

Defining Strategic Environmental Goals and Objectives for the Management of Deep-sea Mining Operations in the Seabed Beyond National Jurisdiction

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Executive Summary: After the inconclusive second part of the 28th Annual Session of the International Seabed Authority (ISA) in July 2023, there were concerns that the ISA would start accepting exploitation applications for deep-sea mining in the seabed beyond national jurisdiction (the Area) with neither a full regulatory framework in place nor a general policy related to the conservation of our marine environment. Currently, the environmental management of deep-sea mining by the ISA is cursory and lacks strategic aims regarding the preservation of deep-sea ecosystems. This makes the ISA unable to fulfill its environmental stewardship mandate as defined in the United Nations Convention on the Law of the Sea. To overcome this inability, we propose that the ISA defines Strategic Environmental Goals and Objectives by carrying out a Strategic Environmental Assessment of deep-sea mining in the Area, with broader stakeholder engagement and considerations for cumulative and long-term effects. This will allow the ISA to develop the first strategic environmental policy for the Area under its jurisdiction to protect deep-sea ecosystems.

I. Environmental stewardship mandate of the International Seabed Authority

The International Seabed Authority (ISA) is an international organization responsible for managing activities related to mineral resources in the seabed beyond national jurisdictions (the Area). The ISA was created in 1994 by stipulation of the United Nations Convention on the Law of the Sea (UNCLOS) and the Part XI Implementation Agreement and has been in operation since 1996. UNCLOS mandates the ISA to, on behalf of humankind as a whole, administer the mineral resources located in the Area, which are the common heritage of humankind, in whom the rights to such resources are invested (UNCLOS, Art. 140, 157(1)). To enforce its mandate, the ISA may suspend or terminate activities in the Area or impose monetary penalties on contractors (UNCLOS, Annex III, Art. 18(1,2)).

Although the exploitation of mineral resources in the Area may generate economic benefits for humankind, the best available scientific knowledge indicates that mining activities in the Area have direct impacts on deep-sea ecosystems in the forms of species removal, community changes, degradation of habitats and biodiversity loss (Gollner et al. 2017; Jones et al. 2019). Due to the triggering of the “two-year rule”¹ by the Republic of Nauru in 2021 and a contractor’s intention to submit applications of

¹The “two-year rule” is a provision of the Part XI Agreement (Section 1(15) of the Annex) that allows a Member State to request that the ISA Council complete the exploitation regulations within two years. If the Council fails to complete the regulations in this time frame and an application for exploitation is submitted, the Council has to consider and provisionally approve the application.

mining exploitation to the ISA as early as July 2024 (The Metals Company 2023), the ISA urgently needs to adopt strategic goals for the protection of the environment and associated indicators and targets, to prevent deep-sea mining projects from proceeding without clear environmental guidelines. In addition, UNCLOS requires that the marine environment shall be effectively protected from mining activities in the Area (UNCLOS, Art. 145). This adds another layer of urgency to develop a thorough plan to protect the marine environment and deep-sea ecosystems if any mining activities are to be allowed.

After the second part of the 28th Annual Session of the ISA in July 2023, tremendous concerns were raised that the ISA might start accepting applications for deep-sea mining without a full regulatory framework nor a general policy of marine environment protection, after its failure to conclude the Draft Exploitation Regulations within the “two-year rule” deadline. Considering the known impacts, risks, and uncertainties involved in the ISA’s mandate to protect the deep-sea environment, a strategic approach to environmental management is urgently needed (Jaeckel 2020).

II. Status of environmental stewardship under the ISA

To manage seabed minerals-related operations in the Area, the ISA is developing a set of rules, regulations, and procedures collectively known as the Mining Code. As part of the Mining Code, the ISA has developed a regional environmental management policy based on Area-Based Management Tools (Blanchard and Gollner 2022). In particular, Regulations 44 and 44 bis of Part IV of Draft Exploitation Regulations address Regional Environmental Management Plans (REMPs) as providers of region-specific tools to ensure the effective protection of marine environments (Levin, Amon, and Lily 2020; Ginzky, Singh, and Markus 2020; Blanchard et al. 2023). As an example of this regional approach to environmental management, the Clarion-Clipperton Zone (CCZ) REMP in the Northeast Pacific includes areas of particular environmental interest, designed to conserve representative and unique marine habitats, biodiversity and ecosystem structure and function, and facilitate the management of mining activities vis-à-vis the protection of the marine ecosystems in

the CCZ, and which are to be preserved (Christiansen et al. 2022). The CCZ REMP was developed based on the protection and preservation of marine environments and the Precautionary Approach² which requires the ISA to favor caution and act preemptively to protect the environment from harm, even in the presence of uncertainties. This is a direct obligation of international environmental law (De Sadeleer, 2021). However, as of today, the CCZ REMP is the only REMP in effect, and therefore no other part of the Area has environmental goals and objectives that can guide mineral-related activities (Amon et al. 2022; Tunnicliffe et al. 2020).

Overarching goals, objectives, targets, and indicators are still missing from the ISA’s broader environmental policy (including the Mining Code), preventing the ISA from carrying out its mandate to protect the environment (Christiansen, Braeger, and Jaeckel 2022). To fulfill its environmental stewardship mandate, the ISA needs to adopt a comprehensive strategic environmental management approach with strategic environmental objectives at its core, globally applicable to the whole Area (Ginzky, Singh, and Markus 2020; Jaeckel 2020; Tunnicliffe et al. 2020). This strategic approach to environmental management will also allow for the implementation of the Precautionary Approach (Jaeckel 2020; Levin, Amon, and Lily 2020). Following Jaeckel (2020) and Tunnicliffe et al. (2018), we believe that the first step to a strategic approach to environmental management is the definition of Strategic Environmental Goals and Objectives (SEGOs). Defining SEGOs would fill the gap between the granular environmental management (i.e., contractor level) as it is presently embodied in the ISA regulations, and the strategic environmental management (i.e., global level) that the ISA’s environmental stewardship mandate requires (Ginzky, Singh, and Markus 2020; Jaeckel 2020).

Below, we discuss two policy options for introducing SEGOs into the ISA’s regulatory framework.

III. Policy options

SEGOs have been defined in several international fora, in close relation to sustainable development

²The Precautionary Approach states that lack of scientific certainty cannot be used as a reason not to take measures to protect the environment.

(Tunncliffe et al. 2020). SEGOs adopted by the ISA should be long-term and generalizable across geographic space and mineral resource types. As such, we discuss two possible policy options:

i. Policy option 1: Conduct a Strategic Environmental Assessment (SEA) of mining activities globally in the Area.

SEAs are comprehensive systematic processes for evaluating and addressing the environmental consequences of proposed sectoral policies, plans, or programs (Sadler and Verheem 1996). SEAs are well suited to equip the ISA regulatory framework with SEGOs, as they encourage the definition of environmental objectives during sectoral policy-making activities (Wood and Dejeddour 1992), and are well equipped to address cumulative and long-term effects (Craik and Gu 2019).

An SEA for the Area has broad stakeholder engagement, including Member States, Observer States, public and private contractors, and Observers such as scientists, NGOs, and indigenous peoples. In other words, it gives a space for vulnerable and minority communities to input their voices. It also incorporates voices from the science community in the early stage of the decision-making process. An SEA also provides a framework to define SEGOs linked to targets measurable by performance indicators, from considering ecosystem pressures and sensitivities to considering existing activities and cumulative effects on a long-term basis, as suggested by Tunncliffe et al. (2020). SEGOs would be linked with regional and project-level assessments via REMPs and project-level assessment requirements (i.e., the Environmental Impact Statement) respectively, thereby closing the gap between the strategic and the granular environmental management approaches. Possible difficulties to implement this option is the incapability of the deep-sea mining authority, ISA, in terms of:

- Lacking the environmental expertise and workload capacity to undertake SEAs.
- Lacking a complete stakeholder engagement mechanism, including a response strategy to stakeholder input.

ii. Policy option 2: Adopt the Good Environmental Status Descriptors of the EU Marine Strategy Framework Directive (MSFD)

The MSFD is a framework designed to assess the Good Environmental Status (GES) of European Waters, i. e., the environmental status of marine waters where these are clean, healthy, and productive and the use of the marine environment is at a level that is sustainable³. The GES is assessed by the qualitative Good Environmental Status Descriptors. Orejas et al. (2020) concluded that the MSFD framework could be transferred to the Area. The advantage of this policy option is that it would be faster to implement than option 1, as some of the MSFD Good Environmental Status Descriptors would be adopted to the Area becoming SEGOs, thereby reducing the time needed to define SEGOs compared to policy Option 1. Limitations of this option are:

- In terms of scope, MSFD is not customized to deep-sea environments because the framework was developed for European Waters, of which deep-sea environments are only a small portion. Furthermore, deep-sea mining occurs globally in the Area with a wide variation of deep-sea environments, of which the deep-sea environments in European Waters are only a subset of them. It is questionable whether the MSFD could be extended to deep-sea environments beyond the European Waters.
- In terms of applicability, within MSFD, only three of the eleven GES Descriptors are directly applicable to deep-sea mining. The rest of them are not applicable at all. This very limited amount of applicable GES Descriptors could leave important gaps in the strategic environmental management policy of the ISA.
- There will be a lack of stakeholder engagement to consider diverse voices, as the absence of a scoping phase in this option does not require such deep stakeholder involvement as Option 1 does.

³As defined by European Commission Decision 2017/848 and Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (Text with EEA relevance), 2008. , OJ L.

IV. Consequences of inaction

In the absence of SEGOs, which are set by the regulator (in this case, the ISA) and are later translated to project-specific goals and objectives, contractors would possess excessive discretion in the preparation and implementation of their respective Environmental Management Plans and in the definition of environmental goals and objectives at the project level (Singh 2021; Jaeckel 2020). Under such circumstances, the ISA would not be able to conduct a proper and thorough evaluation of environmental plans, rendering assessment procedures a mere formality and leaving itself without tools to manage the environmental impacts of seabed mining above project-level (Jaeckel 2020). This risk is exacerbated by the failure of the ISA to finish the Draft Exploitation Regulations before the end of the “two-year rule” deadline (i.e., July 2023) and the lack of a strategic environmental policy, which raises concerns about unregulated deep-sea mining and resulting species removal, community changes, degradation of habitats and biodiversity loss.

V. Policy recommendation

To fulfill its mandate to manage the environmental impacts of deep-sea mining, the ISA needs to define SEGOs, their targets, and associated indicators. To achieve this, we recommend policy option 1, where the ISA conducts an SEA of the Area. Although option 2 could be easier and faster to implement, the advantage of option 1, with respect to option 2, is that it provides a clear framework for the definition of specific SEGOs for the environmental management of activities in the Area and, indeed, of a strategic environmental policy, involving diverse stakeholders and specifically state-of-art science in deep-sea mining and protection from the beginning. Moreover, the complementary legal regimes of the Area and of the High Seas recognize the importance of protecting and conserving marine ecosystems. The SEA would align the SEGOs defined by the ISA to the overarching environmental goals and objectives of the Biodiversity Beyond National Jurisdiction instrument (Christiansen et al. 2022). This would allow for a coherent environmental impact assessment framework in the Area Beyond National

Jurisdiction which comprises the Area and the High Seas (Mendenhall et al. 2023).

At the project level, SEGOs would be translated into specific goals and targets and incorporated into the Mining Code, ensuring that mining activities consider effective protection of the deep-sea environment and that mitigation measures are in effect.

The policy recommendation envisions the ISA to conduct an SEA of the Area. This would begin with the definition of the mineral-related activities and the possible effects on the environment, looking for the involvement of stakeholders in defining the scope and objectives of the SEA, as well as the state of the environment in the Area. Then, the ISA would proceed to assess the significant environmental effects that are likely to result from the mineral-related activities in the Area and publish a Strategic Environmental Report based on that assessment, containing the SEGOs identified during the assessment. This policy recommendation could be made feasible by following the plan proposed by Amon et al. (2018) for the closing of the knowledge gaps in deep-sea environments, who also suggested the pooling of resources from stakeholders to fund the effort. The projected timeframe for the collection of sufficient environmental baseline data, which would arguably be the most time-consuming phase of the SEA, would be five to seven years. Considering all phases of the SEA, a reasonable timeframe would be 10 years, given the lack of environmental baseline data and the size and diversity of deep-sea ecosystems in the Area. We stress, however, that the timeframe for the definition of SEGOs, in the initial phase of the SEA, would be one to two years.

Our policy recommendation provides the framework for the ISA to develop a strategic policy for the conservation of the deep-sea ecosystems in the Area, based on sufficient scientific knowledge and in congruence with its complementary instrument for the High Seas, enabling the ISA to fulfill its environmental stewardship mandate.

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