



Secretariat,  
International Seabed Authority  
14-20 Port Royal Street  
Kingston, Jamaica  
(submitted via email to [ola@isa.org.jm](mailto:ola@isa.org.jm))

June 11, 2021

**RE: Stakeholder Consultation** - Draft guidelines for the preparation of environmental management and monitoring plans

Sir/Madam,

Below, find below our Commentary on the Draft guidelines for the preparation of environmental management and monitoring plans as issued in May 2021.

As Group Leads, we submit on behalf of the **Deep-Sea Minerals Working Group of DOSI, the Deep-Ocean Stewardship Initiative**. The list of contributors is presented at the beginning of the document. Express Consent for sharing is granted.

Sincerely,

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**TEMPLATE FOR COMMENTS**

<b><i>Document reviewed</i></b>	
<b>Title of the draft being reviewed:</b>	Draft Guidelines for the Preparation of Environmental Management and Monitoring Plans
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<b><i>General Comments</i></b>	
<p>The following persons and DOSI members commented on this document.</p> <p>Dr. Diva Amon, SpeSeas, Trinidad and Tobago; Natural History Museum, London, UK</p> <p>Dr. Patricia Esquete Garrote, University of Aveiro, Portugal</p> <p>Dr. Sabine Gollner, Royal NIOZ, The Netherlands</p> <p>Dr. Jesse van der Grient, University of Hawai’i, USA</p> <p>Dr. Jeroen Ingels, Florida State University, Coastal and Marine Laboratory, St Teresa, FL, USA</p> <p>Dr. Aline Jaeckel, University of New South Wales, Australia</p> <p>Dr. Daniel Jones, National Oceanography Centre, UK</p> <p>Prof. Lisa Levin, Scripps Institution of Oceanography, USA</p> <p>Elisabetta Menini, Duke University, USA</p> <p>Dr. Anna Metaxas, Dalhousie University, Canada</p>	

Dr. Beth Orcutt, Bigelow Laboratory for Ocean Sciences, USA

We acknowledge the efforts of the LTC and consultants to draft an initial version of these guidelines for the preparation of environmental management and monitoring plans. Drafting such a document for the remote and comparably poorly-known deep-sea ecosystems and a nascent industry is a very difficult task, but will be critical for conservation and sustainable management of the ocean.

However, in our expert opinion, in its current form this document lacks sufficient detail and clarity to allow for effective and maintained use by the contractors. Please find below our general concerns as well as a list of specific comments. We also include suggestions for improving the document, as well as supporting references.

#### **Review of EMMP**

Draft Exploitation 6 Regulation 11 requires all Environmental Plans to be subject to public review. Nevertheless, this Guideline fails to mention such a review. We strongly suggest adding stakeholder review into the Guideline.

#### **Adaptive Management**

The Guideline supports adaptive management without setting clear limits and rules around when adaptive management is appropriate and when it would lead to a watering down of environmental protection. Please find below specific suggestions for improvement.

#### **Climate Change**

Although the effects of climate change in the deep sea will be a major concern in the coming years and decades, there is no mention of it in these guidelines. A key principle should be the recognition that deep-ocean conditions are changing, that seafloor and water-column conditions will not be static over the duration of a mining operation (20-30 yrs), and that the changes are not uniform across the CCZ (and other areas targeted for mining). Environmental management and monitoring plans should incorporate this understanding into the design of environmental objectives, selection of monitoring parameters, PRZ and IRZ site selection, identification of triggers and thresholds, detection of cumulative impacts, and any remediation actions. See: Levin et al. 2020.

#### **Regional Monitoring Plan/Program**

The Monitoring Methodology (Pg. 7) does not mention a regional monitoring plan/program. All the monitoring action included refers to the project area, defined in the Exploitation Regulations as : “..., a layout of the site and the locations of impact reference zones and preservation reference zones.” In our expert opinion, a section dedicated to a regional

monitoring plan is needed. This could be added to the section on Monitoring Methodology (Pg. 7) as well as Section G. Preservation Reference Zones and Impact Reference Zones (Pg. 12).

**Process of Developing the Standards and Guidelines**

DOSI would like to see more transparency around the process for drafting the standards and guidelines. For example, a list of contributors and affiliations (both formal members of the technical working group, and formal and informal consultants) should be included. There is no information in the public domain about how contributors were selected, whether objective criteria were applied, and whether conflict of interests were declared and/or managed.

***Specific Comments***

<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	59	Cumulative effects should be defined to include not only those from other mining impacts but also other human impacts on the ocean, e.g., fishing, underwater cables, climate change.
1	62	We consider the scope of the EMMP in its current form to be too narrow. It should include details for monitoring the environmental effects of mining, not only the effectiveness of mitigation measures.
2	109-111	The following sentence is not clear and should be rephrased: “sustainable use of the oceans, seas and marine resources for sustainable development”.
3	126	Definition of “independent verification” should be given.
3	131	Please clarify how the practicality, appropriateness and proportionality will be decided.
3	154	“... as part of the Approval of a Plan of Work for Exploitation”.  In our view, this language is reflective of a permissive and non-rigorous regime. It should instead read: “...as part of the application of a Plan of Work for Exploitation”.
3	170	Please add: “ ....Included in Annex IV of the Exploitation Regulations”

4-5	214-225	<p>Clear limits to adaptive management should be included, as well-established in case law and the literature. A good starting point is Chief Justice Preston’s statement (Australia):</p> <p>“Adaptive management is a concept which is frequently invoked but less often implemented in practice. Adaptive management is not a “suck it and see”, trial and error approach to management, but it is an iterative approach involving <u>explicit testing of the achievement of defined goals</u>. Through feedback to the management process, the management procedures are changed in steps <u>until monitoring shows that the desired outcome is obtained</u>. The monitoring program has to be designed so that there is <u>statistical confidence in the outcome</u>. <u>In adaptive management the goal to be achieved is set</u>, so there is no uncertainty as to the outcome and conditions requiring adaptive management do not lack certainty, but rather they establish a regime which would permit changes, within defined parameters, to the way the outcome is achieved” (See Newcastle &amp; Hunter Valley Speleological Society Inc. v Upper Hunter Shire Council [2010] NSWLEC 48 (emphasis added).)</p> <p>We also suggest adding the following bullet point to para 26:</p> <ul style="list-style-type: none"><li>● Adaptive management should only be used if it is capable of reducing risk and uncertainty within reasonable time scales and before serious harm has occurred. It is unsuitable for activities that must be measured on long-term scales and for any activities that can cause serious and irreversible harm quickly.</li><li>● Adaptive management can only be applied where the contractor and the ISA have been able to set clear and measurable environmental goals, objectives, targets, indicators, and thresholds, and design a monitoring program that demonstrates, with statistical confidence, that the strategic objectives, targets, indicators, and thresholds are achieved.</li></ul>
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		<ul style="list-style-type: none"> <li>Environmental baselines and monitoring capacity are both essential prerequisites for adaptive management.</li> </ul> <p>See: Jaeckel and Morato, 2017.</p>
6	273-274	There is a need to start with defining environmental objectives. Before identifying parameters to monitor, environmental objectives should be defined.
6	279-281	We consider that a monitoring program should be explicitly linked to the comments on adaptive management above by stating that it will include the proposed indicators of targets as outlined.
6	288	Refers to parameters measured during baseline. Please clarify how it will be evaluated that the baseline is sufficient.
7	310-315	Here it is assumed that the collection of baseline data and its extension by validation monitoring will be sufficient to reduce uncertainty. Given the spatial domain that needs to be sampled and the lack of requirement for specific coverage and metrics, this reduction is not highly probable. What happens in those instances is not clear. We therefore suggest more elaboration and clarification.
7	312-315	We suggest rephrasing as follows: “Upon the completion of the validation monitoring period, <del>it is expected that uncertainty will be reduced,</del> the operation may enter a ‘steady state’ of compliance monitoring period that will continue to address uncertainty throughout an effective monitoring program. <del>which may be less intense.”</del> ”
8	347-370	Para 41 should require a clear sampling design, including the domain, spatial and temporal resolution and frequency, number of sampling units, desired effect size, power to detect effects etc., with appropriate justification. It should also require the collection and storage of samples (as required during exploration monitoring, for example) for future and external studies. Likewise, each parameter monitored should be linked to an environmental objective.
9	389	Monitoring should not only focus on evaluating the characteristics of the plumes but also their effects on the marine environment.

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9	398	While a self-assessment is necessary, an independent arbitration on whether monitoring objectives are met and whether there is an impact should be conducted independently also (i.e., not by the contractor).
10	448-451	These assessment criteria are poorly articulated despite being the crux of the EMMP. If the targets are SMART with appropriate indicators, then the assessment should be straight forward. A lack of robustness makes the assessment unreliable. It is essential that the applicable goals and standards here referred to are clearly explained.
10	455, 461	The trigger values should not be determined by individual contractors in individual management plans, but rather by independent scientific assessment. They should also apply across contracts.
11	496-502	We are concerned about the concepts “appropriate” and “regular” here. Both are broad and ambiguous, and therefore not useful to be used as guidelines. Please clarify.
12	518-520	Performance should be assessed by independent competent persons to ensure no conflict of interest.
16	643-651	A competent person should also be independent of the ISA to avoid conflict of interest.
16	667-668	Environmental data collected under an EMMP should also be open access to the scientific and other stakeholder communities.
16	676-679	Reports to the ISA and discussions with the ISA are written as optional. They should be requirements.
22		No example Table of Contents/Form of Performance Assessment is provided. Please rectify.
23-32		Appendix B for all resources: The origin and justification of the list of possible impacts to be monitored in PRZs and IRZs is not clear. Some are very specific, and some are very broad with no reference to standards or guidelines. How the measurements will be made is not clear either. Items that refer to sampling design are critical for

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		successful monitoring, yet they are too broadly stated to be helpful for both the Contractor and the Competent Person to assess performance. Please rectify.
23-32		Many of the recommendations in this section are worded as “the contractor should consider...”. This is somewhat confusing and difficult to provide evidence for or evaluate. The consideration should be included in some aspect of the reporting.
<p><b>References</b></p> <p>Pew Charitable Trusts, 2017. ‘Adaptive Management’ in First Report of the CODE Project – Developing ISA Environmental Regulations. pp. 23-33. Available at:  <a href="https://www.pewtrusts.org/en/research-and-analysis/white-papers/2017/07/first-report-of-the-code-project-developing-international-seabed-authority-environmental-regulations">https://www.pewtrusts.org/en/research-and-analysis/white-papers/2017/07/first-report-of-the-code-project-developing-international-seabed-authority-environmental-regulations</a></p> <p>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</p>		

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