



**THE INTERNATIONAL
SEABED AUTHORITY
AND
PRINCIPLES OF
INTERNATIONAL
ENVIRONMENTAL
LAW**

**CRITIQUE AND
RECOMMENDATIONS**

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The International Seabed Authority and Principles of International Environmental Law Critique and Recommendations

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Executive summary

The International Seabed Authority (ISA) faces the challenge to manage the proposed extraction of minerals from the deep seabed - the Earth's largest and least-understood habitat – and at the same time to protect the marine environment from any impacts, should a decision be made for this new extractive industry to go ahead.

However, concerns are being raised about whether the ISA is fit for purpose to carry out this dual responsibility, in particular in the face of growing pressures on the world's ocean as well as in the context of the United Nations 2030 Agenda for Sustainable Development.

The ISA is also empowered to support growth in the market for the metals¹ under its competency, and to create a mining limb that will enable the ISA itself to participate directly in the extraction, transportation, processing and marketing of the minerals². Permitting mining would generate revenue that could fund the administrative costs of the ISA, and give it a *raison d'être*. As a result, the ISA faces in-built conflicts of interest, which will need careful management and accountable governance structures to avoid procedural impropriety, opacity, bias, corporate capture – and consequently, poor outcomes for humankind³. This set up of the ISA thus poses additional risk to the achievement of sustainable development and reducing the stressors on our ocean.

The ISA is not and must not be operating in a vacuum. Principles of environmental law have evolved since the ISA's inception, and these directly address potential pitfalls of natural resource governance. These principles include: sustainable development; 'do no environmental harm'; the precautionary principle, and public participation.

As the custodian of the world's largest environment, representing the largest possible constituency (all of humankind, now and in the future), the ISA should embrace a modern interpretation of the United Nations Convention of the Law of the Sea (UNCLOS) in keeping with the highest standards of environmental justice and democracy.

The report puts forward a set of practical recommendations that the ISA needs to implement to achieve these standards. These are set out in **bold and dark orange**, for ease of reference.

Introduction

The International Seabed Authority (ISA) faces the challenge to manage the proposed extraction of minerals from the deep seabed - the Earth's largest and least-understood habitat, while at the same time also being in charge protecting the marine deep sea environment. The minerals located in international waters are designated the 'common heritage of [hu]mankind' by the treaty that governs them (the UN Convention on the Law of the Sea or 'UNCLOS'), and the ISA is required to act on behalf of humankind as a whole.

Several tenets of international environmental law have evolved since the 1960s-1990s negotiations of UNCLOS and the conception of the ISA, which are applicable to natural resource governance. These include:

- sustainable development
- 'do no environmental harm'
- the precautionary principle, and
- public participation

This paper explains these four principles, and examines the application of them at the ISA. The analysis focuses on two levels. Firstly, to what extent these principles are supported (or hindered) by UNCLOS, as the ISA's governing instrument. Secondly, the paper examines what the ISA is doing, or could do better, to implement these principles in practice.

Sustainable development

a. What is it, and why is it important?

Sustainable development is "*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"⁴ An international sustainable development agenda and a set of corresponding sustainable development goals (SDGs) were agreed by all United Nations member States in 2015. These include a goal dedicated to the conservation and sustainable use of the oceans and marine resources (SDG 14), and other goals relevant to seabed mining. The SDGs recognise the link between environmental degradation and human vulnerability and poverty. Sustainable development principles are founded on the basic truth that, without a healthy environment and continued access to natural resources, humans cannot survive.

Sustainable development as a principle is therefore closely related to the doctrine of intergenerational equity, "*an important and rapidly developing principle of contemporary environmental law*"⁵ and "*a universal value shared amongst humanity*"⁶ included in 44 international legally binding instruments and over 60 national constitutions,⁷ which obliges the present generation to protect and conserve cultural and natural resources for future generations.⁸

Sustainable development and intergenerational equity require the global population to operate within planetary boundaries. This requires sustainable consumption and production patterns (as identified by SDG 12). Thus, the development of non-renewable resources must be based not only on regulating how extraction takes place (for example through labour and environmental standards) but also in determining whether extraction should occur at all and if so, at what rate.⁹ UNEP's International Resource Panel in 2019 proposed ambitious efficiency, consumption, and production policies to reduce the

extraction of metals by almost 50% by 2060, compared to a business-as-usual scenario.¹⁰

Sustainable development also requires urgent global action to combat climate change and its impacts (SDG 13), including via greenhouse gas emission reduction measures agreed by State Parties under the United Nations Framework Convention on Climate Change (UNFCCC).

b. Does UNCLOS hinder or support implementation of the principle of ‘sustainable development’ at the ISA?

Although provisions in UNCLOS identify the importance of protecting the environment, wider issues related to sustainability do not explicitly feature, while economic motivations feature prominently. Considerations about planetary boundaries, and the finite limits that exist for non-renewable mineral resources, as well as climate change, are absent. UNCLOS Part XI, pertaining to the seabed minerals found in areas beyond national jurisdiction, is a sector-specific framework, so it does not address questions of sustainability of consumption, nor does it promote consideration of whether alternative options can be found.

The provisions of UNCLOS that establish the ISA tend to focus specifically on its management of mineral exploration and extraction.¹¹ The weight the Convention places on this singular purpose is considerable, and reflects a historic view which appears to have over-played resource potential and under-considered management of impacts on the biodiversity and ecosystem services of the deep-sea.¹² Even so, in the policies aimed at resource development (i.e. mining), UNCLOS does import some ideas about sustainable levels of exploitation, by requiring a focus on ‘*orderly, safe and rational management of the resources [...] in accordance with sound principles of conservation, the avoidance of unnecessary waste*’.¹³

A doctrine that appears to have gained some popularity at the ISA in recent times, is that the ISA’s mandate is to require or maximise seabed mining, even outside of sustainability considerations. The ISA’s Secretary General has made speeches and published articles seeming to support this view, e.g. ‘*It is useless and counterproductive to argue that an a priori condition for deep-sea mining is an existential debate about whether it should be permitted to go ahead or not. The international community passed that point already many years ago.*’¹⁴

But this simplistic interpretation of UNCLOS may risk both mischaracterising the signatory States’ intentions, and failing to allow for an appropriately evolutive treatment of the treaty text over time. There are certainly other perspectives. UNCLOS Part XI’s declaration of the minerals found in areas beyond national jurisdiction as ‘*the common heritage of [hu]mankind*’, incorporates ideas of intra- and intergenerational justice, inclusivity, solidarity, and ecological integrity¹⁵ wholly in line with modern sustainable development norms. Further it imposes a raft of duties on its member States, including prerequisite conditions upon future development of resources. These duties include the:

- effective protection of the marine environment¹⁶
- overall development of all countries, especially developing States¹⁷
- development of the [minerals] for the benefit of [hu]mankind as a whole¹⁸, and
- equitable sharing of financial and other economic benefits derived from activities in the Area¹⁹

This is important, as those parameters can be seen as legal curbs upon the notion that the ISA must push to see mining proceed. They reflect an overall requirement to set a decision-making context which does consider bigger-picture equity and other sustainable development paradigms.

c. What implementation efforts have there been at the ISA?

The ISA adopted a regional environmental management plan (REMP) in 2011 for one area of seafloor in its competency. This REMP identified the duty to conserve and sustainably use marine biodiversity²⁰ as a guiding principle.²¹

The ISA's recently-adopted Strategic Plan 2019-2023 identifies the mission of the organization as including "*the effective protection of the marine environment in accordance with sound principles of conservation and contributing to agreed international objectives and principles, including the Sustainable Development Goals.*"²² However, the Strategic Plan can be seen to reflect a pro-mining bias, by framing the need for environmental protection as a means towards "advancing deep seabed mining"²³ and referencing the SDGs in terms of environmental protection, rather than its role in influencing wider consumption and production patterns. In addressing relevant SDGs, the Strategic Plan focuses on Goal 14, and only briefly notes that SDG 12 on sustainable production and consumption is relevant (and then, only to the extent that impacts from mining should be reduced). Climate change action is not addressed in the Strategic Plan. Calls were made by ISA observer organisations to include a process in the Strategic Plan for investigating the fundamental assumption that deep seabed mining is necessary (e.g. for the transition to a renewable energy economy). But these went unanswered,²⁴ despite the argument that this should be an essential determination in order for the ISA to discharge its duty to act on behalf of, and for the benefit of, [hu]mankind as a whole.

The ISA Secretariat has engaged with the 2030 Agenda for Sustainable Development via seven 'voluntary commitments' aimed at SDG 14, expressed at the 2017 UN Ocean Conference. These cover environmental aspects (research capacities to enhance understanding about the deep sea), or economic aspects (building developing country capacity to engage in deep-sea mining). The third 'social' pillar of sustainability is not expressly addressed, save for the aim to 'enhance the role of women' in marine scientific research²⁵.

The ISA is currently engaged in negotiation of new Exploitation Regulations: international rules that will allow and govern deep-seabed mining for the first time. It is notable that the Regulations do not reference sustainability objectives expressly, save for asking individual mining applicants to list relevant SDGs in their environmental impact statement. The current draft Regulations²⁶ contain a 'fundamental policies and principles' section, which sets a framework in which ISA decisions about future mining projects should be made. This list includes environmental policy points, but other sustainable development aspects, including considerations of planetary boundaries, climate change, inter-generational equity, social and cultural factors, and sustainable consumption, are notably absent. Nor do the draft Regulations impose any restrictions on greenhouse gas emissions from seabed mining operations. Other recommendations for incorporating climate change considerations at the ISA also remain unaddressed.²⁷

In general, the sector-specific focus and current presumption in favour of mining, have led to concerns that the ISA may exacerbate global inequalities, divest attention away from responsible consumption and recycling policies, and contribute to environmental

degradation, in a way entirely contrary to the 2030 Agenda for Sustainable Development²⁸.

d. Recommendations for further implementation

The ISA is an intergovernmental body run by and serving its member States. Every one of those same member States has agreed to work towards achieving the SDGs. UNCLOS does not preclude better incorporation of sustainable development principles at the ISA. Yet it appears from the analysis above that there is a distinct disconnect between the SDG agenda and current ISA proceedings. It has also been observed that the ISA's specific mandate to manage the common heritage of humankind in the best interests of all of humankind is, in current implementation, *'only a shadow of what was once intended'* when UNCLOS was formulated.²⁹

The ISA's focus to date has been to take steps designed to minimise or mitigate impacts of future mining. An alternative and preferred paradigm would be to manage the deep seabed within a broader context of sustainable development.³⁰ For example, in discharging its legal duty to make rules to protect the environment from the harmful effects of mining activities,³¹ the ISA should recognise the context of the 21st century's sustainable development agenda, and should include a determination as to whether seabed mining should be conducted at all. The ISA's mandated accountability to take decisions in the best interests of all of [hu]mankind should be interpreted expansively and brought to the fore in all ISA procedures.

It is therefore recommended that the ISA, through resolution of its governing body, the Assembly, and through identifying working groups of named 'sustainable development' and 'climate' champions within its key organs:

- 1. Implements a work stream to mainstream the SDGs fully across the ISA work.**
- 2. Adopts a sustainable development policy.**
- 3. Better incorporates sustainable development principles in future iterations of key ISA instruments (including the ISA's Strategic Plan, the Exploitation Regulations, and environmental management plans).**
- 4. Produces analyses around the nexus between climate change and deep-sea environments that may be affected by climate change, undertakes climate modelling for relevant regions, and incorporates climate projections, mitigation and adaptation measures into ISA management tools and regulatory instruments.**
- 5. Makes concerted effort to examine social and cultural implications of mining the international seabed, including consideration of the role seabed mining (or not mining) could play in relation to delivering sustainable livelihoods, ecological integrity, and social equity.³²**
- 6. Moves away from a culture of prioritising maximum new metal extraction, and instead incorporates in its governance the principle that sustainable production requires consideration of the rate of depletion, and the availability of substitutes, recycling, efficiency, and other linked issues and policies.**

7. **Agrees via a process of inclusive global consultation, how it might obtain maximum benefit from seabed mining for the world's poorest and most vulnerable communities, and arrange for the equitable sharing of financial and other economic benefits derived from mining activities should they be permitted to occur, taking intergenerational equity and the needs of developing countries into account.**

Do no environmental harm

a. What is it, and why is it important?

The 'no-harm rule' (sometimes termed as 'principle of prevention') is a duty imposed upon States to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction³³. The required protection of any ecosystem, habitat and population of species principle was included in the Stockholm Declaration in 1972³⁴ and has been reiterated in various subsequent instruments, for example in 1992: the Rio Declaration (Principle 2), the Convention on Biological Diversity (Article 3), and the UNFCCC (recital 8 of its preamble).³⁵ It appears now to be recognised as widely applicable and customary international law.³⁶

The 'no-harm' principle requires States to implement measures to prevent or otherwise minimise risks of environmental harm. In relation to natural resources, such measures may commonly include use of environmental impact assessment, environmental monitoring and management programmes, mitigation strategies, and protected areas.

Such measures arise in multilateral fora. The Convention on Biological Diversity requires States to protect ecosystems, habitats and species populations, including by "*establish[ing] a system of protected areas or areas where special measures need to be taken to conserve biological diversity.*"³⁷ To this end, States have identified Ecologically or Biologically Significant Marine Areas (EBSAs) based on scientific criteria.³⁸ These areas may require enhanced conservation and management measures, including designation as marine protected areas. States have also recognised environmental and cultural value of marine areas through other international treaties and designations.³⁹ Various UN General Assembly resolutions commit to the protection of Vulnerable Marine Ecosystems, which include species, communities, or habitats that may be vulnerable to impacts from fishing activities, and which also overlap with seabed features associated with mineral deposits.⁴⁰ SDG Target 14.2 aims to avoid significant adverse impacts on, strengthen the resilience of, and restore marine ecosystems. The International Finance Corporation⁴¹ as well as individual corporations, especially those in the mining sector, have increasingly committed to causing "no net loss" of biodiversity.⁴²

The environmental 'no harm' principle is of paramount relevance to deep seabed mining. Although research into deep-sea environments has been very limited to date, we do know that all variations of this emerging industry would cause some degree of environmental harm: by damaging seabed life and habitat, generating plumes of sediment (by seafloor disturbance, and by dumping of waste-water and sediment from the mining vessel) potentially travelling through both the benthic zone and midwater column, and creating noise and light disturbance over large areas of the ocean.⁴³ The scientific community has cautioned that "*The inevitably destructive nature of the activity, [means] the avoidance of significant biodiversity losses is unlikely.*"⁴⁴ The mining of seafloor massive sulphides,

for example, will result in “*reducing diversity at all levels: genetic, species, functional, and habitat and causing serious harm.*”⁴⁵ Extinctions of rare species are possible.⁴⁶ Damage from a single mine “*may persist for decades to centuries, causing harmful effects and a significant adverse impact;*”⁴⁷ and effects are likely to persist for thousands of years.⁴⁸ or indeed never recover back to the former ecosystem state.⁴⁹

Concerns have been expressed that deep seabed mining may have implications for other ecosystem services, including carbon sequestration.⁵⁰ The harm caused by deep seabed mining also sits within a context of the multiple other threats to the deep-sea environment, such as a reduced food supply caused by climate change.⁵¹ Technology to minimize environmental damage, such as equipment to reduce the dispersion of sediment plumes and vehicles designed to limit damage to the seabed, is limited and largely untested.⁵² Given the lack of biological information, identifying appropriate offsets is not possible.⁵³

b. Does UNCLOS hinder or support the implementation of the principle of ‘do no environmental harm’ at the ISA?

There is strong support for the ‘do no harm’ environmental law principle within UNCLOS.

UNCLOS States must protect and preserve the marine environment.⁵⁴ UNCLOS requires that international rules, regulations and procedures be established to prevent, reduce and control pollution of the marine environment from seabed mineral activities conducted beyond national jurisdiction,⁵⁵ and that States individually or jointly take relevant measures to achieve that aim⁵⁶. If the ISA finds that mining activities pose risks of serious harm, it has the authority to prevent those activities.⁵⁷ While UNCLOS is less explicit in relation to biodiversity protection, there are specific protections required for the fauna of the marine environment⁵⁸ and States must implement measures to protect “*rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life*”.⁵⁹ The ISA must also adopt measures to prevent “*interference with the ecological balance of the marine environment.*”⁶⁰

Indeed, it could be argued that UNCLOS sets rather an impossible bar for the ISA in trying to establish mining projects (inherently destructive to animals living on and around the minerals), while also being tasked to ensure “*the prevention of damage to the flora and fauna of the marine environment*”⁶¹ (NB ‘prevention’, not minimisation). This text may reflect a historical lack of understanding of the biodiversity and ecosystems that we now know to exist in the deep sea, and an erroneous presumption from the Convention drafters that mining could occur without causing environmental harm, due to the lifelessness of deep-sea zones. But the legal duty is set nonetheless: the ISA must prevent damage to marine life.

c. What implementation efforts have there been at the ISA?

As noted above, the ISA faces a very significant challenge in implementing its duty of effective protection of the marine environment and “*prevention of damage to the flora and fauna of the marine environment*”, if it wishes to grant mining contracts in the future. Much of the ISA’s current work plan is focused on the development of environmental management rules and procedures.

The ISA’s current Strategic Plan recognizes the need to develop a regulatory framework, environmental monitoring programmes, and regional assessments and environmental management plans⁶². Draft Exploitation Regulations, which will set environmental management rules, have been under negotiation and consultation since 2014; and a series

of environmental standards are due to be prepared in 2020 by the ISA's advisory body (the Legal and Technical Commission, or 'LTC').

One regional environmental management plan is in place, which has identified certain 'Areas of Particular Environmental Interest' (APEIs) earmarked for some degree of protective status.⁶³ Another four regions are under consideration for a similar regional environmental management plan,⁶⁴ though there may be challenges in conducting the necessary regional assessments upon which to frame the plans, due to scarcity of data.

One potential hindrance to the application of the no-harm principle is that the ISA has already approved some thirty exploration contracts across various ocean regions. This means 1.4 million km² of the seafloor has been parcelled out to prospective miners, prior to the above-listed environmentally protective measures being established. These existing contracts are governed by Exploration Regulations, which contain extremely limited detail on matters of environmental management. The lack of an effectively functioning environmental impact assessment ('EIA') regime at the ISA currently has been highlighted as a particular concern.⁶⁵ The APEIs that have been set under the one existing environmental management plan, were placed only around the edges of exploration areas that had already been awarded to contractors as possible future mining sites, departing somewhat from the locations that were advised by scientific experts.⁶⁶ This has raised questions about representativity and networking, which are important criteria for MPAs to be effective as population reserves or refugia, and to maintain connectivity.⁶⁷

Exploration contracts have also recently been granted within EBSAs and other areas identified as requiring protective measures (e.g. the globally unique Lost City hydrothermal vent field), apparently without the ISA advisory body (LTC) or decision-making organ (Council) even being aware of their status.⁶⁸ Surprisingly, the Secretary-General of the ISA responded to criticism of this particular oversight, by stating that '*the fact that it has been recognized as an Ecologically and Biologically Significant Area (EBSA) under the Convention on Biological Diversity (CBD) has no relevance.*'⁶⁹

These types of mis-steps do not suggest a regime that is currently achieving the highest standards of environmental management, in line with the no-harm principle. Moreover, as a Convention-mandated review noted, the ISA also lacks institutional infrastructure necessary to ensure environmental compliance, as it is unable to monitor, investigate, or enforce environmental standards.⁷⁰

d. Recommendations for further implementation

The ISA has a clear legal mandate to protect the marine environment from harm. This makes the ISA the world's largest environmental protection agency, and the no-harm principle should be an institutional motto. There has been recognition in recent times of the need to bolster the ISA's rules and institutional capacity for environmental management, which is positive and should be built upon.

Although 'serious harm' is established by UNCLOS as a prohibited degree of impact from seabed mining, this should not lead to a presumption that the ISA will allow mining activity to go forward, unless or until sufficient information exists to prove that serious harm will occur. 'Serious harm' is the most extreme result that should never be reached. It should not be the threshold used by the ISA for permitting or other decisions. The correct legal test must be about ensuring effective protection of the marine environment.

Specific recommendations for the ISA to implement the no-harm rule include:

- 1. Move away from an organisational focus on preventing ‘serious harm’ to the marine environment, in favour of the objective to prevent or minimise to the greatest extent possible any harm. A hierarchy of thresholds should be established, which trigger ISA regulatory action long before ‘serious harm’ is reached.**
- 2. Continue to prioritise the development, via consultative and inclusive processes, of regional environmental assessments and management plans for all regions under the ISA’s jurisdiction in which there is exploration interest.**
- 3. Identify in all ocean regions additional APEIs and other marine protected areas via objective scientific criteria, and give these sites robust legal protection.**
- 4. Incorporate existing protective designations or classifications of marine areas characterized by special value for marine ecosystems and biodiversity, such as EBSAs and VMEs, into ISA decision-making.**
- 5. Continue to develop the environmental management rules under the framework for exploitation regulations. This should, if deep sea mining is agreed to go ahead, reserve powers for the ISA to reject or suspend mining contracts where environmental standards are not met, and to limit the number of contracts granted, so as to manage cumulative harm to the environment. Modelling of possible transboundary harm, and consultation with adjacent coastal states, potentially affected communities, and other sea users should be prioritised.**
- 6. Develop a road-map and source funding to build institutional expertise, evidence-base, systems, and capacity to manage environmental monitoring and compliance functions.**
- 7. Recruit more environmental specialists into ISA advisory bodies, and/or otherwise improve the ISA’s recourse to objective environmental science expertise.**

The precautionary principle

a. What is it, and why is it important?

The precautionary principle, as presented in the Rio Declaration, is that “*Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*”⁷¹ This duty exists “*irrespective of the absence of scientific certainty as to the existence or extent of such risk.*”⁷² The concept was neatly explained in the UN Fish Stocks Agreement thus: “*States shall be more cautious when information is uncertain, unreliable or inadequate.*”⁷³ The precautionary principle is an emerging principle of customary international law, recognised as applicable to deep seabed mining.⁷⁴

“The number of species of flora and fauna, the enormous diversity of genes in these species and the different ecosystems in the ocean are all part of a biologically diverse realm of which we have very little data.”

Website of the International Seabed Authority

The precautionary principle is triggered when, for a given action, there is a) potential for harm and/or b) uncertainty about causality and magnitude of impacts.⁷⁵

In the context of deep seabed mining, the precautionary principle is important given the inevitably destructive nature of mining activities, combined with severe knowledge gaps about the deep sea, including: ecosystems that will be impacted, the nature of those impacts, and the effectiveness of potential mitigation measures. Specifically, the ISA lacks scientific information about deep-sea ecosystem structure and function, including species’ identities, abundance, distributional range, lifecycles and population connectivity; genetic, species, community and habitat diversity; the food web; and physiological and ecosystem tolerances and resilience.⁷⁶ Without such baseline information, it is not possible to accurately assess the extent of potential harm, to determine what degree of harm is considered by humankind to be acceptable, or to design science-based mitigation measures.⁷⁷

b. Does UNCLOS hinder or support the implementation of the principle of ‘the precautionary approach’ at the ISA?

The precautionary approach crystallised in international law somewhat *after* UNCLOS was negotiated and does not explicitly feature in UNCLOS; commentators have however noted that it may be deemed implicit. Precautionary features of UNCLOS include: the preventative environmental protection requirements, obligations for scientific research and EIAs, and powers to declare areas protected from seabed mining.⁷⁸

In Regulations made pursuant to UNCLOS, the ISA has adopted the precautionary approach as a binding requirement placed upon the ISA, sponsoring States, and ISA contractors.⁷⁹ The UN General Assembly has also called upon the ISA to apply precaution.⁸⁰

The procedures for decision-making on proposed mining contracts are however one area in which UNCLOS (and its 1994 Implementing Agreement) appears to operate contrary to a precautionary approach – as decisions to approve mining contracts are substantially easier to pass than decisions to disapprove those plans (see figure 1, below). This has led to a perception of pro-mining bias at the ISA.⁸¹ Indeed, the LTC currently has a 100% contract recommendation record, from its thirty applications for exploration.

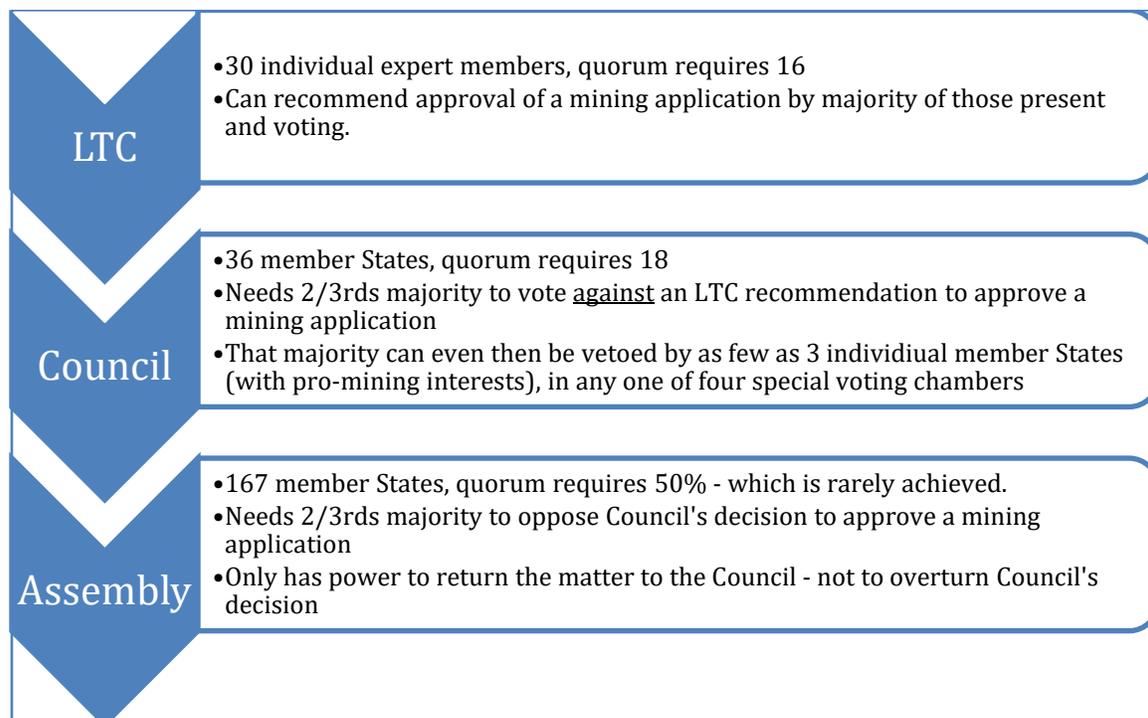


Figure 1: Voting Procedure for an Application for Mining at the ISA

(Source: 1994 *Relating to the Implementation of Part XI of the Convention Section 3 Paragraphs 3, 5, 11(A), 13, 15(A) and (B)*; *Assembly Rules of Procedure, Rule 45*; *LTC Rules of Procedure Rules 28, 44 and 45.*)

c. What implementation efforts have there been at the ISA?

As mentioned above, the ISA has expressly adopted and bound itself to apply the precautionary approach in its regulatory instruments.⁸² The ISA also acknowledges in its Strategic Plan the challenges of rule-making in “*circumstances of considerable scientific, technical and commercial uncertainty.*”⁸³

But while the precautionary principle is much touted in name at the ISA, it is less clear how it is being operationalised. It has been noted that “*implementing precaution involves three dimensions: the adoption of protective measures that are effective and proportionate to meeting a desired outcome; a procedural framework that provides for risk assessment and risk management; and institutional structures to facilitate the above.*”⁸⁴ Yet shortcomings can be seen in all three dimensions at the ISA. For example, existing ISA procedures are not conservation-focused,⁸⁵ and the ISA appears to lack risk-based management approaches or a methodology for dealing with (or reducing) the current high level of scientific uncertainty.⁸⁶ The current EIA procedure is a rubber-stamp rather than a protective measure⁸⁷ and ISA technical bodies have very limited environmental expertise or management powers.⁸⁸

d. Recommendations for further implementation

The ISA should develop a strategy for implementation of the precautionary principle. This may help the ISA move beyond lip service, and towards mainstreaming precaution as an

underpinning approach to all ISA actions. It would also assist stakeholders understand how precaution is being applied in practice.

Examples of actions the ISA should prioritise, include:

- 1. Agree conservation objectives, and make all ISA rules and decisions subject to those objectives.**
- 2. Prioritise the need to gather sufficient information to make informed decisions.**
- 3. Publish a research plan showing what the data gaps are, how they will be filled, with responsibilities allocated to specific actors, and a timeline. Carry out or incentivise others to conduct scientific research designed to fill identified gaps in knowledge.**
- 4. Set conservative performance standards and environmental thresholds. Employ adaptive management techniques in order to review and amend these over time.**
- 5. Predicate the ISA’s decision-making regime on a presumption of no mining, unless and until appropriate levels of environmental impact can be predicted and managed on the basis of sound evidence. Recognise ‘not proceeding with mining’ as a legitimate alternative to granting rights to mining on current limited knowledge.**
- 6. Share, and analyse for regulatory purposes, all data received from contractors.**
- 7. Build the ISA’s environmental science and regulatory capacity and resources.**
- 8. Stop awarding new exploration contracts, and award no exploitation contracts, unless and until the above steps have been satisfactorily completed.**

Public participation

a. What is it, and why is it important?

The right to information,⁸⁹ participation,⁹⁰ and remedy⁹¹ are internationally protected human rights. These rights are also enshrined in multilateral agreements⁹² and declarations⁹³ addressing environmental decision-making in particular. SDG 16, in relation to justice and strong institutions, includes targets to “ensure public access to information” and to “develop effective, accountable and transparent institutions” and “ensure responsive, inclusive, participatory and representative decision-making” at all levels.⁹⁴

Public participation principles, encompassing transparency and accountability mechanisms, are important because they lead to better decisions and higher public confidence. There are also important emerging norms of international law recognising the rights of non-state actors, including indigenous peoples, as important contributors to

international legal processes. This may require special measures to ensure inclusion of marginalised groups.

To ensure that environmental law is effective in providing an enabling environment for sustainable development, environmental rule of law needs to be nurtured in a manner that builds strong institutions that engage the public, ensures access to information and justice, protects human rights, and advances true accountability for all environmental actors and decision makers.

United Nations Environment Programme “Environmental Rule of Law: First Global Report” 2019

b. Does UNCLOS hinder or support the implementation of the principle of ‘public participation’ at the ISA?

While UNCLOS mandates the ISA to act on behalf of [hu]mankind as a whole, minimal guidance is provided with respect to public participation in ISA decision-making, save for reference to “suitable arrangements” for consultation and co-operation with international and non-governmental organization.⁹⁵ (and requirements relating to direct participation by developing state nationals in research and other seabed mineral activities).

In terms of information-sharing, UNCLOS does stipulate that environmental data shall not be deemed proprietary,⁹⁶ though this is balanced against an obligation for the ISA to protect confidential business information.⁹⁷ Otherwise information-sharing arises only in relation to States being required to make available results of marine scientific research, or technology transfer.

In terms of remedy, UNCLOS provides for some Tribunal oversight of the ISA, though these provisions do not allow judicial review of the ISA’s use of its discretionary powers, nor the substance of its rules and regulations.⁹⁸

UNCLOS also signals that national governments will individually play a significant role in discharging environmental responsibilities, and this includes providing recourse to justice via domestic judicial procedures.⁹⁹

Indigenous rights, and principles relating to traditional knowledge and free, prior and informed consent, are not referenced in UNCLOS Part XI.

c. What implementation efforts have there been at the ISA?

In 2017, an independent review of the ISA concluded that “*the current governance processes of the Authority are not sufficiently transparent.*”¹⁰⁰ There have however been some significant improvements in information-sharing by the ISA in recent times.

The ISA allows accredited observer organisations to attend its annual sessions, and to make interventions; and for the last couple of years, annual Council and Assembly meetings have been live-streamed. Independent reporting services have recently been commissioned to publish daily reporting bulletins and meeting summaries.¹⁰¹ This is especially useful given that there is otherwise no formal minutes or proceedings report from the annual sessions of the ISA. The ISA has also recently begun posting information

pertaining to inter-sessional workshops on its website.¹⁰²

A consultative approach has been adopted in the ongoing drafting process for new Exploitation Regulations. Discussion papers and draft documents have been published online, with calls for stakeholder responses – most of which have also been made publicly available.¹⁰³ Though it has not always been explained how those comments have or have not been taken into account in developing revised iterations of the document.

The negotiations over the draft Exploitation Regulations have seen a push for higher degrees of transparency. For example, the current draft requires publication of the contracts; and any data that the contractor wishes to designate as confidential will have to pass a specific test *‘that there would be substantial risk of serious or unfair economic prejudice if the data and information were to be released’*.

There are however numerous examples of remaining concerns about lack of access to information, or opportunity to participate meaningfully.

A concerning lack of engagement by the ISA with indigenous rights issues has been noted by stakeholders, including failure to incorporate in the rules or practices of the ISA: customary knowledge, protection of cultural practices, minimising impacts on coastal communities, and development of the principle of free, prior and informed consent.¹⁰⁴

One study rated the ISA’s standing in participation in decision-making as significantly lower than other relevant comparators¹⁰⁵. Reasons include that:

- technical matters, applications for new contracts, rule-drafting, contractor reporting, and other key developments fall under the purview of the ISA’s advisory bodies (primarily the LTC), whose meetings are generally closed and subject to minimal recording and reporting;
- all contracts, plans of work, annual reports, and new contract applications are treated as confidential and not shared publicly (or even with the Council);
- it is unclear how, or even whether, the ISA monitors and enforces contractor compliance;
- there has been failure to follow public procurement processes in hiring consultants and expert inputs commissioned for the ISA are often not shared beyond the ISA’s Secretariat and/or LTC; and
- opportunities to participate in inter-sessional workshops are limited.

External reviewers also recommend that the ISA *“should develop a policy on transparency and conflicts of interest and should consider revising the Regulations to set standards for confidentiality”*¹⁰⁶. These points reflect the rather pro-contractor status quo, in which 13 out of 36 member States who sit on the ISA’s core decision-making body are also sponsoring States for ISA exploration contracts, which may presuppose a promoting interest. Also, that the determination of what information can be disclosed and what withheld currently rests solely with the ISA contractors.

Since the ISA Assembly in 2017 called for *“continued investment in better data management and data-sharing mechanisms,”*¹⁰⁷ and observed that, *“the sharing and accessing of environmental data collected by contractors seems to require improvement,”*¹⁰⁸ the ISA has launched ‘DeepData’ a database aimed to make contractor data publicly available. This is a significant and long-awaited advancement, though full database functionality, and comprehensive datasets do not yet seem to have been

achieved.

All of these points of concern have been raised by actors who are already within the inner circle of ISA proceedings. Perhaps more concerning is the general level of ignorance globally about the existence of the ISA and the humankind-affecting decisions it is poised to make. Not many observer organisations attend the ISA, nor do these represent all relevant stakeholders or societal interests – e.g. there is no observer organisation representing indigenous communities, or youth, or women. There is very low State engagement at the ISA: it is rare for the Assembly to achieve its 51% quorum (84 States) in attendance. Not many governments who do attend have taken steps to filter information about the ISA and deep seabed mining to their populations, let alone seeking public views to inform their national positions at the ISA.

d. Recommendations for further implementation

The ISA has been criticised as opaque and using its obscurity as a means to push a one-sided pro-mining agenda forward without proper accountability to the humankind it is required to serve^{109 110 111}. There has however been a positive trajectory in recent times to try to open proceedings to a wider audience. **These efforts should be continued and supplemented, including the following recommendations:**

- 1. ISA member States should be requested to conduct unbiased and inclusive, science-based national awareness-raising and consultation about the ISA and potential deep seabed mining, and ideally to report back on the results to the ISA to incentivise action.**
- 2. The LTC's reports to the Council should be more detailed, the Council should receive copies of any source documents that are the subject of the LTC report, and the LTC report should explain in full the discussions and any dissensions behind the LTC's recommendations to Council.**
- 3. If seabed mining is to go ahead, applications for ISA contracts, copies of contracts and their associated plans of work (once granted) and contractor's annual reports should be shared with the ISA Council, and made publicly available.**
- 4. A public call should be made to increase civil society representation at ISA meetings.**
- 5. Representatives of indigenous groups, peoples with traditional knowledge, communities with cultural and spiritual connection to the oceans, should be invited and facilitated to participate in ISA proceedings.**
- 6. The ISA should consider creation of a 'Council of Ocean Custodians' comprising different and currently under-represented groups, empowered as a participant in ISA decision making processes.**
- 7. The functionality and data integrity of DeepData should be improved.**
- 8. Options for formal and informal complaints-handling and dispute resolution relating to ISA decisions should be explored and implemented, including whistle-blowing procedures and an ombudsman.**

Conclusion

This report highlights that UNCLOS provides a decent starting point for implementing modern environmental law principles into the regime and practices at the ISA. But some effort is yet required to achieve their realisation in practice.

The ISA is tasked with a challenging mandate: both to issue rights to mine the deep seabed and to ensure environmental protection. The ISA is also empowered to support growth in the market for the metals¹¹² under its competency, and to create a mining limb that will enable the ISA itself to participate directly in the extraction, transportation, processing and marketing of the minerals¹¹³. Permitting mining will generate revenue that can fund the administrative costs of the ISA (and the salaries of its Secretariat), and give it a *raison d'être*. As a result, the ISA faces in-built conflicts of interest, which will need careful management and accountable governance structures to avoid procedural impropriety, opacity, bias, corporate capture – and consequently, poor outcomes for humankind.¹¹⁴

The ISA is a unique institution, but it is not operating in a vacuum. Principles of environmental law have evolved since the ISA's inception, which directly address potential pitfalls of natural resource governance. As the custodian of the world's largest environment, representing the largest possible constituency (all of humankind, now and in the future) the ISA should embrace a modern interpretation of UNCLOS in keeping with the highest standards of environmental justice and democracy, as proposed in the recommendations contained in this report.

¹ UNCLOS Art. 151(1)(a)

² UNCLOS Art. 170

³ See, e.g., House of Commons Environmental Audit Committee (2019). Sustainable Seas, Fourteenth Report of Session 2017–19. Published 8 January 2019. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/980/980.pdf>

⁴ Report of the World Commission on Environment and Development: "Our common future," UNGA, UN Doc. A/42/427, annex, 4 August 1987, para. 1 [hereinafter "Brundtland Report"]. See also Rio Declaration On Environment and Development; United Nations Conference On Environment and Development (UNCED), UN Doc A/CONF.151/26/Rev. 1, 3-14 June 1992, Rio De Janeiro, Brazil, Principle 3 [hereinafter "Rio Declaration"].

⁵ International Court of Justice, Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Tests (*New Zealand v. France*), Case Order of 22 September 1995, Dissenting Opinion of Judge Weeramantry.

⁶ UN Secretary-General, Report on Intergenerational Solidarity and the Needs of Future Generations, UN Doc A/68/x (5 August 2013) para. 3.

⁷ *Greenpeace Nordic Association & Natur Og Ungdom v The Government of Norway* (Case No: 16-166674TVI-OTIR/06), Amicus Brief by CIEL, <https://www.xn--klimasksml-95a8t.no/wp-content/uploads/2019/10/Brief-of-Amicus-Curiae-CIEL-in-GreenpeaceNaturUngdom-v-Norway-Oct-28-2017.pdf>

⁸ The Stockholm Declaration on the Human Environment, adopted June 1972, UN Doc. A/Conf.18/14/Rev.1(1973) Principle 1 (humanity "bears a solemn responsibility to protect and improve the environment for present and future generations") and Principle 2 (natural resources "must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate") [hereinafter "Stockholm Declaration"]; See also Rio Declaration, Principle 3; See also Edith Brown Weiss, "Our Rights and Obligations to Future Generations for the Environment" (1990) 84 A.J.I.L. 198.

⁹ See Brundtland Report, para. 12 (explaining "As for non-renewable resources, like fossil fuels and minerals, their use reduces the stock available for future generations. But this does not mean that such resources should not be used. In general the rate of depletion should take into account the criticality of that resource, the availability of technologies for minimizing depletion, and the likelihood of substitutes being available. . . With minerals and fossil fuels, the rate of depletion and the emphasis on recycling and economy of use should be calibrated to ensure that the resource does not run out before acceptable substitutes are available.")

¹⁰ Oberle, Bruno, et al. *Global Resources Outlook: 2019*. International Resource Panel, United Nations Environment Programme, p. 112, Figure 4.17(c).

¹¹ Art. 157(1) (The ISA is the body through which State Parties "organize and control activities in the Area, particularly with a view to administering the resources of the Area").

¹² Kim R.E., 'Should deep seabed mining be allowed?' *Marine Policy* 82 (2017), pages 134-137.

¹³ UNCLOS Art 150(b)

¹⁴ Verlaan, P and Lodge, M.W., Elements October 2018

¹⁵ Christiansen, S et al. 'Towards a Contemporary Vision for the Global Seafloor. Implementing the Common Heritage of Mankind' [2019] Ecology Publication Series volume 45, Heinrich Boell Stichtung and Institute of Advanced Sustainability Studies

¹⁶ UNCLOS Art. 145.

¹⁷ UNCLOS Art. 150

¹⁸ UNCLOS Art. 140.

¹⁹ UNCLOS Art. 140.

²⁰ In retrospect this wording – while anticipating the SDGs – is rather odd for an ISA management instrument, given that use of marine biodiversity is clearly outside of the ISA's mandate.

²¹ Environmental Management Plan for the Clarion-Clipperton Zone, UN Doc. ISBA/17/LTC/7 (13 July 2011) [hereinafter CCZ Environmental Management Plan].

²² *Id.* para. 7.

²³ Strategic Plan, para. 12.

²⁴ NGOs Submission on the ISA's Draft Strategic Plan, 27 April 2018, <https://ran-s3.s3.amazonaws.com/isa.org/jm/s3fs-public/documents/EN/SPlan/Subs/Joint.pdf>; IASS Comments on the ISA's Draft Strategic Plan, 12 April 2018, <https://ran-s3.s3.amazonaws.com/isa.org/jm/s3fs-public/documents/EN/SPlan/Subs/IASS.pdf>.

²⁵ ISA website: <https://www.isa.org/jm/isa-voluntary-commitments>

²⁶ March 2019, as of the time of writing (May 2020), copy accessible here: <https://www.isa.org/jm/document/isba25cwp1-0>

²⁷ <https://www.dosi-project.org/wp-content/uploads/2015/08/040-DOSI-Climate-change-considerations-V4.pdf.pdf>

²⁸ See e.g. Kim, R.E. 'Should deep seabed mining be allowed?' *Marine Policy* 82, pages 134-137

²⁹ *Ibid.* n. 11 [Christiansen et al], page 35

³⁰ The Strategic Plan characterizes the ISA's obligations to sustainable development as subject to the mandates currently provided under the convention (rather than the other way around): "The challenge for the Authority is to contribute to the timely and effective implementation of the Sustainable Development Goals, in particular Goal 14, through implementing the economic, environmental and social mandates assigned to it under the Convention and the 1994 Agreement." Strategic Plan, para. 10.

³¹ UNCLOS Art. 145 ("Necessary measures shall be taken in accordance with this Convention with respect to activities in the Area to ensure effective protection for the marine environment from harmful effects which may arise from such activities"). See also Annex III art. 17(2)(f) (emphasizing that measures are to address "harmful effects directly resulting from activities in the Area").

³² *Ibid.* n. 11 [Christiansen et al], page 71ff

³³ Ian Brownlie, *Principles of Public International Law*, 7th ed., 2008, pp.275-285; Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment*, 3rd ed., Oxford 2009, pp.143-152.

³⁴ Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), UN Doc. A/CONF/48/14/REV1, Principle 21

³⁵ Declaration of the UN Conference on Environment and Development (Rio Declaration), UN Doc. A/CONF.151/26/Rev.1, Principle 2; UNFCCC (adopted 9 May 1992, in force 21 March 1994), preamble, recital 8; Convention on Biological Diversity (adopted 22 May 1992, in force 29 December 1993), Art.3.

³⁶ See: ICJ, Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, ICJ Reports 1996, p.226 para.29.

³⁷ Convention on Biological Diversity 1992, United Nations, Art. 8(a).

³⁸ Decision IX/20, Annex I.

³⁹ Overview of existing measures, means and actions relating to the protection and conservation of the marine environment in areas beyond national jurisdiction, UN Doc. ISBA/24/C/15 (31 May 2018).

⁴⁰ UNGA resolutions 61/105 (6 March 2007), 64/72 (19 March 2010), and 66/68 (28 March 2012).

⁴¹ See International Finance Corporation's Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (June 27, 2019).

⁴² Rainey, Hugo J., et al. "A review of corporate goals of No Net Loss and Net Positive Impact on biodiversity." *Oryx* 49.2 (2015): 232-238; Niner, Holly J., et al. "Deep-sea mining with no net loss of biodiversity—an impossible aim." *Frontiers in Marine Science* 5 (2018): 53.

⁴³ See, e.g., L.A. Levin, et al., Defining "serious harm" to the marine environment in the context of deep-seabed mining, *Mar. Policy* 74 (2016) 245–259 [hereinafter "Levin et al."]; ECORYS, Study to investigate the state of knowledge of deep-sea mining - final report to the European Commission under FWC MARE/2012/06 - SC E1/2013/04 (2014) [hereinafter "ECORYS Study"].

⁴⁴ Niner, Holly J., et al. "Deep-sea mining with no net loss of biodiversity—an impossible aim." *Frontiers in Marine Science* 5 (2018): 53 [hereinafter "Niner et al."].

⁴⁵ Levin, et al. at 251.

⁴⁶ ECORYS Study at 141; See also Hydrothermal Vent Fields EBSA, Clearing-House Mechanism of the Convention on Biological Diversity (12 June 2015), <https://chm.cbd.int/database/record?documentID=204107>

⁴⁷ *Id.* at 252.

⁴⁸ Levin, et al.

⁴⁹ Ecological safeguards for deep seabed mining, Dr. Sabine Christiansen, Dr. Aline Jaeckel, Katherine Houghton IASS Potsdam. Environmental Research of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, TEXTE 113/2019 at 111 [hereinafter "German Ministry Report"] https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2019-07-11_texte_113-2019_deep-seabed-mining.pdf

⁵⁰ See for example: Atwood TB, Witt A, Mayorga J, Hammill E and Sala E (2020) *Global Patterns in Marine Sediment Carbon Stocks*. *Front. Mar. Sci.* 7:165, describing how marine sediments in abyssal zones (half of which are under the ISA's jurisdiction) represent a large and globally importance carbon sink, yet are poorly protected; and identifying mining as a potential threat.

⁵¹ IPCC, 2019: Technical Summary In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*, H.-O. Pörtner, et al. (eds.) at 63, 65.

⁵² Niner, et al.

⁵³ Van Dover, Cindy L., et al. “Biodiversity loss from deep-sea mining.” *Nature Geoscience* 10.7 (2017): 464-465; Niner, et al.

⁵⁴ UNCLOS Art. 192.

⁵⁵ UNCLOS Art 209

⁵⁶ UNCLOS Art .194.

⁵⁷ UNCLOS Arts. 139, 162(2)(w) and (x), 165(2)(k) and (l); See also annex III Article 18.

⁵⁸ UNCLOS Art. 145

⁵⁹ UNCLOS Art. 194(5)

⁶⁰ UNCLOS Art. 145

⁶¹ Id.

⁶² Decision of the Assembly of the International Seabed Authority relating to the strategic plan of the Authority for the period 2019_2023, UN Doc. ISBA/24/A/10 (27 July 2018), para. 28 [hereinafter “Strategic Plan”].

⁶³ Decision of the Council relating to an environmental management plan for the Clarion-Clipperton Zone ISBA/18/C/22: <https://www.isa.org.jm/documents/isba18c22>

⁶⁴ Namely the Mid-Atlantic Ridge, the Indian Ocean triple junction ridge and nodule-bearing province, the North-West Pacific and South Atlantic for seamounts: <https://ran-s3.s3.amazonaws.com/isa.org.jm/s3fs-public/files/documents/isba24-c3-e.pdf>

⁶⁵ Lily H., Roady S.E. (2020) “*Regulating the Common Heritage of Mankind: Challenges in Developing a Mining Code for the Area*” In: Ribeiro M., Loureiro Bastos F., Henriksen T. (eds) *Global Challenges and the Law of the Sea*. Springer, Cham

⁶⁶ See <https://ran-s3.s3.amazonaws.com/isa.org.jm/s3fs-public/documents/EN/Workshops/2010/Pres/SMITH.pdf>. Page 32 shows different recommendations for placement of APEIs in the Clarion-Clipperton Zone, based on scientific criteria aimed at conservation of biodiversity and ecosystem function and services. Thirteen of those proposed sites overlapped with contract areas. The ISA in 2012 adopted nine APEIs, none of which overlapped with contract areas.

⁶⁷ Sala E, Aburto-Oropeza O, Paredes G, Parra I, Barrera JC, Dayton PK. 2002. A general model for designing networks of marine reserves. *Science* 298

⁶⁸ IISD, Summary of The Twenty- Third Annual Session of The International Seabed Authority: 8-18 August 2017, Earth Negotiations Bulletin (21 Aug. 2017). <https://enb.iisd.org/download/pdf/enb25151e.pdf>

⁶⁹ <https://ran-s3.s3.amazonaws.com/isa.org.jm/s3fs-public/documents/EN/SG-Stats/isa-statement.pdf>

⁷⁰ Johnson, D., et al. “Periodic review of the international seabed authority pursuant to UNCLOS article 154: final report.” *Seascope Consultants, Southampton, UK* (30 Dec. 2016) [hereinafter “Art. 154 Independent Review”].

⁷¹ Rio Declaration, Principle 15.

⁷² Global Pact Report, para. 12.

⁷³ Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea relating to the conservation and management of straddling fish stocks and highly migratory fish stocks 1995, Article 6

⁷⁴ International Tribunal on the Law of the Sea, Seabed Disputes Advisory Opinion no. 17 of 1 February 2011: https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/17_adv_op_010211_en.pdf

⁷⁵ SPC-EU Deep Sea Minerals Project, Information Brochure 13 Application of the Precautionary Principle for Deep Sea Minerals https://dsm.gsd.spc.int/images/pdf_files/dsm_brochures/DSM_Brochure13.pdf

⁷⁶ IUCN, Deep Seabed Mining: A Rising Environmental Challenge; See also Levin et al.; Gollner, Sabine, et al. “Resilience of benthic deep-sea fauna to mining activities.” *Marine Environmental Research* 129 (2017): 76-101 [hereinafter “Gollner et al.”]; Jeff Ardron et al., Environmental management of deep-sea chemosynthetic ecosystems: justification of and considerations for a spatially based approach. 2011(hereinafter “ISA Technical Study No. 9”); German Ministry Report.

⁷⁷ Hilário, Ana, et al. “Estimating dispersal distance in the deep sea: challenges and applications to marine reserves.” *Frontiers in Marine Science* 2 (2015): 6; See also L.A. Levin et al.; ISA Technical Study No. 9; Gollner et al.

⁷⁸ Jaeckel A, “The International Seabed Authority and the Precautionary Principle” Brill Nijhoff 2017, chapter 4.4

⁷⁹ See the three sets of Exploration Regulations, accessible here: <https://www.isa.org.jm/mining-code/Regulations>

⁸⁰ UNGA, UN Doc A/RES/58/240 (23 December 2003), paragraph 52.

⁸¹ “What role for Ocean Renewable energy and Deep-Sea Minerals in a Sustainable Future?” The High Level Panel on Sustainable Ocean Economy, Blue Paper, 2020.

⁸² See for example the Regulations for prospecting and exploration for polymetallic sulphides in the Area, UN Doc. ISBA/16/A/12/Rev.1 (15 November 2010), Regulation 33(2); See also CCZ Environmental Management Plan; and the draft Exploitation Regulations ISBA/25/C/WP.1 22 March 2019.

⁸³ Strategic Plan, para. 14.

⁸⁴ *Ibid.* n. 64 p.304

⁸⁵ Jaeckel, A ‘Strategic environmental planning for deep seabed mining in the Area’ Marine Policy Volume 114, April 2020

⁸⁶ How to Improve Environment Impact Assessments in the 2019 International Seabed Authority Draft Regulations Sixth report of the Code Project, The Pew Charitable Trusts: https://www.pewtrusts.org/-/media/assets/2020/03/sixth_report_of_the_code_project_v2.pdf

⁸⁷ Lily H., Roady S.E. (2020) “*Regulating the Common Heritage of Mankind: Challenges in Developing a Mining Code for the Area*” In: Ribeiro M., Loureiro Bastos F., Henriksen T. (eds) *Global Challenges and the Law of the Sea*. Springer, Cham

⁸⁸ *Ibid.* n. 64 p.290

⁸⁹ UN General Assembly, *International Covenant on Civil and Political Rights*, 16 December 1966, United Nations, Treaty Series, vol. 999, p. 171, Art. 19.

⁹⁰ *Id.*, Art. 25.

⁹¹ *Id.*, Art. 2(3).

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- ⁹² Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, UNCTC vol. 2162, p.447 (Aarhus Agreement); Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean, . C.N.195.2018, Treaties-XXVII.18 of 9 April 2018 (Escazu Agreement).
- ⁹³ See, e.g., UN General Assembly, The World Charter for Nature, UN Doc. A/RES/37/7 (28 Oct. 1982), Art. 23; Agenda 21; Rio Declaration, Principle 10.
- ⁹⁴ SDG Targets 16.6, 16.7, & 16.10.
- ⁹⁵ UNCLOS Art. 169.
- ⁹⁶ UNCLOS Annex III, Art. 14.2.
- ⁹⁷ See, e.g., arts. 163(8), 168(2) & 181(2).
- ⁹⁸ UNCLOS, Art. 189.
- ⁹⁹ UNCLOS Art. 235.
- ¹⁰⁰ Art. 154 Independent Review at 22.
- ¹⁰¹ <https://enb.iisd.org/oceans/isa/2020-1/>
- ¹⁰² <https://www.isa.org.jm/workshops>
- ¹⁰³ <https://www.isa.org.jm/legal-instruments/ongoing-development-regulations-exploitation-mineral-resources-area>
- ¹⁰⁴ See for example: UN ECOSOC 2016“*Study on the relationship between indigenous peoples and the Pacific Ocean*,” [E/C.19/2016/3] and Aguon and Hunter, Stanford Law Journal “*Second Wave Due Diligence: The Case for Incorporating Free, Prior, and Informed Consent into the Deep Sea Mining Regulatory Regime*”; Singh and Pouponneau “*Comments to the Draft Regulations on Exploitation of Mineral Resources in the Area: Transboundary harm and the rights of Coastal States adjacent to the Area*”;
- ¹⁰⁵ Ardron, J.A. (2018) Transparency in the operations of the International Seabed Authority: An initial assessment. Marine Policy, 95, 324-331
- ¹⁰⁶ UNCLOS Art. 154 Independent Review at 55.
- ¹⁰⁷ Decision of the Assembly of the International Seabed Authority relating to the final report on the first periodic review of the international regime of the Area pursuant to article 154 of UNCLOS, UN Doc. ISBA/23/A/13 (18 Aug. 2017) [hereinafter “Art. 154 Review”], Recommendation no. 3.
- ¹⁰⁸ *Id.*, Recommendation no. 6.
- ¹⁰⁹ The Atlantic. (January 2020) <https://www.theatlantic.com/magazine/archive/2020/01/20000-feet-under-the-sea/603040/>
- ¹¹⁰ In Deep Water. Greenpeace International (2019) <https://www.greenpeace.org/international/publication/22578/deep-sea-mining-in-deep-water>
- ¹¹¹ Why the Rush? Deep Sea Campaign (2019) <http://www.deepseaminingoutofourdepth.org/wp-content/uploads/Why-the-Rush.pdf>
- ¹¹² UNCLOS Art. 151(1)(a)
- ¹¹³ UNCLOS Art. 170
- ¹¹⁴ See, e.g., House of Commons Environmental Audit Committee (2019). Sustainable Seas, Fourteenth Report of Session 2017–19. Published 8 January 2019. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/980/980.pdf>

WWF's vision is a Sustainable Blue Economy, that:

- provides social and economic benefits for current and future generations;
- restores, protects and maintains the diversity, productivity and resilience of marine ecosystems, and;
- is based on clean technologies, renewable energy, and circular material flows.

Our commitment

WWF will work with partners across government, industry, and civil society including coastal communities, women and youth to implement this vision into practice.

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