality of opportunity receive a larger share of benefits. The three components are combined symmetrically:

$$\text{geom_factor}_i = (\text{pop_share}_i)^{1/3} * (\text{MVI}_i)^{1/3} * (\omega_i)^{1/3}$$

$$S_i = \text{geom_factor}_i / \sum_j \text{geom_factor}_j$$

2. Benefit Calculations

Wilde et al. (2023) derive the figures reported for funds available for equitable sharing by working backwards from a stylised revenue scenario for two polymetallic nodule mines in the Clarion–Clipperton Zone. Their approach has three main steps: (i) projecting the International Seabed Authority’s (ISA) gross income from contractor payments; (ii) deducting certain “pre-sharing” uses of those revenues; and (iii) treating the residual as the amount available for benefit-sharing under Article 140 of UNCLOS.

3. Gross ISA revenue from six polymetallic nodule mines

For gross revenue projections, Wilde et al. rely on the discounted cash-flow model developed for the ISA by a Massachusetts Institute of Technology (MIT) team. Kirchain et al. (2019) model a single polymetallic nodule operation and explore payment regimes in which the ISA levies a royalty of 2% of the gross metal value in the early production years, rising to 6% thereafter.

Using the same technical and economic assumptions as the MIT model (mine size, recovery rates, long-run metal prices, capital and operating costs), Wilde et al. replicate a scenario with two such nodule mines, each eventually producing 3 million dry tonnes of nodules per year. We simply scale their numbers up by 3 times to reach our example with 6 mines. The timing assumptions are:

- Mines 1-3 start commercial production in 2028, reach full production by 2030, pay a 2% royalty until end-2032, then 6% until closure in 2054.
- Mines 3 to 6 start in 2031, reach full production by 2033, pay a 2% royalty until end-2035, then 6% until closure in 2057.

Under this six-mine, 2–6% royalty regime, they compute average gross ISA revenues (royalties plus relatively small fixed fees) per year over three periods (all in constant 2018 US dollars) as presented in table A2 below.

Firstly, regarding ISA administrative costs they assume that once exploitation begins, the ISA’s regular administrative budget - previously covered by assessed contributions - will be financed from mining revenues. They use a flat USD 13m p.a. (2018 dollars) as the gap between the ISA’s budget requirement and existing exploration fees in 2022, and treat this as the minimum share of contractor payments that must be top-sliced to run the Authority. This is acknowledged as a conservative estimate because future regulatory and monitoring functions (inspectorate, data management, compliance) will likely push costs higher.

Regarding the economic assistance fund, the article says that the ISA may provide “economic adjustment assistance to assist developing countries which suffer serious adverse effects on their export earnings or economies resulting from a reduction in the price of an affected mineral”. Faced with large conceptual and empirical uncertainties, Wilde et al. assume, for illustrative purposes, that 25% of gross ISA mining revenues is allocated to this fund. This top-down share is justified by: (i) the potentially significant

downward pressure on manganese prices from even two mines; (ii) the likelihood that claims include lost export earnings and broader macroeconomic losses; and (iii) the political influence of land-based producers at the ISA.

Moreover, we do not assume any deduction for the Enterprise or reimbursement of past contributions. Although UNCLOS provides for the Enterprise as an operational arm of the ISA and the Finance Committee has floated the idea of using future revenues to reimburse states' past contributions, Wilde et al. do not deduct any amount for these items in the central calculation. They argue that the Enterprise is unlikely to require large financing in the short or medium term, and that reimbursement of historical contributions is not clearly grounded in UNCLOS and would reduce the benefits available to "humankind as a whole".

Wilde et al. stress that these are illustrative scenario values rather than forecasts: they depend critically on the assumed number and timing of mines, the 2–6% royalty regime, the flat ISA budget assumption, and the stylised 25% allocation to the economic assistance fund. They use them to show that, under plausible scenarios, the total sums available to the ISA for equitable sharing remain modest relative to global income - on the order of USD 0.001% of ISA members' combined GNI - and that the politics of pre-sharing deductions will materially shape any benefit-sharing regime. We find very similar orders of magnitude to them.

Table A2 presents the full set of results that underpin the main results in Table 1. All results are in millions of USD (2018) per year in the medium, long and very long run as set out in the main paper.

1. The first row is from Wilde's projections of revenues for 2 mines.
2. The second row scales this up to 6 mines by multiplying by 3.
3. The third row is the ISA gross revenues for 2 mines from Wilde.
4. The fourth row scales this up to 6 mines by multiplying by 3.
5. The fifth row gives the revenues to the mining companies, which are just the difference between total revenues and ISA gross revenues for 2 mines respectively.
6. The sixth row gives the revenues to the mining companies for 6 mines.
7. The seventh row is the ISA budget, which is assumed to be 13m per year from Wilde regardless of how many mines there are. This is the budget for running the ISA
8. The eighth row is the economic assistance fund budget for 2 mines, which is assumed to be 25% of the gross ISA revenues as discussed above.
9. The ninth row is the economic assistance fund budget for 6 mines, which is assumed to be 25% of the gross ISA revenues.
10. The tenth row is the ISA Net revenues for 2 mines (i.e. row 3 - row 7 - row 8)
11. The eleventh row is the ISA Net revenues for 6 mines (i.e. row 4 - row 7 - row 9)

Table A2. Revenue projections to be distributed between the ISA and mining contractors under a six mine scenario \$m 2018 per year

	Medium Term 2028– 2030 (\$m)	Long Term 2031–2035 (\$m)	Very Long Term 2036–2056 (\$m)
Total Revenues 2 mines	1850	8400	5350
Total Revenues 6 mines	5550	12600	16050
ISA Gross Revenues 2 mines	37	168	321
ISA Gross Revenues 6 mines	111	504	963
Mining Company Revenues 2 mines	1813	8232	5029
Mining Company Revenues 6 mines	5439	12096	15087
ISA Budget 2 mines	-13	-13	-13
Economic Assistance Fund 2 mines	-9.25	-42	-80.25
Economic Assistance Fund 6 mines	-27.75	-126	-240.75
ISA Net Revenues 2 mines	14.75	113	227.75
ISA Net Revenues 6 mines	70.25	365	709.25

3. Expressing revenues as a percentage of GDP for Zambia, Fiji and Brazil.

Table A3 sets out the data for expressing the revenues as a percentage of GDP for Zambia, Fiji and Brazil. The data for GDP for Zambia, Brazil and Fiji has been taken from the World Bank. We start by using the latest GDP figures (2024) from the World Bank in current USD. We then convert this to 2018 USDs, in order to make the GDP figures consistent with the revenue figures as calculated earlier in this report. The percentage shares are then estimated accordingly, as shown in Table A3.

Table A3. Expressing revenues as a percentage of GDP for Zambia, Fiji and Brazil.

Variable	Zambia	Fiji	Brazil
GDP in current 2024 USD	25,300,000,000	5,970,000,000	2,190,000,000,000
conversion 1\$ in 2025 to 1\$ in 2018	0.78	0.78	0.78
GDP in 2018 USD	19734000000	4656600000	1.70820E+12
Revenues medium	281,000	68,115	2,334,000
Revenues long	1,460,000	354,000	12,169,000
Revenues v long	2,842,000	687,000	23,638,000
% of GDP in medium	0.001	0.001	0.0001
%of GDP in long	0.007	0.008	0.0007
% of GDP in v long	0.014	0.015	0.0014

This paper is presented as an independent expert analysis authored by Harvey Mpoto Bombaka and Ben Tippet. It is made available by Greenpeace International, which holds observer status at the International Seabed Authority and commissioned the work, to inform and support public and diplomatic debate. The views expressed herein are solely those of the authors.



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Back Cover Image: A nodule collector is launched during mining gear testing in the Pacific. © Marten van Dijk / Greenpeace