



**IUCN Comments on
Draft Standard and Guidelines for Environmental Impact
Assessment Process
Draft Guidelines for the establishment of baseline environmental data
Draft Guidelines for the Preparation of Environmental
Management and Monitoring Plans
(combined)**

For submission to: ola@isa.org.jm with consent for publication

IUCN COMMENTS (first of three)

<i>Document reviewed</i>	
Title of the draft being reviewed:	Draft Standard and Guidelines for Environmental Impact Assessment Process
<i>Contact information</i>	
Surname:	Gjerde/Epps
Given Name:	Kristina/Minna
Government (if applicable):	
Organization (if applicable):	IUCN
Country:	Switzerland
E-mail:	kgjerde@eip.com.pl & minna.epps@iucn.org
<i>General Comments</i>	
<p>While IUCN appreciates the work that has gone into preparation of the draft Standards and Guidelines, IUCN strongly support the view that it is too early to adopt the draft standards and guidelines related to the EIA process or the draft guidelines for preparation of an EIS, as the draft exploitation regulations from March 2019 used as a basis fail to reflect stakeholder comments or an agreed approach to protection of the marine environment, which would be the necessary basis for measuring the performance of contractors.</p> <p>Even though the Government of Nauru has opted to invoke the two-year trigger under the 1994 Implementation Agreement (Annex I, Section 1(15)), it remains critically important not to rush the process of developing the draft standards/guidelines as these may set the framework for future deep seabed mining for 30 years or more.</p> <p>The approach to protection of the marine environment needs to reflect at minimum UNCLOS</p>	

Article 145 (adoption of necessary measures to ensure effective protection from harmful effects), UNCLOS Article 162 (to prevent serious harm), UNCLOS Article 192 (protect and preserve the marine environment), Sustainable Development Goal 14, in particular 14.2 (avoid significant adverse impacts)¹ and the soon to be adopted Post-2020 Global Biodiversity Framework (“Living in Harmony with Nature”).

Many of the key terms have yet to be scientifically defined,² nor have strategic environmental goals and objectives been adopted to set the basis for environmental regulation.³

Such science-based standards are particularly important under UNCLOS Part XI, as activities in the Area are to be carried out for the benefit of mankind as a whole, on whose behalf the Authority is charged with acting (UNCLOS Articles 136, 137 and 140).

Accordingly, the draft regulations, standards and guidelines should require a **high degree of precaution** through the adoption of, among other things, decision rules, ecological criteria, and institutional and procedural safeguards before any applications for deep seabed mining should be considered (see suggestions below). And considering the need to maintain the principle of the common heritage of mankind, the international regime needs to be designed to ensure that any exploitation of the resources of the Area is equitable,⁴ including through a far more equitable financial benefit sharing regime than that currently on the table.

In addition, regarding the process used for developing the draft Standards and Guidelines, IUCN suggests that a much more **collaborative, transparent, and participatory work programme** open to independent scientists and the full range of stakeholders needs to be adopted to ensure a science-based and inclusive process.

Further work to develop environmental standards and guidelines as well as related environmental goals and indicators should be based on, among other things, a solid scientific understanding of relevant thresholds for ensuring effective protection, avoiding significant adverse impacts, and preventing serious harm. The environmental standards, indicators and thresholds need to be set to reflect the inherent sensitivities of the deep-sea environment and potential cumulative effects, including climate change-related effects such as rising water temperatures in the deep ocean, increasing stratification and ocean deoxygenation, and accompanying declines in productivity and resilience.

¹ SDG 14.2 commits States to take action to “by 2020, sustainably manage, and protect marine and coastal ecosystems **to avoid significant adverse impacts**, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans...”

² LA Levin, K Mengerink, KM Gjerde, AA Rowden, CL Van Dover, MR Clark, .et al, 2016. “Defining “serious harm” to the marine environment in the context of deep-seabed mining” *Marine Policy* 74, 245-259

³ V Tunncliffe , A Metaxas, J Le, E Ramirez-Llodra, and LA Levin (2020) “[Strategic Environmental Goals and Objectives: Setting the basis for environmental regulation of deep seabed mining](https://doi.org/10.1016/j.marpol.2018.11.010)” *Marine Policy*, Volume 114,, 103347; <https://doi.org/10.1016/j.marpol.2018.11.010>

⁴ Jaeckel, A. (2020). [Benefitting from the Common Heritage of Humankind: From Expectation to Reality](https://doi.org/10.1163/15718085-BJA10032), *The International Journal of Marine and Coastal Law*, 35(4), 660-681. doi: <https://doi.org/10.1163/15718085-BJA10032>

Overall, IUCN would also like to highlight the following points:

1) There is a need to develop binding standards for exploration before considering the adoption of those relating to exploitation.

The draft EIA standards and guidelines for the Exploitation Regulations are premature as there are still no binding regulations for baseline assessments or testing during the exploration phase. Binding standards for both exploration and exploitation are a prerequisite to obtaining a standardized, systematic or comprehensive approach across all contractors. The “Recommendations for the guidance of contractors for assessment of impacts arising from exploration for marine minerals” (ISBA/25/LTC/6/Rev.1 (30 March 2020)) are insufficient for these purposes.

Binding standards are needed to **ensure that key baseline information relevant to potential impacts of Exploitation (and not just exploration phase) is acquired and important procedural safeguards are followed.** These should cover, at minimum, preparation, public consultation and mandatory review processes for EIAs for testing of equipment/test mining/invasive sampling and other activities that may cause harmful effects; and require the collection, synthesis and sharing of baseline data over **an appropriate spatial and temporal scale.** **Such information is essential** to understand, assess, test hypotheses and set standards and indicators regarding potential impacts of deep-sea mining activities.

2) The draft standards and guidelines make an inadequate use of the mitigation hierarchy and offsets.

The text in the Standards paragraphs 15 and 16 (lines 155-163) and Guidelines (Section V, paragraphs 84-97; lines 1013 -1106) should be amended to reflect that **the mitigation hierarchy - avoid/prevent; minimize; rehabilitate, restore; offset -- is not achievable for deep sea mining.**⁵

In line with the mitigation hierarchy and offsets, the draft standards and guidelines should emphasize that **avoidance of impacts** that could cause significant adverse effects such as loss of biodiversity or important ecosystem services (among other science-based criteria) is the only practical approach. Should such avoidance of significant adverse effects not be possible, applications for deep seabed mining should not be approved in line with the precautionary principle.

⁵ Van Dover, C.L., Ardron, J., Escobar Briones, E., Gianni, M., Gjerde, K.M., Jaeckel, A., Jones, D.O.B., Levin, L.A., Niner, H.J., Pendleton, L., Smith, C.R., Thiele, T., Turner, P.J., Watling, L., and Weaver, P.P.E. (2017). [Biodiversity loss from deep-sea mining](#). Nature Geoscience; 10, 464–465 doi:10.1038/ngeo2983

Niner, H.J., Ardron, J.A., Escobar, E.G., Gianni, M., Jaeckel, A., Jones, D.O.B., Levin, L.A., Smith, C.R., Thiele, T., Turner, P.J., Van Dover, C.L., Watling, L., and Gjerde, K.M. (2018). [Deep-sea mining with no net loss of biodiversity—An impossible Aim](#). Frontiers in Marine Science 5. doi: 10.3389/fmars.2018.00053.

Even minor disturbances of the deep seafloor have been found to have long-term effects, with little to no recovery even after 30 years. The DISCOL seafloor disturbance experiment conducted in 1989 and revisited four times since revealed “The disturbance is much stronger and lasting much longer than we ever would have thought,” Hjalmar Thiel said in 2019. “The disturbance site has never recovered. In the ploughed areas, which remain as visible today as they were 30 years ago, there’s been little return of characteristic animals such as sponges, soft corals and sea anemones.”⁶

Restoration of deep-sea ecosystems and biodiversity is neither a technically nor economically feasible option *on timescales relevant to management and possibly for many human generations*.⁷ Moreover, offsets are neither effective nor appropriate for addressing residual impacts when “offsets cannot be located where the affected biodiversity is found, and where the affected biodiversity is important for geographically restricted functions such as connectivity (as is the case for the deep sea).”⁸

As noted in IUCN’s Policy on Biodiversity Offsets (WCC Res 059)⁹:

*“Offsets must only occur after all previous steps in the mitigation hierarchy have been considered and no alternatives are available. Avoidance is the first and most important step in the mitigation hierarchy. **Biodiversity offsets must never be used to circumvent responsibilities to avoid and minimise damage to biodiversity, or to justify projects that would otherwise not happen....***

*The mitigation hierarchy must be applied at the landscape or seascape level with **mitigation actions designed and implemented at a site or project level**. Governments should ensure the mitigation hierarchy is embedded in the framework of landscape and seascape level planning and legislation and is part of existing and future strategic development plans.*

*Only after applying the earlier steps in the mitigation hierarchy should biodiversity offsets be employed to address the residual impact in order to achieve **at least No Net Loss and preferably a Net Gain at the project level**. The terms No Net Loss or Net Gain refer to the outcome achieved compared to a reference scenario. This reference scenario can be what is likely to have occurred in the absence of the project and the offset, or one that provides a better outcome for biodiversity conservation. Societal values should also be accounted for and used to inform the design and implementation of biodiversity offsets.*

In certain circumstances, residual impacts on biodiversity (after completing the avoidance, minimization and rehabilitation steps of the mitigation hierarchy) cannot

⁶ Heffernan, O. [Seabed mining is coming — bringing mineral riches and fears of epic extinctions](#). Nature 24 July 2019, quoting Hjalmar Thiel, the University of Hamburg ecologist who co-devised and conducted the first test.

⁷ Niner et al., 2018

⁸ Van Dover et al., 2017

⁹ [IUCN policy on biodiversity offsets WCC-2016-Res-059-EN](#) (2016)

*be offset. Additionally, there are some components of biodiversity for which impacts could theoretically be offset, **but with a high risk of failure**. Under these circumstances, biodiversity offsets are not appropriate, and this means the project as designed should not proceed (**emphasis added**).*

3) The role of the precautionary principle, avoidance and minimization of harm and adaptive management should be duly and fully reflected in the standard and guidelines for EIA process.

The Precautionary Principle requires more than careful anticipation, avoidance and mitigation of potential harm from human activities. As elaborated in IUCN Council Guidelines (2007):¹⁰ it requires “humility and restraint, acknowledging human fallibility in the search for certainty, the limits of science, and the tendency to over-reach in the quest for human security and well-being.”¹¹

Adaptive management can play a part in implementing the Precautionary Principle, but only under certain specific circumstances. As further stated in the IUCN Council Guidelines, “An adaptive approach can be useful in the implementation of the Precautionary Principle **as part of a rigorously planned and controlled trial, with careful monitoring and periodic review to provide feedback, allowing amendment of decisions in light of such feedback and new information.**” However, there are as yet no plans for a controlled trial of deep-sea mining, or extant technological capacity to allow feedback and rapid response before a significant adverse change has occurred. Moreover, as further noted by Jaeckel (2016), “It may be queried whether adaptive management could really be applied without flexible contracts” which are not presently envisaged in the draft regulations.¹²

There are also times when applying the Precautionary Principle may require strict prohibition of activities. As further described in the IUCN Council Guidelines, “This is particularly pertinent in situations where [...] the **potential damage is likely to be immediately irreversible** (such as the spread of an invasive species), **where particularly vulnerable species or ecosystems are concerned**, and **where other measures are likely to be ineffective**. This situation is often the result of a failure to apply more moderate measures at an earlier stage.” (Emphasis added).

As the damage caused by deep sea mining is expected to be both immediately irreversible and affect particularly vulnerable species and ecosystems, adaptive management is unlikely to be effective and strict prohibition of activities may be required.

In the alternative it is imperative that the mining regulations and ISA decision-making processes are revised to instill true evidentiary requirements that the environmental impacts of mining will not cause significant harm, as described in section 4) below.

¹⁰ [The IUCN GUIDELINES FOR APPLYING THE PRECAUTIONARY PRINCIPLE TO BIODIVERSITY CONSERVATION AND NATURAL RESOURCE MANAGEMENT approved by the IUCN Council 14-16 May 2007](#)

¹¹ Id.

¹² A Jaeckel, T Morato (2017) ‘[Adaptive Management](#)’ in [First Report of the CODE Project – Developing ISA Environmental Regulations](#). PEW Charitable Trusts; pp. 23-33

4) The sections on Review (section VII) and Decision-making (section VIII) should be revised to incorporate clear and precautionary decision rules, criteria and procedural safeguards. These could be drawn from the 1988 Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA) and its successor the 1992 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol).¹³

CRAMRA's Article 4(1) sets for a **twofold decision rule** providing a solid foundation for a precautionary approach to mineral activity in unknown environments:

- any "(d)ecision about Antarctic mineral resource activities be based upon information adequate to enable informed judgements to be made about their possible impacts";¹⁴ and
- a negative assumption that no mineral activities "shall take place unless this information is available"¹⁵.

CRAMRA's articles 4(2) and 4(3) provide a **set of environmental criteria** requiring sufficient information to show that the activity would not cause:

- a) significant adverse effects on air and water quality;
- b) significant changes in atmospheric, terrestrial or marine environments;
- c) significant changes in the distribution, abundance or productivity of populations of species of fauna or flora;
- d) further jeopardy to endangered or threatened species or populations of such species; or
- e) degradation of, or substantial risk to, areas of special biological, scientific, historic, aesthetic or wilderness significance.¹⁶
- f) significant adverse effects on global or regional climate or weather patterns.¹⁷

CRAMRA's Article 4(4) further sets forth **technological criteria** that must be available: i) the existence of technological capacity to i) **monitor key environmental parameters** to identify adverse effects, ii) **provide early warning of such adverse effects** to enable a timely modification of operating procedures, and iii) respond effectively to accidents.¹⁸

5) Based on the precautionary principle and decision-rules and criteria described above, the

¹³ For more information, see Kirkham, N, Gjerde, K.M., and Wilson, A M.W. (2020) "Deep-sea mining: policy options to preserve the last frontier. lessons from Antarctica's mineral resource convention" Marine Policy Volume 115, May 2020, 103859; <https://doi.org/10.1016/j.marpol.2020.103859>

¹⁴ CRAMRA article 4(1).

¹⁵ Ibid

¹⁶ Ibid art 4(2).

¹⁷ Ibid art 4(3).

¹⁸ CRAMRA's article 4(4) provides: (4) No Antarctic mineral resource activity shall take place until it is judged that: f) technology and procedures are available to provide for safe operations and compliance with paragraphs 2 and 3 above; g) There exists the capacity to monitor key environmental parameters and ecosystem components so as to identify any adverse effects of such activity and to provide for the modification of operating procedures as may be necessary in the light of the results of monitoring or increased knowledge of the Antarctic environment or dependent or associated ecosystems; and h) there exists the capacity to respond effectively to accidents, particularly those with potential environmental effects.

draft Regulations and applicable standards should specify the criteria and decision principles the Commission must apply when reviewing the EIS and other relevant documents and base its recommendations and decisions upon.

In addition, the draft Regulations and applicable standards should explicitly require the Commission to not recommend approval of an application if it does not meet the specified criteria or information is insufficient, inadequate or uncertain to enable an informed judgment; and require detailed reasons for recommending approval or rejection of any document.

IUCN supports the submissions of experts in DOSI, the Code Project and DSCC. IUCN refers the ISA Secretariat, Commission, Council, Assembly Members and other readers to their more elaborate and specific comments on the Draft Standards and Guidelines.

Specific Comments

Page	Line	Comment
1	30	Add two new bullets: <ul style="list-style-type: none"> ● Standard or a guideline setting environmental objectives, indicators and thresholds for the ISA; ● Standard or a guideline in relation to stakeholder consultation;
1	40-49	<p>III. Principles and Objectives: This list should reflect the obligations in UNCLOS (articles 145 and 192) and not a reinterpretation of them; should also reflect the principles (once they are finalized in the regulations), not just an arbitrary listing.</p> <p>The current list should correctly state the UNCLOS obligations to read:</p> <ol style="list-style-type: none"> 1) protect and preserve the marine environment; 2) prevention, reduction and control of pollution and other hazards to the marine environment 3) prevention of interference with the ecological balance of the marine environment 4) the protection and conservation of the natural resources of the Area and 5) the prevention of damage to the flora and fauna of the marine environment. <p>UNCLOS Article 147 is also relevant, which requires that Activities in the Area shall be carried out with reasonable regard for other activities in the marine environment.</p> <p>The trigger for applying the precautionary principle should reflect the text applied in the UN Fish Stocks Agreement Article 6:</p> <p>6.1 States shall apply the precautionary approach widely to [...] in order to protect the living marine resources and preserve the marine</p>

		<p>environment.</p> <p>2. States shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.</p>
3	95 -125	<p>Scoping Report: The section on the Scoping Report should include specific provisions for public comment and independent expert review, and more explicit text on the content and process for submission and review of the Scoping Report.</p> <p>As noted, many of these provisions should be in the draft regulations.</p>
4	155-	<p>E. Mitigation.</p> <p>155. 15. Subsequent to the identification of impacts and their significance, the applicant or 155 Contractor shall identify and evaluate ALL appropriate measures NECESSARY to avoid AND PREVENT POTENTIAL or minimise predicted SERIOUS harmful effects AND MINIMIZE HARMFUL EFFECTS.</p>
4	158	<p>158 16. The applicant or Contractor shall apply the mitigation hierarchy (with mitigation responses working through a sequence of avoid/prevent through minimize SERIOUS HARMFUL EFFECTS, to 159 restore/rehabilitate, to offset), when evaluating mitigation measures.</p> <p>The applicant or</p> <p>160 Contractor shall include examination of alternatives to establish the most ENVIRONMENTALLY SOUND APPROACHES THAT ARE technically and 161 economically feasible AND safe, and environmentally sound approaches for achieving the 162 ENVIRONMENTAL project objectives.</p>
4	164-169	<p>164. F. Reporting.</p> <p>The language in para 17 needs further elaboration, either in the Standards or in the draft regulations and the EIA template should be mandatory.</p> <p>Para 17 should provide at minimum for the following elements:</p> <p>17. The EIS sets out :</p> <p>I) the REGIONAL AND project-SPECIFIC ENVIRONMENTAL parameters and how environmental assessment has been undertaken, including POTENTIAL AND predicted impacts of the project and CUMULATIVE EFFECTS FROM OTHER ACTIVITIES AND/OR ENVIRONMENTAL CHANGE,</p> <p>II) proposed measures for AVOIDING/PREVENTING SERIOUS HARMFUL EFFECTS AND MINIMIZING OTHER HARMFUL EFFECTS, mitigation,</p>

		<p>III) significance of residual effects AND HOW THESE HAVE BEEN ADDRESSED,</p> <p>IV) uncertainties that affect the predictions and how THESE HAVE BEEN ADDRESSED AND WILL CONTINUE TO BE ADDRESSED TO AVOID AND PREVENT SERIOUS HARMFUL EFFECTS to address these, as well as concerns raised by consultation and how they have been addressed.</p> <p>V) DESCRIPTION OF CONSULTATIONS UNDERTAKEN AS WELL AS HOW COMMENTS RECEIVED HAVE BEEN TAKEN INTO ACCOUNT (OR NOT)</p>
5	170-172	<p>G. Review</p> <p>“18. The processing, review and consideration of the EIS is governed by the Exploitation Regulations (Part II, Sections 2 and 3).”</p> <p><i>The content in the Exploitation Regulations Part II, Section 2 and 3 needs to further elaborated before this Standard can be approved as the current text is inadequate.</i></p> <p><i>This provision should set forth the standards for the review based on CRAMRA Article IV, including whether.</i></p> <p>1) the EIS was prepared in accordance with regulation 47 and the relevant standards and guidelines, including being based on sufficient environmental baseline data and information adequate to allow prior assessment of, and informed judgments about, the possible environmental effects of the planned activities;</p> <p>2) the predicted environmental impacts can meet the relevant environmental goals and objectives and would not cause:</p> <ul style="list-style-type: none"> a) significant adverse effects on air and water quality; b) significant changes in atmospheric, terrestrial or marine environments; c) significant changes in the distribution, abundance or productivity of populations of species of fauna or flora; d) further jeopardy to endangered or threatened species or populations of such species; or e) degradation of, or substantial risk to, areas of special biological, scientific, historic, aesthetic or wilderness significance. f) significant adverse effects on global or regional climate or weather patterns <p>3) the applicant has demonstrated the required monitoring capabilities, including i) the capacity to monitor key environmental parameters and ecosystem components to identify adverse effects during activities in the Area, in line with the REMP, Regional monitoring plan and standards for</p>

		the EMMP ii) provide early warning of such adverse effects to enable a timely modification of operating procedures, and iii) respond effectively to accidents.
5	173- 175	<p>173 H. Decision-making. As with the standards for review, the text needs to set out more than the decision -making process is governed by the Exploitation Regulations (Regulations 15 and 16). It should explicitly require the Commission to reject and not approve an application if it does not find (as required in CRAMRA’s Article 4) that:</p> <p>1) an EIS was prepared in accordance with regulation 47 and the relevant standards and guidelines, including being based on sufficient environmental baseline data and information adequate to allow prior assessment of, and informed judgments about, the possible environmental effects of the planned activities;</p> <p>2) the predicted environmental impacts can meet the relevant environmental goals and objectives and would not cause:</p> <ul style="list-style-type: none"> a) significant adverse effects on air and water quality; b) significant changes in atmospheric, terrestrial or marine environments; c) significant changes in the distribution, abundance or productivity of populations of species of fauna or flora; d) further jeopardy to endangered or threatened species or populations of such species; or e) degradation of, or substantial risk to, areas of special biological, scientific, historic, aesthetic or wilderness significance. f) significant adverse effects on global or regional climate or weather patterns <p>3) the applicant has demonstrated the required monitoring capabilities, including i) the capacity to monitor key environmental parameters and ecosystem components to identify adverse effects during activities in the Area, in line with the REMP, Regional monitoring plan and standards for the EMMP ii) provide early warning of such adverse effects to enable a timely modification of operating procedures, and iii) respond effectively to accidents.</p>
		<p>Appendix II 183 Draft Guidelines for environmental impact assessment process Comment: to ensure consistency across contractors to study and protect the marine environment, most of these “guidelines” should be incorporated into the “Standards” above.</p>

Comments should be sent by e-mail to ola@isa.org.im

IUCN COMMENTS (two of three)

<i>Document reviewed</i>	
Title of the draft being reviewed:	Draft Guidelines for the establishment of baseline environmental data (two of three)
<i>Contact information</i>	
Surname:	Gjerde/Epps
Given Name:	Kristina/Minna
Government (if applicable):	
Organization (if applicable):	IUCN
Country:	Switzerland
E-mail:	kgjerde@eip.com.pl & minna.epps@iucn.org

IUCN would like to highlight in particular the importance of:
<p>1) Establishing obligatory Standards for baseline data and information gathering rather than simply guidelines. Robust, standardized and comparable environmental baseline data and information will provide an essential foundation for robust EIAs, EIAS, EMMPs, REMPS and risk and hazard assessment. Guidelines are not sufficient to either ensure a level playing field among contractors or to achieve comparability of baseline data for cohesive or integrated analysis.</p>
<p>2) Creating an open and transparent process for the development of Standards for the Establishment of Baseline Data (and other standards). This process should feature environmental experts and observers from a full range of disciplines and interests. The process used to develop the current draft standards and guidelines does not instill confidence that safeguards for avoiding potential conflicts of interest or ensuring the involvement of a broad range of expertise, including for biodiversity and ecology of the deep and mid-water column and surface waters that may be affected by deep sea mining and shipboard processing.</p>
<p>3) Including the entirety of the potentially affected environment, including the bathypelagic, the mid-water column, and surface waters in the scope of baseline assessments. The effects of deep-sea mining cannot be understood without considering the effects on the entire water column or its many species, including commercial fish stocks as well as gelatinous zooplankton, and the connectivity amongst them.¹⁹</p>

¹⁹ See Christiansen et al, 'Potential Effects of Deep Seabed Mining on Pelagic and Benthopelagic Biota' (2020) 114(September 2018) *Marine Policy* 103442 <https://doi.org/10.1016/j.marpol.2019.02.014> ; Drazen et al, 'Midwater Ecosystems Must Be Considered When Evaluating Environmental Risks of Deep-Sea Mining' (2020) 117(30) *Proceedings of the National Academy of Sciences of the United States of America* 17455, <https://www.pnas.org/content/pnas/117/30/17455.full.pdf>)

4) Placing **mandatory requirements for the sharing of data and methods/sampling strategy on contractors** for sharing among contractors and between contractors and scientists and the public. A high degree of collaboration is essential to fully support regional environmental management.

5) Ensuring that **regional environmental assessments are a core part of any environmental baseline program**. Such regional environmental assessments (and associated REMPs) are necessary to ensure sampling and assessment of the entirety of the potentially affected environment, and to understand change. This would include a detailed sampling program for Areas of Particular Environmental Interest (APEIs) as well as the monitoring and assessment of cumulative effects, including climate change, across the region and within specific areas.

IUCN also urges that such regional environmental assessment processes (and other ISA processes) be conducted in an open manner that engages other sectors, potentially affected States and other Stakeholders in a public process of gathering and assessing the pressures, drivers and stressors, as well as the collection of socio-economic data, including ecosystem services. Such an assessment can underpin the development of a regional strategy and action plan to maintain and restore ocean health.

IUCN COMMENTS (three of three)

<i>Document reviewed</i>	
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<i>Contact information</i>	
Surname:	Gjerde/Epps
Given Name:	Kristina/Minna
Government (if applicable):	
Organization (if applicable):	IUCN
Country:	Switzerland
E-mail:	kgjerde@eip.com.pl & minna.epps@iucn.org
<i>General Comments</i>	
<p>IUCN shares the concerns noted in DOSI’s Comments on the Draft Guidelines for the Preparation of Environmental Management and Monitoring Plans, including that “in its current form this document lacks sufficient detail and clarity to allow for effective and maintained use by the contractors.”</p>	
<p>IUCN would like to highlight in particular the need for:</p>	
<p>1) explicit text calling for public stakeholder review of the EMMP (as envisaged in Draft Exploitation Regulation 11).</p>	
<p>2) clear limits and rules around when adaptive management is appropriate. As noted by DOSI, adaptive management is “unsuitable for activities that must be measured on long-term scales and for any activities that can cause serious and irreversible harm quickly.” DOSI provide specific textual suggestions on page 5 of their comments.</p> <p>See also IUCN comments on relationship between the precautionary principle and adaptive management in our comments on the Draft Standard and Guidelines for Environmental Impact Assessment Process in Section 3 above.</p>	
<p>3) defining “cumulative effects” to include other human impacts on the ocean, e.g., fishing, underwater cables, climate change, not only those from other mining impacts. Climate change is expected to be a major concern in the coming decades and may exacerbate the effects of deep-sea mining as well as other activities.²⁰ At the same time deep-sea mining could further</p>	

²⁰ Levin, L.A. Wei, C.L., Dunn D.C., et al. 2020. [Climate Change Considerations are Fundamental to Management of Deep-Sea Resource Extraction](#) Global Change Biology. 2020; 26: 4664-4678 DOI: 10.1111/gcb.15223

exacerbate the effects of climate change through of alteration of deep-ocean carbon sequestration processes. Such changes and their effects need to be explicitly accounted for to the extent possible as well as highlighted in risk and uncertainty assessments.

4) **monitoring for the environmental effects of mining**, not just the effectiveness of “mitigation” measures. Such monitoring needs to be done based on the objectives and monitoring plan set forth in a Regional Environmental Management Plan and accompanying regional monitoring plan and program to provide for a level playing field across all mining operations in the region.

5) **independent performance assessment** by competent persons to ensure no conflict of interest

6) **greater transparency around the process for drafting the standards and guidelines**, including the criteria for selecting the consultants and the related process for avoiding potential conflicts of interest.