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Report and recommendations of the Finance Committee

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Report of the Finance Committee

Development of rules, regulations and procedures on the equitable sharing of financial and other economic benefits derived from activities in the Area pursuant to section 9, paragraph 7 (f), of the annex to the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982

Report of the Finance Committee

I. Introduction

1. At its twenty-fourth session, in 2018, the Finance Committee discussed the impact that the preparation of draft regulations on the exploitation of mineral resources in the Area might have on its workplan. The Committee identified several areas that required its input, including the formulation of rules, regulations and procedures on the equitable sharing of financial and other economic benefits derived from activities in the Area (hereinafter referred to as “equitable sharing”).

2. The Finance Committee noted that the limited existing literature concerning the issue of equitable sharing included a report of the Secretary-General of the United Nations, issued in 1971 for the Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction, on the possible methods and criteria for the sharing by the international community of proceeds and other benefits derived from the exploitation of the resources of the Area beyond the limits of national jurisdiction.¹ Although the principle of equitable benefit-sharing was broadly agreed, the detailed mechanics of the issue did not receive significant attention during the Third United Nations Conference on the Law of the Sea.

* New dates of the in-person meetings originally scheduled for July 2020.

¹ [A/AC.138/38](#) and [A/AC.138/38/Corr.1](#).



3. The report addressed the development of equitable sharing criteria and was aimed at providing the basis for a conceptual approach. It included the following list of non-financial benefits: expansion of world mineral resources; orderly development of resources; protection of the marine environment; enlarging the number of nationals with seabed technical competence; increasing the knowledge of the marine environment and seabed area; stability of raw material markets; and preferential access to raw material for less developed countries. Financial benefits, on the other hand, were found to consist of the balance remaining after deduction of the expenditure (e.g. for personnel, supplies, training and research) from the revenues of the international machinery to be established. The report also contained a list of alternative criteria for the distribution of benefits, which were classified into two categories: direct distribution to Governments; and allocation to programmes of particular interest to developing countries. According to the report, before net proceeds reached a sufficiently large volume, direct distribution to all Governments might lead to a fragmentation of financial resources, which would result in benefits of modest significance to the receiving countries. During that initial period, there might be some advantages to concentrate available proceeds in programmes of high priority, such as the promotion of development in the least developed countries.²

4. The Finance Committee requested the Secretary-General to prepare a report for the twenty-fourth session to assist the Committee in its consideration of the question of equitable sharing. In his report,³ the Secretary-General identified key elements requiring interpretation and elaboration and made suggestions as to how the Committee might conduct the development of rules, regulations and procedures in parallel with the development by the Legal and Technical Commission of the regulations on the exploitation of mineral resources in the Area. The Committee took note of the report and requested the Secretary-General to prepare a technical study, including suggested sharing criteria, for consideration at the twenty-fifth session.⁴ The Committee also noted the importance of advancing in parallel the implementation of article 82, paragraph 4, of the United Nations Convention on the Law of the Sea, which refers to equitable sharing of payments and contributions derived from the exploitation of resources on the continental shelf beyond 200 nautical miles, while avoiding the duplication of work.

5. In response to the request made by the Finance Committee, a report on criteria for the equitable sharing of financial and other economic benefits derived from deep seabed mining was prepared, with the assistance of a consultant. The Committee considered the report, including at a joint meeting with the Legal and Technical Commission held on 9 July 2019, and reported on its discussions to the Council and the Assembly at the twenty-fifth session.⁵ On the basis of the questions raised by the Committee and the additional issues identified, a supplementary report was prepared, with the assistance of a consultant, for consideration by the Committee at the twenty-sixth session. The supplementary report presented and evaluated, according to widely accepted measures of relative inequality and global social welfare, three alternative formulae for the fair and equitable allocation of a given sum of royalties available for distribution. The Committee also requested, and was provided with, a web-based model to enable it to visualize and compare the impact of each formula on any member of the International Seabed Authority under the different scenarios. Those reports were considered further by the Committee during its meetings in 2020.

6. Without prejudice to its discussion of a formula for equitable distribution, the Finance Committee also considered whether an alternative or supplemental approach

² Ibid., para. 47.

³ [ISBA/24/FC/4](#).

⁴ See [ISBA/24/A/6](#).

⁵ [ISBA/25/A/10-ISBA/25/C/31](#).

might be the establishment of a global fund that could be used to support global public goods, investment in human and physical capital or deep-sea research and conservation. A suggestion was also made that the fund could also support the establishment of regional marine scientific and technological centres, as provided in articles 276 and 277 of the Convention. More broadly, such a fund could support and enhance knowledge about the deep sea, which is a global public good, and, accordingly, constitute a means to operationalize the concept of the common heritage of humankind. Such knowledge includes, for example, scientific knowledge about the marine environment of the Area, capacity-building for the integrated participation of developing States in the work of the Authority and for the sustainable development of deep seabed mining (such as enlarging the number of nationals with seabed technical competence), and research and development of new technology that minimizes the environmental impact of deep seabed mining. The Committee also took note of the discussions in the Council during the first part of the twenty-sixth session, during which delegations had emphasized the need to consider a fund dedicated to environmental research and training, which should be separate from the proposed environmental compensation fund, and noted that a number of proposals had been made to broaden the reach of such a fund to cover, for example, research to generate information for the review of regional environmental management plans.

7. Without reaching any decision, and without prejudice to its overall discussion on the issue of equitable sharing, the Finance Committee requested the secretariat to provide it with a report further developing the concept of a global fund. In response to that request, the secretariat, with the assistance of a consultant, prepared in 2021 a report on the structure and purpose of a “seabed sustainability fund”, which was considered by the Committee at its resumed meetings during the twenty-sixth session.⁶

8. Having considered the various reports prepared for its consideration and after discussing the issue, the Finance Committee reached the conclusion that it was time to report its initial findings and considerations to the Council and the Assembly with a view to seeking guidance on how to proceed. The Committee noted that several issues required clear policy guidance from the Assembly and that it would not be appropriate for it to continue to develop rules, regulations and procedures for equitable sharing without such guidance.

9. The present report summarizes the main elements considered by the Finance Committee and sets out the key policy choices that need to be made by the Assembly.

II. Preliminary considerations

10. The Finance Committee focused its discussions on the problem of equitable sharing of financial (monetary) benefits from deep sea mining. For the purposes of those discussions, and the present report, the Committee made two basic assumptions. The first, and key, assumption is that a payment mechanism for deep-sea mining is agreed and that revenues are flowing to the Authority under that mechanism. A second key assumption, which is important for the purposes of testing the models set out in the report, is that deep-sea mining has reached a stage where mining operations are under way in the Area (although those may be at different stages of production), and a steady stream of payments is being made. Without making those assumptions, it is not possible to model and understand the full impact of each potential distribution formula.

11. It is likely that deep-sea mining will start on a relatively small scale, with activity expected to increase over time as technology develops and contractors

⁶ A summary version of the report is available in document [ISBA/26/FC/8](#). A synthesis of the full report is reproduced in ISA Technical Study No. 31 (forthcoming).

become more experienced. Once a conceptual approach has been agreed, therefore, it will be necessary to give more detailed consideration as to how the system should be implemented in its early stages, before revenue reaches a steady state, for example, whether a minimum fund should be built up before the first distribution, whether funds should be invested pending distribution, the frequency of distribution (monthly, annual or biannual) and other operational and administrative questions. Those issues are not considered in the present report.⁷

12. Although the present report and the discussions in the Finance Committee focus on the distribution of financial benefits from deep-sea mining, it is important to bear in mind that the Convention, through its article 140, gives equal weight to non-monetary benefit-sharing as a means of giving effect to the overall objective of benefit to humankind. There is no limit to the category of non-monetary benefits, and all those benefits are not easily quantifiable, as they may change over time. For example, the fact that the Convention establishes a legal regime for the Area that limits access to resources and prevents unrestrained exploitation is itself a benefit to humankind and a global public good. This is implicit in the Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction adopted by the General Assembly in 1970 (resolution [2749 \(XXV\)](#)), in which the Assembly called for the establishment of an international regime to “provide for the orderly and safe development and rational management of the Area and its resources”. The purpose of the international regime is to create and enforce a set of rules and standards governing deep-sea mining and related activities, including marine scientific research in the Area, that balances the need for resource extraction with the preservation of the marine environment.

13. Several of the non-monetary benefits that flow from the international regime for the Area are identified in article 150 of the Convention, which sets out the policies relating to activities in the Area. Those policy objectives are also restated in the draft regulations on the exploitation of mineral resources in the Area.⁸ To those objectives may be added the protection of the marine environment of the Area through the rules, regulations and procedures of the Authority; capacity-building, which is mandatory in the case of the training programmes required of contractors and developed through international cooperation in the case of programmes developed through the Authority; increased knowledge of the marine environment and the deep sea (including through international cooperation in marine science and the sharing of the results of marine scientific research in the Area carried out pursuant to articles 143 and 144 of the Convention); and the transfer of marine technology.

III. Applicable legal provisions

14. Provisions concerning the equitable sharing of benefits from activities in the Area are found in article 140, paragraph 2, article 155, paragraph 1 (f), article 160, paragraphs 2 (f) (i) and (g), and article 162, paragraph 2 (o) (i), of the Convention and in section 9, paragraph 7 (f), of the annex to the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982.

15. Article 140 (see annex I) derives from the aforementioned Declaration of Principles. Activities in the Area must be carried out for the benefit of humankind as a whole, and the Authority is to provide for the equitable sharing of financial and other economic benefits derived from activities in the Area. Although the Convention

⁷ See ISA Technical Study No. 31 for a summary of key operational issues that will require consideration.

⁸ [ISBA/25/C/WP.1](#).

establishes the general principle, it provides little guidance on how article 140 may be implemented, leaving it to the Assembly to adopt rules, regulations and procedures, as explained below.

16. The reference to article 160, paragraph 2 (f) (i), is to identify the organs of the Authority that are entrusted with functions in relation to the implementation of article 140. Article 160, paragraph 2 (f) (i), provides that the powers and functions of the Assembly include the consideration and approval, upon the recommendation of the Council, of the rules, regulations and procedures on the equitable sharing of financial and other economic benefits derived from activities in the Area and the payments and contributions made pursuant to article 82, taking into particular consideration the interests and needs of developing States and peoples who have not attained full independence or other self-governing status. If the Assembly does not approve the recommendations of the Council, it is to return them to the Council for reconsideration in the light of the views expressed by the Assembly. The 1994 Agreement also provides that decisions of the Assembly and the Council are to take into account recommendations of the Finance Committee on the issue of the rules, regulations and procedures mentioned above and the decisions to be made thereon (annex, sect. 9, para. 7 (f)).

IV. Status of revenue received from deep sea mining

17. Pursuant to article 171 of the Convention, all amounts received in connection with activities in the Area are treated as the “funds of the Authority”. It is important to note, however, that not all those funds will be available for equitable sharing. How the funds must be allocated is specified in article 173, paragraph 2. What will be available for sharing will be the net funds remaining after payment of the various items specified in article 173, paragraph 2, and subject to the provisions of the 1994 Agreement.

A. Administrative expenses of the Authority

18. The administrative expenses of the Authority shall be a first call upon the funds of the Authority. At present, those expenses are funded by assessed contributions from member States, determined according to the scale used for the regular budget of the United Nations, adjusted for differences in membership. Over time, as revenue from deep-sea mining increases, assessed contributions will theoretically be reduced, although that reduction may be temporarily offset by an increased demand for budgetary resources. The current annual budget of the Authority is approximately \$10 million, but it can be expected that this amount will increase as deep-sea mining activity increases and there is a need to fund additional programmes, including an inspection and monitoring programme.

19. In that regard, the Finance Committee took note of a separate report by the Secretary-General on the future financing of the Authority,⁹ in which it was explained that the Authority would need to increase its current capacity significantly to become an effective regulator of future deep-sea mining. A significant increase in funding would be required in the period before commercial mining begins. There is likely to be a period of several years during which member States will need to support the Authority’s transition to a fit-for-purpose regulator. Once the first plan of work for exploitation is approved and commercial production begins, the financial burden will begin to shift from member States to contractors.

⁹ ISBA/26/FC/7.

20. In those circumstances, the Finance Committee suggested that consideration be given to the possibility that, from 2023, necessary increases in the administrative budget beyond zero real growth increases could be treated as advances against future revenue, which would be repaid pro rata and progressively once revenue from deep-sea mining begins to flow.¹⁰ If applied as a temporary measure, this would have no long-term impact on the distribution of revenues, but would enable Governments to invest in the institutional strengthening necessary to ensure that the Authority can carry out its functions under the Convention and the 1994 Agreement.

B. Funds allocated to the Enterprise

21. Although it is stipulated in article 173 of the Convention that the funds of the Authority may be used to provide the Enterprise with funds in accordance with article 170, paragraph 4, the application of that provision was significantly adjusted under the 1994 Agreement. The Agreement provides that States parties shall be under no obligation to finance any of the operations in any mine site of the Enterprise or under its joint venture arrangements and that the provisions of article 170 shall be interpreted accordingly (annex, sect. 2, para. 3, of the Agreement). In particular, the obligation of States parties to fund one mine of the Enterprise (previously contained in annex IV, art. 11, of the Convention) has been removed.

C. Economic assistance fund under article 151, paragraph 10

22. Under article 151, paragraph 10, of the Convention, the Assembly shall establish a system of compensation or take other measures of economic adjustment assistance, including cooperation with specialized agencies and other international organizations, to assist developing countries that suffer serious adverse effects on their export earnings or economies resulting from a reduction in the price of an affected mineral or in the volume of exports of that mineral, to the extent that such reduction is caused by activities in the Area. Such system is to be established by the Assembly upon the recommendation of the Council based on advice from the Economic Planning Commission.

23. The 1994 Agreement includes several important modifications to the implementation of that provision. First, it is provided that the functions of the Economic Planning Commission are to be carried out by the Legal and Technical Commission until such time as the Council decides otherwise, or until the approval of the first plan of work for exploitation. Second, the implementation of article 151, paragraph 10, is further qualified under section 7 of the Agreement, which provides that the policy of the Authority on assisting developing countries that suffer serious adverse effects on their export earnings or economies shall be based on several stated principles. Those include that the form of assistance to be provided under article 151, paragraph 10, shall be through an economic assistance fund created from a portion of the funds of the Authority that exceeds those necessary to cover the administrative expenses of the Authority. The amount of the fund is to be determined by the Council, on the basis of a recommendation of the Finance Committee. Only funds from payments received from contractors, including the Enterprise, and voluntary contributions shall be used for that purpose. All related provisions of the Convention are to be interpreted accordingly.

¹⁰ It is suggested in document [ISBA/26/FC/7](#) that the budget of the Authority would need to increase from about \$20 million (2021–2022) to about \$30 million (2029–2030), with approximately \$4.5 million of that increase to be borne by member States.

24. For the present purposes, the Finance Committee noted that a certain proportion of the gross revenue from deep-sea mining would need to be allocated to the economic assistance fund before any further distribution to States parties. The amount needed for the fund will likely vary from year to year, as will the disbursements from the fund, and it is also likely that guidelines will need to be developed in due course to govern the use of such a fund. This matter falls within the mandate of the future Economic Planning Commission.

V. Developing an equitable sharing formula

25. As a general principle, the equitable sharing of resource rents can be based on two possible rationales. The first is simply based on the concept of shared ownership. Alternatively, equitable sharing can reflect an implicit or explicit desire to redistribute income or wealth, for example, from wealthier States to poorer States. In that case, shares should be distributed on the basis of some indicator of a State's priority in the redistribution goal and would, typically, embody some form of progressivity that favours poorer States in the distribution scheme. Progressivity can be defined in various ways. For example, it can mean: (a) that the share of rents received by a low-income State is higher than the share received by a high-income State; or (b) that the total amount received as a percentage of income is higher for low-income States than for high-income States. Both imply a redistribution of income or wealth relative to what would be required by a proportional distribution scheme based solely on ownership rights.

26. Applying that theoretical background to deep-sea mining, it is noted that article 140 of the Convention provides that deep-sea mining must be carried out for the benefit of humankind, irrespective of the geographical location of States, whether coastal or landlocked. This implies an underlying joint ownership rationale for equitable sharing. At the same time, however, article 140 requires the Authority to take into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing status, implying an income redistribution rationale as well.

27. The Finance Committee noted that there is ambiguity in the language of the Convention. For example, "interests and needs" are not defined, and there is no guidance as to how they are to be assessed and measured. The Committee also noted an inconsistency between references to "States" as beneficiaries in article 140 and article 162, paragraph 2 (o) (i), and references to "States parties" in article 82, paragraph 4. While it could be argued that allowing all States, whether party to the Convention or not, to benefit from deep-sea mining would be consistent with the common heritage status of the mineral resources of the Area, the Committee noted that this could also give rise to a "free rider" problem and fail to take into consideration the fact that States parties had supported the Authority for many years through assessed contributions to the budget. It would not be fair or equitable for non-Parties to benefit in the same way.

28. A particular difficulty arises with respect to the need to recognize the interests and needs of peoples who have not attained full independence or other self-governing status. Article 140 contains a specific reference to the Declaration on the Granting of Independence to Colonial Countries and Peoples of 1960,¹¹ but today's political situation is completely different from that when the Convention was adopted, in 1982. Membership of the Authority is confined to States parties to the Convention, and there is no provision for participation by non-independent territories or indigenous peoples

¹¹ General Assembly resolution 1514 (XV).

that could potentially be considered beneficiaries under that provision. One way to understand the provision might be to infer from it some preference within the overall distributional hierarchy for States parties that have relevant non-self-governing territories, or indigenous peoples. Even then, however, it is difficult to see how the Authority could in practice ensure that benefits are directed to the ultimate beneficiaries.

29. Without prejudice to the issues raised in the preceding paragraphs, the Finance Committee decided to continue its work on the basis that States parties were the appropriate beneficiary unit. During its meetings in 2019 and 2020, the Committee developed three alternative formulae for the equitable distribution of a given sum of money among States parties.¹² The formulae, the rationale behind them and the methodology for calculation are fully explained and elaborated in the reports submitted to the Committee in 2019 and 2020.¹³ The basic concept behind each of the formulae is to calculate each country's population as a percentage of the world's total, which would be fully consistent with Aristotle's principle of equity or proportionality and also reflect the common heritage nature of the resource.¹⁴ This distribution would then be adjusted through a social distribution weight in such a way as to redistribute income from higher-income States parties to the developing countries referenced in article 140 of the Convention. A web-based model was also developed to enable the visualization and comparison of the impact of each of the three alternative formulae on any member of the Authority under the different scenarios.

30. Each of the formulae reviewed by the Finance Committee relies on readily accepted and accessible measures of States parties' income and populations as underlying data sources,¹⁵ and the revealed preferences of States parties as measured by the scale of assessments agreed by the United Nations General Assembly as the appropriate metric to determine progressivity. In that regard, progressivity was defined to mean that the share of proceeds received by relatively "lower-income" (as measured against mean per capita income of all States parties) States parties is higher than the share received by relatively "higher-income" States parties. It was noted that the Authority would be able in the future to modify those revealed preferences (represented in the formulae by the parameter η) to any value that meets its notion of equity. Lower values of η would reduce the degree of progressivity, while greater values of η would strengthen it.

31. To test the relative merit of each of the three formulae, the Finance Committee also reviewed an ex post evaluation of equity and impact on global social welfare

¹² These are referred to as: (a) the original formula; (b) the original formula with floor and ceiling rates; and (c) the geometric mean functional form.

¹³ A synthesis of those reports is presented in ISA Technical Study No. 31.

¹⁴ According to Aristotle's principle of equity or proportionality, goods or services of concern should be divided in proportion to each claimant's contribution (or claim) (Aristotle, *The Nicomachean Ethics*). In the case of revenue from deep-sea mining, the good is homogeneous, divisible and measured on a cardinal scale in a common metric (United States dollar), and each individual has an equal claim to share the benefits from deep-sea mining in the Area referred to under article 140 owing to the status of mineral resources as the common heritage of humankind. This equal claim is adjusted for progressivity in response to requirements under the Convention to redistribute income on a more equitable basis, so that the distribution is not an exact or even one. Instead, the distribution is an even one with unequal entitlements, with claimants weighted by social distribution weights.

¹⁵ In the model developed for the Finance Committee, all calculations are based on three-year averages of population and gross national income data, unless otherwise indicated. The data are also available from the World Bank, the United Nations and other sources.

from the share allocated to each State party using established measures of relative inequality and impacts on global social welfare.¹⁶

32. Empirical results showed that allocated shares from the geometric mean functional form had the greatest degree of global social welfare and produced the lowest relative inequality when considering all shares for all States parties.¹⁷ For convenience, the formula is reproduced in annex I. However, the equity of distribution to regional groups depends on the heterogeneity of each region in terms of population share and, to a lesser extent, the magnitude of each State party's social distribution weight, which is a function of per capita income. A statistical (generalized linear model regression) analysis shows that the impact of the share of population on the outcome is several orders of magnitude greater than that of the social distribution weight. This means that a limited number of States parties would enjoy exceptionally large gains in allocated shares regardless of the formula. Paradoxically, by raising the progressivity parameter, the elasticity of the social marginal utility of income lowers rather than raises equity and social welfare in the distribution. Several alternative approaches were considered but had no significant impact on those conclusions.

VI. Seabed sustainability fund

33. Without prejudice to its discussion of a formula for equitable distribution, the Finance Committee also considered whether an alternative or supplemental approach might be the establishment of a global fund that could be used to support global public goods, investment in human and physical capital or deep-sea research and conservation. A suggestion was also made that the fund could also support the establishment of regional marine scientific and technological centres, as provided in articles 276 and 277 of the Convention. More broadly, such a fund could support and enhance knowledge about the deep sea, which is a global public good. Such knowledge includes, for example, scientific knowledge about the marine environment of the Area, capacity-building for the sustainable development of deep seabed mining (such as enlarging the number of nationals with seabed technical competence), and research in and development of new technology that minimizes the environmental impact of deep seabed mining.

34. In terms of the conceptual basis for a global fund, the Finance Committee noted that, as marine scientific knowledge is a global public good, all peoples of the world benefit from the results (the non-excludability property of a public good) and do so without reducing the benefits of others (the non-rivalry property of a public good). The global benefits also satisfy Aristotle's principle of equity or proportionality. The claimants – in this case, the global population – have equal claims under the Convention and equally benefit from the increase in scientific knowledge, capacity-building, and research and development and their contribution to the sustainable development and production of deep seabed minerals enjoyed by said population. Better scientific knowledge about the deep-sea environment contributes to sustainable mining that minimizes the impairment of any ecosystem services that may result from deep seabed mining and that may adversely affect the global population. The “priority principle” can equitably and fairly select projects and allocate royalties to projects and the seabed sustainability fund. Using a given standard, the priority method distributes available units of “goods” to highest-priority claimants (projects, uses,

¹⁶ Those measures included the Gini coefficient, a Lorenz curve, Pen's parade of dwarves and giants, the Atkinson inequality index and generalized entropy measures.

¹⁷ The geometric mean functional form may be applied with or without a floor and ceiling rate. If a floor and ceiling is applied, it would correspond to the floor and ceiling in the current scale of assessments for contributions of members of the Authority (0.01 per cent and 16.31 per cent, respectively). The rates would be adjusted in future in line with the scale of contributions.

impacts). It is applicable in particular when there are indivisible, heterogeneous, multiple claims and simple metrics to measure ordinal differences in entitlements are unavailable. It allocates “goods” impartially and consistently, even though priority criteria may differ greatly from one situation to another.

35. A global fund supporting global public goods and smoothing consumption spending over time (given variations in revenue from varying production volumes and prices) also addresses intergenerational equity by allowing for the distribution of current deep-sea mining revenue (or monetary and non-monetary benefits derived from them) to future generations (whether through payments to States parties or funded projects). The operation of a global fund requires weighting current and future revenue, other social benefits and costs (including ecosystem impacts) arising from mining.¹⁸ Allocating different weights to those factors shifts costs and benefits to different generations, thereby creating inter-temporal trade-offs between current and future generations. Society may choose to weight consumption differently for different generations on the basis of differences in income or wealth. If future generations are likely to be wealthier (owing to technological advances and economic growth), then a progressive approach to intergenerational allocation would assign greater weight to consumption by current generations, because they are less well off than future generations. Alternatively, if future generations are likely to be poorer than current generations, then a progressive approach places more weight on consumption by future generations by, for example, placing greater weight on investment that leads to higher future consumption when evaluating policy options. Societal decisions about how to allocate resources across generations reflect implicit ethical judgments on the weights assigned to different generations. Those weights are provided by the social discount rate. This is the rate at which the weights placed on future costs and benefits decline over time, thereby allowing comparing future events in today’s terms. In a report commissioned by the Authority in the context of the open-ended working group of the Council on financial terms for deep seabed mining, an (inflation-adjusted) discount rate of 3.75 per cent is recommended.¹⁹

36. To investigate the issue further, the Finance Committee commissioned a report on options for a seabed sustainability fund,²⁰ which it considered at its meetings in 2021.

A. Summary of the report on the options for a seabed sustainability fund

37. A qualitative distribution of net financial benefits from deep-sea mining is identified in the report as a credible adjunct or alternative to simple financial distribution

¹⁸ The inherent non-renewability of mineral resources implies that extraction by current generations comes at the expense of extraction by future generations. Thus, future generations can only exercise their ownership rights and associated claim to the benefits from extraction of those resources through provisions made by the current generation to: (a) leave an equitable share of the resource in situ for extraction by future generations; or (b) save and invest some of the royalties from current extraction to provide increased consumption (i.e. increased goods and services) for future generations. The latter would require reducing consumption of royalties earned now to increase savings, investment (including in public goods), economic growth and, hence, future consumption. Once extraction is fully developed, the portion of revenue saved to build up a stock of non-resource assets in the sustainability fund creates a return that can finance global public goods, which invariably include long-term market and non-market benefits for future generations, and sustain the spending annuity after extraction has ended or is declining. This ensures that future generations enjoy some share of the benefits from extraction of the resources and promotes sustainable development.

¹⁹ Mark C. Freeman, Ben Groom and Zachary M. Turk, “A Study to determine the appropriate social discount rate for the International Seabed Authority” (2020).

²⁰ See note 5 above.

and arguably more in line with a precautionary approach. In this way, financial benefits would be used to invest in people and in preserving and developing the Area sustainably, so that it maintains its value for future generations. Evidence from multilateral institutions shows how difficult it is to mobilize financial resources for common purposes, and this deficit also affects the Authority. Better understanding and knowledge of the deep sea and its ecosystems will not only ensure rigorous management of the Area but also provides benefits to all countries (i.e. it is a global public good), since all depend on the ocean for the supply of essential ecosystem services.

38. The proposed objective of the seabed sustainability fund would be to invest in knowledge and competence related to the Area. This includes basic and applied research, capacity-building and the fostering of other public goods related to the seabed. The purposes identified in the draft regulations on exploitation appear to be a good basis for discussion.

39. It is noted in the report that many of the activities described under “scope” should ideally be carried out before deep-sea mining starts. This suggests that consideration may need to be given to “front-loading” the fund by co-financing or borrowing against future revenue. The problem is that it may take some years to build up sufficient revenue to make meaningful investments. Those issues would need to be addressed by whatever governance mechanism is selected for the seabed sustainability fund.

40. Various options may be considered for the governance of the seabed sustainability fund, but four basic components may be identified, namely: (a) a management body; (b) a scientific guidance board; (c) a performance audit mechanism; and (d) an executive office or secretariat. In line with the evolutionary approach identified in the 1994 Agreement, the need to create new institutions could be avoided in the early stages of operation of the fund by using existing institutional mechanisms. Under that scenario, the Finance Committee would act as the management body, the Legal and Technical Commission would provide scientific guidance (possibly with additional external expert input) and the Authority secretariat would act as the secretariat of the fund. Performance audit could be outsourced to existing institutions, such as the Board of Auditors of the United Nations. This approach would also be more cost-effective during the early years of the fund.

41. The seabed sustainability fund could support projects aimed at specific actions identified by members of the Authority, for example, through the strategic plan and high-level action plan of the Authority, as well as any other strategic frameworks endorsed by the Assembly. It could also support projects proposed by members of the Authority and third parties through co-financing.²¹ Those options are not mutually exclusive and could be enriched through further ideas from the scientific guidance body or a demand analysis (like the capacity-building needs analysis carried out by the Authority in 2020). The report identifies inclusivity as an important objective and suggests that consideration may be given to regional offices hosted by regional institutions, with the Authority playing a role as a global coordinator and facilitator of a network.

42. It was noted in the report that no other existing institution was providing the services that could be provided by the seabed sustainability fund. Many institutions with much larger budgets than the Authority exist, but very little funding is allocated to the Area. The Area, and indeed all marine areas beyond national jurisdiction, were identified as “orphan domains” in the report, and for that reason the fund would be a

²¹ It was also suggested in the report that funds could be used to co-finance the Enterprise, for example, through investment or loans to the Enterprise. The Finance Committee did not reach any conclusion regarding that suggestion.

practical option to direct a meaningful financial and intellectual efforts towards the Area. Some useful lessons can be learned from the way in which other funds, organizations and agencies operate, including the importance of a mechanism for performance evaluation, transparency in decision-making, the importance of capacity-building and the use of blended finance involving the private sector.

B. Consideration by the Finance Committee

43. The Finance Committee considered that the seabed sustainability fund and the issues raised in the report merited further detailed consideration, subject to the consideration of the overriding policy issues by the Assembly. In general, the Committee endorsed the application of the evolutionary approach to the governance of the fund, while noting the need to scale up the internal capacity of the Secretariat to manage such a fund. The need to associate the objects and purposes of the fund with the priorities identified in the strategic plan and high-level action plan was noted. Some members emphasized the value of a regional or decentralized approach, making use of existing regional institutions to act as regional centres for the activities of the fund. Some concern was expressed as to whether the fund would fully meet the objective identified in article 140 of giving “particular consideration” to the interests and needs of developing States. It was noted that further consideration would need to be given to that aspect should the proposal be developed further.

VII. Distribution pursuant to article 82, paragraph 4

44. The Finance Committee also considered the application of the principles that were discussed to the equitable distribution of funds received pursuant to article 82, paragraph 4, of the Convention. It was noted that, since 2009, the Authority had convened a seminar and a workshop to explore important legal and technical issues related to article 82 and had also published a survey of key terms used in that article.²²

45. Article 82, paragraph 4, gives the Authority the responsibility for distributing to States parties to the Convention, on the basis of “equitable sharing criteria”, payments and contributions made by coastal States in respect of the exploitation of non-living resources on the continental shelf beyond 200 nautical miles. The Finance Committee noted some significant differences between article 82, paragraph 4, and article 140. First, article 82, paragraph 4, is unambiguous in referring to States parties as the beneficiaries of payments and contributions. Second, the beneficiaries to receive preference under the same article are developing States, but in particular “the least developed and landlocked among them”, whereas article 140 refers to developing States in general. This implies that the remedial rationale of article 82, paragraph 4, is broadly socioeconomic and geographical, hence the highlighting of the needs and interests of landlocked States, which have no entitlement to a continental shelf. Third, in relation to the payments or contributions to be made pursuant to article 82, paragraph 4, the role of the Authority is fundamentally different to that under article 140. In the case of article 82, the function of the Authority is to serve as a conduit for the transmission of payments and in-kind contributions to States parties in accordance with article 82, paragraph 1. The recipients of the payments and contributions are the States parties and the role of the Authority is purely instrumental. This implies that such funds may

²² See International Seabed Authority, *Issues Associated with the Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 4 (2009); *Implementation of Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 12 (2013); and *A Study of Key Terms in Article 82 of the United Nations Convention on the Law of the Sea*, ISA Technical Study No. 15 (2016).

not be used to support the regular budget of the Authority, the economic assistance fund or a sustainability fund. The Finance Committee noted that, as discussed at the workshop on article 82 held in Beijing in 2012, this did not preclude an administrative overhead charge for managing such funds.²³

46. The above notwithstanding, the Finance Committee noted that any of the distribution formulae developed in relation to article 140 could also be applied to distribution under article 82, paragraph 4. If the basic methodology is accepted, the social distribution weights can be easily manipulated to give preference to any group of States. It would simply be necessary to determine which States should receive preferential treatment. Among the members of the Authority, 27 States are least developed countries, including 10 that are landlocked, and 10 States are both developing and landlocked countries. It would be necessary to determine whether those should receive equal preference or whether there is a ranking of preference in the distribution.

VIII. Conclusions and recommendations

47. The following are the main conclusions and recommendations of the Finance Committee:

(a) Revenue from deep-sea mining is likely to build up over time as activities in the Area progress. In the early years of activity, this revenue will be used to meet the administrative expenses (budget) of the Authority until such time as deep-sea mining revenue displaces the assessed contributions of States parties;

(b) Since the budget of the Authority will need to increase before the commencement of commercial production, in order to build the Authority's capacity to manage activities in the Area effectively, consideration should be given to the possibility that, from 2023, necessary increases in the administrative budget beyond zero real growth increases could be treated as advances against future revenue, which would be repaid pro rata and progressively once revenue from deep-sea mining begins to flow;

(c) Article 151, paragraph 10, of the Convention, as read in conjunction with section 7 of the 1994 Agreement, requires a portion of the Authority's funds exceeding those necessary to cover the administrative expenses to be allocated to the economic assistance fund. While the amount of the fund is to be determined by the Council, on the basis of a recommendation of the Finance Committee, the criteria for access to the fund and the amount of compensation to be given fall within the mandate of the future Economic Planning Commission. This issue will need to be addressed before the distribution of remaining funds begins;

(d) As far as the allocation of the remaining funds in excess of the amounts required for the administrative expenses of the Authority and the economic assistance fund are concerned, either the development of equitable sharing criteria or the establishment of a seabed sustainability fund, or a combination of both, can meet the Convention objectives of equity and proportionality. There are questions as to whether the fund can achieve the same level of income redistribution and progressivity as direct distribution to States parties;

(e) Alternative formulae have been developed for equitable sharing and subjected to ex ante and ex post evaluation according to well-established methodologies. Empirical results show that allocated shares from one allocation formula (geometric mean) have the greatest global social welfare and produce the

²³ International Seabed Authority, ISA Technical Study No. 12.

lowest relative inequality compared with others, although the differences are not great. Under any scenario, the impact of population share means that a limited number of States parties will enjoy exceptionally large gains in allocated shares compared with others, regardless of the formula used. On the other hand, the comparatively small dollar amounts available to some States parties (even under a notional distribution of \$500 million) means that the benefits of the common heritage may be dissipated, which is a major drawback to the idea of direct distribution;

(f) For that reason, the seabed sustainability fund may be a viable adjunct or alternative to direct distribution. The proposed objective of the fund would be to invest in knowledge and competence related to the Area while at the same time addressing intergenerational equity and smoothing out flows of benefits in the face of fluctuating revenues. This includes basic and applied research, capacity-building and the fostering of other public goods related to the seabed. The purposes identified in the draft regulations on exploitation appear to be a good basis for discussion. Better understanding and knowledge of the deep sea and its ecosystems will not only ensure rigorous management of the Area but also provides benefits to all countries, since all depend on the ocean for the supply of essential ecosystem services;

(g) If the Council and the Assembly consider that a seabed sustainability fund should be investigated further, the Finance Committee recommends an evolutionary approach to its establishment and functioning, using existing institutional capacity wherever possible, in accordance with the 1994 Agreement;

(h) A possible approach would be to establish both a seabed sustainability fund and a mechanism for the direct distribution of royalties and public goods, such as regional centres. As with the economic assistance fund, the amount of excess funds to be contributed each year to the seabed sustainability fund could be determined by the Council, based on the recommendation of the Finance Committee. The balance of funds would be available for direct distribution. A sufficient fund could thus be built up during the early years of activities in the Area to achieve a balance between the various objectives identified in the present report;

(i) With respect to article 82, paragraph 4, the Finance Committee noted that any of the distribution formulae developed in relation to article 140 could also be applied to distributions under article 82, paragraph 4, subject to reaching agreement on the relative preference to be given to specific categories of States parties. Because payments and contributions in kind made under article 82, paragraph 4, are made through the Authority to States parties, the administration of those payments would need to be kept separate from funds received pursuant to article 140.

IX. Next steps

48. Future action depends to some extent on the decisions to be taken by the Council and the Assembly. A key factor is also the likely pace of development of activities in the Area. On the basis of the analysis in the report of the Secretary-General on the future financing of the Authority (ISBA/26/FC/7), it is not foreseen that revenue from deep-sea mining would be sufficient to displace assessed contributions until after 2030, depending on the date of commercial production. However, in the interim, there is a need for the Authority to build additional capacity to be ready to act as a regulator of deep-sea mining.

49. This implies that consideration of the issues raised in the present report should not be delayed but should be addressed in a logical and sequential manner. Should the date of commercial production be earlier than 2030, the issues would become even more urgent.

Annex I

Geometric mean functional form for the allocation formula

The geometric mean functional form for the allocation formula is written:

$$S_i \frac{\left[\left[\frac{\overline{GNI}}{GNI_i} \right]^{\eta=1} * P_i \right]^{\frac{1}{2}}}{\sum_{i=1}^N \left[\left[\frac{\overline{GNI}}{GNI_i} \right]^{\eta=1} * P_i \right]^{\frac{1}{2}}} = \frac{\left[\left[\frac{\overline{GNI}}{GNI_i} \right]^{\eta=1} \right]^{\frac{1}{2}} * P_i^{\frac{1}{2}}}{\sum_{i=1}^N \left[\frac{\overline{GNI}}{GNI_i} \right]^{\eta=\frac{1}{2}} * P_i^{\frac{1}{2}}}$$

where:

S_i denotes the allocated share of State party i in a time period;

P_i denotes the share of total population of State party i ;

\overline{GNI} denotes the average per capita gross national income of all States parties;

GNI_i denotes the per capita gross national income of State party i ;

N denotes the total number of States parties that receive an allocation ($N = 167$).

The value given to the social distribution weight $\omega_i = \left[\frac{\overline{GNI}}{GNI_i} \right]^{\eta=1}$ is represented by η and therefore the development status of any particular State party is implicitly defined through the calculation of its mean per capita income over that of all States parties and depends on whether that State is above or below the mean (and of course affected by η) through the social distribution.

The table below is extracted from the web-based country comparison model developed by the secretariat and available on the website of the Authority. The model allows to output the results of a notional distribution of any given sum of money according to the various alternative formulae presented in the present report. Outputs include a country's relevant demographics, including the resulting gross national income-based distribution weight, expected distribution shares under three proposed distribution functional forms and three comparison forms, total and per capita payouts for the selected hypothetical total payout, the relevant group's Gini coefficient and Atkinson inequality index under each distributional form, and Lorenz curves under each distributional formula.

All calculations in the web-based model are based on five-year averages of population and gross national income data, unless otherwise indicated. The data are also available from the World Bank, the United Nations and other sources.

The purpose of the table is to show the notional percentage distributions to the five largest and five smallest beneficiaries under the original formula and the geometric mean functional form. It is included here to demonstrate: (a) the relatively greater impact on the distribution of population share when using the original formula; and (b) the impact of a combination of very small populations and relatively high gross national income per capita, in particular on small island developing States.

<i>Country</i>	<i>Percentage of the total population of all States parties</i>	<i>Average gross national income per capita (United States dollars)</i>	<i>Share under geometric mean formula (percentage)</i>	<i>Share under original formula (percentage)</i>
Indicative shares of the five largest beneficiaries				
India	20.51	1 916	7.23	27.72
Democratic Republic of the Congo	1.25	500	3.50	0.10
China	21.23	9 320	3.34	5.90
Somalia	0.22	107	3.19	5.41
Pakistan	3.19	1 535	3.18	5.38
Bangladesh	2.45	1 613	2.72	3.93
Indicative shares of the five smallest beneficiaries				
Tuvalu	< 0.01	5 475	0.0125	< 0.001
Palau	< 0.01	17 418	0.0088	< 0.001
Cook Islands	< 0.01	19 983	0.0085	< 0.001
Nauru	< 0.001	12 026	0.0042	< 0.001
Monaco	< 0.001	180 859	0.0001	< 0.001

Annex II

Suggested guiding questions on the issue of the equitable sharing of financial benefits from activities in the Area for consideration by the Council and the Assembly

1. Do the Council and the Assembly agree on the concept of a seabed sustainability fund as proposed in the present report?
2. If the answer to question 1 is yes:
 - (a) What should the objectives and purposes of such a fund be?
 - (b) Should the seabed sustainability fund be an alternative to direct distribution or could there be a dual approach, whereby the funds to be contributed in any given year to the fund could be determined by the Council, on the basis of the recommendation of the Finance Committee, with the balance of funds available for direct distribution?
 - (c) Do the Council and the Assembly agree with the recommendation for an evolutionary approach to the establishment of a seabed sustainability fund, using existing institutional capacity wherever possible?
3. Do the Council and the Assembly agree, in principle, with the proposition that, from 2023, increases in the administrative budget beyond zero real growth needed to allow the Authority to evolve into an effective regulator of exploitation activities could be treated as advances against future revenue, which would be repaid pro rata and progressively once revenue from deep-sea mining begins to flow? If so, would the Assembly wish the Finance Committee to prepare a more detailed proposal for its consideration?
4. Do the Council and the Assembly agree that the Economic Planning Commission (and, in the interim, the Legal and Technical Commission performing the functions of the Economic Planning Commission) should begin to address the criteria for access to the future economic assistance fund under article 151, paragraph 10?

Annex III

Relevant provisions of the United Nations Convention on the Law of the Sea and of the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 referred to in the present report

A. United Nations Convention on the Law of the Sea

Article 82

Payments and contributions with respect to the exploitation of the continental shelf beyond 200 nautical miles

4. The payments or contributions shall be made through the Authority, which shall distribute them to States parties to this Convention, on the basis of equitable sharing criteria, taking into account the interests and needs of developing States, particularly the least developed and the landlocked among them.

Article 140

Benefit of mankind

1. Activities in the Area shall, as specifically provided for in [part XI], be carried out for the benefit of mankind as a whole, irrespective of the geographical location of States, whether coastal or landlocked, and taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing status recognized by the United Nations in accordance with General Assembly resolution 1514 (XV) and other relevant General Assembly resolutions.

2. The Authority shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism, on a non-discriminatory basis, in accordance with article 160, paragraph 2 (f) (i).

Article 151

Production policies

10. Upon the recommendation of the Council on the basis of advice from the Economic Planning Commission, the Assembly shall establish a system of compensation or take other measures of economic adjustment assistance including cooperation with specialized agencies and other international organizations 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 or in the volume of exports of that mineral, to the extent that such reduction is caused by activities in the Area. The Authority on request shall initiate studies on the problems of those States which are likely to be most seriously affected with a view to minimizing their difficulties and assisting them in their economic adjustment.

Article 160

Powers and functions [of the Assembly]

2.(g) [The powers and functions of the Assembly shall be] to decide 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.

Article 173
Expenses of the Authority

2. The administrative expenses of the Authority shall be a first call upon the funds of the Authority. Except for the assessed contributions referred to in article 171, subparagraph (a), the funds which remain after payment of administrative expenses may, inter alia:

- (a) Be shared in accordance with article 140 and article 160, paragraph 2 (g);
- (b) Be used to provide the Enterprise with funds in accordance with article 170, paragraph 4;
- (c) Be used to compensate developing States in accordance with article 151, paragraph 10, and article 160, paragraph 2 (l).

Article 276
Establishment of regional centres

1. States, in coordination with the competent international organizations, the Authority and national marine scientific and technological research institutions, shall promote the establishment of regional marine scientific and technological research centres, particularly in developing States, in order to stimulate and advance the conduct of marine scientific research by developing States and foster the transfer of marine technology.

2. All States of a region shall cooperate with the regional centres therein to ensure the more effective achievement of their objectives.

Article 277
Functions of regional centres

The functions of such regional centres shall include, inter alia:

- (a) Training and educational programmes at all levels on various aspects of marine scientific and technological research, particularly marine biology, including conservation and management of living resources, oceanography, hydrography, engineering, geological exploration of the seabed, mining and desalination technologies;
- (b) Management studies;
- (c) Study programmes related to the protection and preservation of the marine environment and the prevention, reduction and control of pollution;
- (d) Organization of regional conferences, seminars and symposia;
- (e) Acquisition and processing of marine scientific and technological data and information;
- (f) Prompt dissemination of results of marine scientific and technological research in readily available publications;
- (g) Publicizing national policies with regard to the transfer of marine technology and systematic comparative study of those policies;
- (h) Compilation and systematization of information on the marketing of technology and on contracts and other arrangements concerning patents;
- (i) Technical cooperation with other States of the region.

B. Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, annex

Section 7
Economic assistance

1. The policy of the Authority of assisting developing countries which suffer serious adverse effects on their export earnings or economies resulting from a reduction in the price of an affected mineral or in the volume of exports of that mineral, to the extent that such reduction is caused by activities in the Area, shall be based on the following principles:

(a) The Authority shall establish an economic assistance fund from a portion of the funds of the Authority which exceeds those necessary to cover the administrative expenses of the Authority. The amount set aside for this purpose shall be determined by the Council from time to time, upon the recommendation of the Finance Committee. Only funds from payments received from contractors, including the Enterprise, and voluntary contributions shall be used for the establishment of the economic assistance fund;

(b) Developing land-based producer States whose economies have been determined to be seriously affected by the production of minerals from the deep seabed shall be assisted from the economic assistance fund of the Authority;

(c) The Authority shall provide assistance from the fund to affected developing land-based producer States, where appropriate, in cooperation with existing global or regional development institutions which have the infrastructure and expertise to carry out such assistance programmes;

(d) The extent and period of such assistance shall be determined on a case-by-case basis. In doing so, due consideration shall be given to the nature and magnitude of the problems encountered by affected developing land-based producer States.

2. Article 151, paragraph 10, of the Convention shall be implemented by means of measures of economic assistance referred to in paragraph 1. Article 160, paragraph 2 (l), article 162, paragraph 2 (n), article 164, paragraph 2 (d), article 171, subparagraph (f), and article 173, paragraph 2 (c), of the Convention shall be interpreted accordingly.
