

Report

DOSI participation in the first Council meeting of the 27th session of the ISA

Overview

The first council meeting of the 27th session of the ISA was held between 21st March and 1st April 2022 at the Jamaican Conference Centre (Kingston, Jamaica).

DOSI Minerals WG members participating in person

Jesse van der Grient (Co- lead)

Patricia Esquete (Co-lead)

Jeffrey Marlow

DOSI Actions

1. Science communication document

DOSI prepared, printed, and distributed copies of the document: *The Ongoing Science Needed for Robust Deep-Sea Mining Regulations* (Annex I). It had the purpose of raising awareness on the current knowledge gaps and need of scientific research before starting to make regulations on deep-sea mining, and to inform delegations on ongoing and future multinational research efforts and projects.

2. Science Communication Videos

Two videos were produced and shared in social media, in which Patricia Esquete and Jesse van der Grient explained the relevance of scientific knowledge for the current negotiations.

3. Interventions

DOSI actively intervened in the discussions by delivering a total of 19 statements (Annex II).

4. Textual changes proposals

DOSI submitted 19 (marked up) textual proposals on the draft Exploitation Regulation text during the first week of the Council Session (Annex III).

5. Informal meetings

Several informal meetings were held with delegations from countries (i. e., Argentina, Canada, Chile, Costa Rica, Fiji, Germany, Mexico, the Netherlands, Spain, Tonga) and observers (Deep Sea Conservation Coalition, Greenpeace, Pew Charitable Trust) to discuss the course of the negotiations, share ideas, and coordinate interventions.

6. Press Conference

Patricia Esquete participated in a Virtual Press Conference with outlets in New Zealand and the Pacific.

Site Events

Due to construction work being carried out at the Jamaica Conference Centre, it was not possible to organise side events.

The Ongoing Science Needed for Robust Deep-Sea Mining Regulations

Overview

The international science community is currently investigating the severity of expected impacts from mining, how this would affect marine life and ecosystem functioning, and how impacts may be mitigated. Any available tools, such as scientific models that can help predict impact, require baseline data. A standardized approach to monitor the environmental baseline and any mining impact is of utmost importance, as otherwise data can't be compared and may not be fit for purpose. Knowledge of the environment – what species live where, how long they live, when and how much they reproduce, what they eat and what eats them – is crucial to be able to define Strategic Environmental Goals and Objectives, define 'serious harm' and associated adverse change, as well as specific criteria to operationalize, measure and monitor it, and put in place effective regional environmental management plans, including conservation and restoration actions.

Current Large and Multinational Science Projects on Deep-Sea Mining

MiningImpact (2015-2022) (<https://miningimpact.geomar.de>)
 Coordinator: Dr. Matthias Haeckel, GEOMAR, Germany
 Partners: 38 research institutes and entities from 11 European countries and the ISA



Summary

In the first phase, the longer-term consequences of deep-sea mining operations were assessed by investigating decade-old disturbances of polymetallic nodule (PMN) habitats from benthic impact experiments in the CCZ and the DISCOL area. In the second phase an independent scientific monitoring of GSR's trials of the Patania II collector vehicle was conducted.

Take-home messages

- Deep-sea ecosystems associated with polymetallic resources support a highly diverse fauna.
- Deep-sea faunal communities show a high variability on small and large spatial scales, their connectivity over relevant scales for reference zones and for conservation remains unknown.
- Temporal variations of communities remain unknown due to the lack of long-term time series studies.
- Removal of nodules and surface seafloor reduces populations and ecosystem functions significantly.
- Even small-scale disturbances last for many decades, hence deep-sea mining operations are expected to impact the soft-seafloor abyssal ecosystem and its functions for many centuries to millennia and the nodule habitat for millions of years.
- Sediment plumes will impact considerable areas of the seafloor outside the mined area.
- Conservation areas need to match habitat characteristics of mined areas to preserve biodiversity.
- Minimizing impacts requires a network of representative preservation areas and adaptive regulations.
- Transparent and independent scientific assessment of future mining operations must be secured.



Figure 1. A sea cucumber in a polymetallic nodule field. Image courtesy of GEOMAR.

DEEP REST (2022 – 2024) (<https://deep-rest.ifremer.fr/>)
Coordinator: Jozée Sarrazin, IFREMER, France
Partners: 14 research institutes and entities from 8 European countries



Summary

DEEP REST aims to improve conservation/restoration capacities at polymetallic nodule sites and hydrothermal vents. The project will: (1) investigate and compare the biodiversity, functioning and connectivity of biological communities within and across ecosystems; (2) evaluate recovery potential and identify indicators of change; (3) test and evaluate conservation/restoration actions in terms of effectiveness and identify the governance arrangements needed for efficient actions; (4) provide scientific guidance to stakeholders and policy-makers and recommendations to support deep-sea governance, ensuring a sustainable management of resources and conservation of ecosystems.

Expected outcomes

New key results shall be used to formulate concrete management actions and policy advice. A strong engagement with stakeholders will lead to better-informed research. A strategic assessment of conservation and restoration scenarios will be carried out in a participatory manner to integrate knowledge and concerns from scientist, industry and NGO experts.

Planned Large and Multinational Science Projects

MiningImpact 3rd phase: (2023-2026/7)

Aim: Close knowledge gaps such as regional species connectivity, threshold values of serious harm, mitigation measures, and standards for baseline, monitoring, and impact assessment.

Investigations of impacts of the Patania II collector trial in the CCZ will continue and will be complemented by work in seafloor massive sulphide habitats. A key objective continues to be the transfer of independent scientific knowledge into policy recommendations for ISA's Mining Code, particularly suggestions for improved standards and guidelines, as well as European national regulations.

EU call for oceanic carbon pump (2023 – 2027) (HORIZON-CL6-2022-CLIMATE-01 -02)

An EU contribution of 15 Mio € is foreseen to fund a project that will contribute to increased understanding of the oceanic carbon cycle. This includes also quantifying the impacts of anthropogenic activities, such as deep-sea mining, fisheries, and dredging on the biological carbon pump. It will contribute to international assessments, such as the IPCC, IPBES, WOA, and CBD.

EU call for deep-sea monitoring (2023 – 2027) (HORIZON-CL4-2022-RESILIENCE-01-02)

An EU contribution of 14 Mio € is foreseen to fund a project on a monitoring and supervision system for marine mineral exploration and exploitation activities in the deep sea. This includes development of systems and technologies to continuously monitor the baseline, any impacts that arise from mining, and mitigation methods, taking into account the three-dimensional and temporal natural variability of the environment.

This information sheet was prepared by:

Sabine Gollner, Royal Netherlands Institute for
Sea Research (NIOZ)
Patricia Esquete, Universidade de Aveiro
Jesse Van der Grient
Matthias Haeckel, GEOMAR
Jozée Sarrazin, IFREMER

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Contact us: DOSIcomms@gmail.com

ANNEX II

DOSI Statement on item 11 of the agenda

Mr. President,

Since this is the first time DOSI takes the floor, we would like to congratulate you on your election.

DOSI would like to express our concerns regarding the current state of phase1 of the draft S & G.

We respectfully remind this council that, as expressed by the German delegation and Deep Sea Conservation Coalition earlier, the current state of scientific knowledge is not sufficient to determine the effectiveness of the long-term protection of the marine environment in relation to deep-sea mining. Currently, there are several international efforts that aim to increase our scientific knowledge of the ecosystems, and the potential environmental impacts of deep-sea mining. This process, however, requires more time to collect and analyse the data.

We also believe that we need standards, (that is, minimum requirements) in place for all S&G related to environmental matters, in order to guarantee that the data produced through these efforts can be directly compared and analysed.

Thank you, Mr. President.

Mr. facilitator,

At this point, DOSI would like to intervene briefly to support Germany, Spain, Costa Rica, Trinidad and Tobago, Chile, Fiji and other delegations today and yesterday, which pointed out the relevance of the environmental externalities, such biodiversity loss or ecosystem services in this conversation.

We know from a scientific point of view, as reflected by recent research articles, that the deep ocean provides numerous and key ecosystem services with high economic value, including, but no limited to:

- climate regulation (via greenhouse gas regulation, such as methane and CO2 sequestration)
- fisheries (by providing refuge, breeding and nursery habitats to commercial species)
- waste absorption (via metabolic activity of various biological organisms),
- genetic resources with a potential for pharmaceutical, industrial, and/or biomaterial benefits
- and numerous and varied cultural benefits.

In our view, these are substantial benefits for all humankind that would be jeopardized, and whose costs must not be ignored.

Thank you, Mr. facilitator.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (I).

Thank you, Madam facilitator,

DOSI appreciates the work done by the facilitator preparing the present document.

The effective application of the precautionary approach as well as the ecosystem approach, needs to be considered in a wider context. That is, in the context of cumulative impacts, including, but not limited to, climate change, and diffuse and point-source pollution. DOSI would like to express their concern about the lack of consideration for cumulative impacts in the current draft. Deep-sea mining operations will not act alone on the ocean. On the contrary, impacts from climate change and other factors are also present, ever-changing, and cumulative. We recommend that these wider impacts be incorporated into the draft regulations as such considerations are vital for fulfilling the ISA’s environmental mandate. We believe that their incorporation in DR 44 ‘General obligations’ would ensure their application to the entirety of Part IV.

We support the notion expressed by Ghana on behalf of the African Group, Costa Rica, and France today regarding the consistency with Regional Environmental Management Plans which should be added, as well as consistency with the Convention, rules, regulations and procedures, and Standards as already listed.

We support adding a section to the draft regulation concerning knowledge gaps, as expressed by Canada [and other delegations], as existing and potential knowledge gaps will play into impact analyses and assessment.

We also support Micronesia’s proposed amendment of ‘stakeholder engagement’ to ‘stakeholder participation’, which better invokes international law principles of public participation in environmental decision-making, to which states and international organizations are subject.

We further support the suggestion made by Spain and others to clearly set out the obligations of the Authority, Sponsoring States and contractors, which would contribute to clarifying the guidance warranted for these actors to operationalize said obligations.

Finally, DOSI will provide more specific comments and suggestions in other Regulations about adding text regarding uncertainty and management of knowledge gaps, which we look forward to raising later in the week

Thank you, Madam facilitator.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (II).

Intervention (on DR46bis)

Madam Facilitator,

Due to the existing scientific knowledge gaps and their relevance in the matters being discussed, DOSI has the following suggestion on DR46bis:

We propose adding a point (e) to paragraph 2 with the text: clearly identify where scientific knowledge gaps exist and define to what degree these may influence the overall impact analysis and impact assessment.

Thank you, Madam Facilitator.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (III).

Intervention (on DR47)

Thank you, madam facilitator,

We suggest that a timeframe for the preparation of an EIS should be specified in DR47 paragraph 2 regarding the preparation of an EIS.

DOSI supports the comments made by Norway with regard to the inclusion of consultation with stakeholders, and would add that this consultation should take place throughout the process, at all phases, e.g. at scoping, during EIA, and before EIS is completed. It further supports Norway’s suggestion to revise the placement of DR46bis on EIAs and DR47 considering their complementarity.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (IV).

Thank you, Madam Facilitator,

As a network of experts from across disciplines and sectors, DOSI fully, unequivocally, and enthusiastically supports the inclusion of Traditional Knowledge in these negotiations.

TK can be defined as the knowledge, innovations and practices developed from experience gained over the centuries and adapted to the local culture and environment. For the deep sea, TK is manifested in the preservation and perpetuation of connections between people, species, processes, ecosystems and seascapes. This includes an explicit approach for effective environmental management.

TK embodies cultural and spiritual values associated with the natural environment and an important and respectful interaction with Nature.

At the regional level, traditional knowledge can be applied alongside western scientific or technical knowledge in the development of guiding principles for Strategic Environmental Assessments and Regional Environmental Management Plans. For example, TK can contribute to the designation of protected areas (such as APEIs) that are critical to (i) maintain connectivity or ensure survival of key species, including those with major cultural significance for IPLCs, (ii) maintain indigenous navigation rights, (iii) recognize sacred or otherwise culturally significant areas.

DOSI has produced a policy brief on these matters and will be more than happy to share and or discuss it with anyone interested.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (V).

Thank you, Madam Facilitator,

DOSI supports the proposal of Germany on the requirement of test mining prior to the start of the exploitation phase of operations. Test mining is an opportunity to evaluate mining machinery and operations, but also, importantly, to better understand the potential impacts on the environment. The current gaps in our scientific knowledge regarding biodiversity loss, ecosystem recovery rates, and thresholds on ecosystem services, to take just a few examples, mean it is difficult to properly evaluate potential mining impacts. Without test-mining, the data upon which an application for mining will be based will largely come from predictive models and small-scale experiments - and this gives a higher degree of uncertainty to the predictions about likely impacts from mining.

We caution, however, that long-term impacts of mining, such as the re-generation of nodules, the abundance of nodule-dependent biomass, and the recovery of natural sediment habitats - among other currently unknown impacts - will not be apparent on test mining timescales.

We thus believe that test mining should be subject to EIA, EIS, and subsequent monitoring plans.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (IV).

Thank you, Madam Facilitator,

DOSI would like to support Germany and Costa Rica in their proposal regarding the inclusion of the comparison of baseline data and monitoring data to determine effects on the marine environment in DR51(a).

We also want to emphasize that cumulative impacts derived from continuing forces of global change, including climate change, should be specifically taken into account in compliance with monitoring plans. Climate change is likely to alter conditions during the period of an exploitation contract by, for example, contributing additional stressors to the ecosystem. All plans and practices including impact monitoring should take this into account and update accordingly.

We suggest adding a DR51(d) to include the following text: ‘Take into account the impact that climate change can have on conditions during the period of an exploitation contract, and ensure that all plans and practices, including impact monitoring, update accordingly.’

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (VI).

Thank you, Madam Facilitator.

DOSI would like to make an intervention on the Environmental Compensation Fund to support the suggestion made by Mexico underlining that the Fund should apply to any necessary measures to prevent, limit, remediate and compensate any damage *to the environment*. Impacts from deep sea mining will not be limited to the seafloor, but will also

impact the water column, and affect the ecosystem services provided by this part in the ocean, including, but not limited to, fisheries support, climate change regulation and other ecosystem services. A broader application of the Fund is therefore warranted.

We would like to support the Deep Sea Conservation Coalition and make a clarification on the possibility or feasibility of a restoration of the ecosystems in the deep sea. [Here, we agreed with PEW Charitable Trusts on this point.] There is no evidence that biodiversity, or ecosystems' functioning can be recovered after the impacts on the habitats that are expected from deep sea mining have occurred. We know that biological and ecological processes in the deep sea are slower than in other realms, and impact experiments have shown little recovery after decades. The very few restoration experiments that are being carried out will only yield the first results after years, maybe decades from now. Hence, not only is the feasibility of restoration actions in the deep sea in doubt, but also it is unlikely that such processes will take place in our lifetimes. It can be considered irreversible.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator's text (VII).

Madam facilitator,

Before providing specific comments, DOSI would like to request some clarifications regarding these annexes.

First of all, in line with the comments by New Zealand, we would like to ask why the template for a preparation of an EIS is included in the regulations, and not in the Standards and Guidelines, in document ([ISBA/27/C/5](#)), together with the further details regarding the EIS.

Second, if the intent of these annexes is to provide enough detail for Contractors to carry out the various components of the Plan of Work, then this needs to be fleshed out in greater detail. If the intent of this Annex is merely to provide a template with substantive instructions to follow in Standards, then that should be made clearer. Just as an example, Regarding section 4.6, several essential physical oceanographic characteristics were left out of this description.

Finally, we ask for clarification on the mandatory or recommendatory nature of the template, since, as suggested in the document, sections 1 and 2 below seem currently contradictory on this aspect

We will provide further comments in written form if appropriate.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator's text (VIII).

Dear Madam facilitator,

We would like to express our support for the comments made by Costa Rica. We believe that the inclusion of recovery rates of the marine environment to its original state is

important. Recovery rates differ between systems and should be clearly stated and acknowledged.

We further recommend to include a brief evaluation of the effectiveness of mitigation measures, not just state those measures taken to minimize them. We also recommend the inclusion of residual impacts that may occur despite mitigation. Last, the executive Summary should outline both the potential benefits and costs of the project.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (XIX).

Thank you, Madam Facilitator,

DOSI has a short intervention regarding section 3.3.1. Project Scale. We believe that along with stating the area to be physically mined, an explicit target depth range should be given here for the discharged material along with a justification of this choice as the depth of the discharge plume will influence the extent and potential magnitude of the impact of the discharge plume.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (X).

Thank you, Madam facilitator,

DOSI wants to provide the following comments to point 4:

4.1 Providing an overview of key content is useful but the Contractor should not be restricted to six bullet points if there are more findings that need to be summarized.

4.6 Seasonal and interannual oceanographic variability should be demonstrated, supported by multiple years of monitored data, as this will incorporate interannual variability. As such, recommend rewording the second sentence to “Seasonal and interannual variability are important elements to include.” Climate change projections should be included.

4.7 The oxygen minimum zone is variable, but generally occurs in midwaters, and not near the seafloor between 1000 to 200 m depth. This should be corrected and clarified in the text.

4.9 Changing climate conditions should also be mentioned. Natural hazards should include metrics of climate hazard and cumulative climate hazard (climate change/variability) in the contract area.

4.11 We recommend changing “gas and chemical emissions” to “gas and fluid emissions” as chemicals are contents of both. Effects of mining on ocean climate mitigation functions and services should be described (alteration of CO₂ uptake and sequestration and seafloor burial by the ocean; changes in nutrient cycling effects on wetland carbon uptake (shore-based operations).

4.12. If special considerations are to be given to hydrothermal vents, seeps, seamounts, and fronts or eddies, these should have a separate section and not only be addressed in a one-page summary. The presence and location of these features should be identified. Their proximity to mining activity should be stated and depicted in a map. This summary should include particulate fluxes and organic carbon accumulation and burial rates, relevant to understanding the regulating services provided by the targeted environments.

We shall submit our suggestions in a written mode.
Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (XI).

DOSI wants to support CR in the addition of a section regarding ecosystem services. For example, what is missing from the entire EIS is characterization of the global-scale regulating and supporting ecosystem services (carbon burial and sequestration, nutrient cycling). It needs to be included in its own section as these are some of the services that will be disrupted in the mining footprint and it is critical that they be quantified. Similarly, the genetic resources present in the project area are not mentioned but merit attention in the EIS.

Regarding 6.3. Sites of an archaeological or historical nature

This section should also consider other international agreements and whether any sites relating to cultural property or cultural heritage are known to occur within the potential area of impact. Additionally, please broaden to include findings of a paleontological nature.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (XII).

Madam facilitator,

Thank you,

DOSI has a comment on point 1b: “Verified by the report of independent competent persons appointed by the Authority”. We also suggest more elaboration on this point. We suggest a reference should be provided to a document elaborating on the definition of “competent persons” and a document on such a report structure.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Facilitator’s text (XIII).

Madam facilitator,

DOSI would like to comment on section 1(j) - include “Details of any restoration and remediation objectives and activities”; scientific results show evidence that restoration is not a viable option in most of the ecosystems in question, if the substrate (nodules) is removed.

As we stated previously, in our intervention on DR55: . We know that biological and ecological processes in the deep sea are slower than in other realms, and impact experiments have shown little recovery after decades. The very few restoration experiments that are being carried out will only yield the first results after years, maybe decades from now. Hence, not only is the feasibility of restoration actions in the deep sea in doubt, but also it is unlikely that such processes will take place in our lifetimes. It can be considered irreversible.

Thank you.

Intervention during the Informal Working Group on the Protection and preservation of the Marine Environment – Draft standard and guidelines for the environmental impact assessment process ISBA/27/C/4.

Thank you, Madam facilitator,

DOSI appreciates the revised text but wishes to express concerns about its current form and the procedure used to achieve this. To this end, we support the comments already made by Germany, Costa Rica, Chile, New Zealand and Mexico..

And if you will please allow us to provide some further details:

First, The document now explicitly mentions that contractors or applicants need to produce a scoping report. However, in its current form, it states what this report may include, but it does not mention what it MUST include. Furthermore, the process for the review of this scoping report still has not been outlined.

Second, the legal status of the stakeholder consultation remains unclear and should be clarified.

Third, we appreciate the inclusion of cumulative impacts in the appropriate sections of the document; however, specifications on how to assess cumulative impacts, as well as which ones to include/omit and the rationale behind this would be appreciated. Further, climate change is only touched upon in the context of identifying other international laws and instruments but is not addressed explicitly under “cumulative impacts”. As we have specified on numerous occasions last week, climate change will alter conditions during the period of an exploitation contract by, for example, contributing additional stressors to the ecosystem. All plans and practices, including impact assessment and monitoring should take this into account and update accordingly.

Fourth, Regarding the Mitigation hierarchy: we recommend that focus shall be on the first two steps of the mitigation hierarchy (avoid and minimize). We remind the council that according to scientific evidence, restoration is not a viable option.

Finally, we note that terms like “best available techniques” and “best available scientific evidence” have no clear definition, and we suggest that these points should be addressed when the Council resumes discussions on the Schedule on Use of Terms and scope; further, independent expert judgment will need to be relied upon in cases where scientific evidence is incomplete. As mentioned before, best practice guidance should be provided on how to undertake this.

DOSI will submit further textual proposals in written form.

Thank you, Madam facilitator.

Intervention during the Informal Working Group on Institutional Matters

Señoras facilitadoras,

Quiero, antes que nada, felicitarlas por elección y por su excelente trabajo y agradecer su liderazgo que sin duda traerá grandes avances en materia de asuntos institucionales

Seré muy breve: apoyamos la inclusión, en la Norma 2, parte a, de "Área y sus recursos" como patrimonio común de la humanidad, tal como lo plantean Costa Rica y la UICN. También nos gustaría reafirmar nuestros comentarios sobre la Regulación 2 (b) (ix) de que el beneficio de la humanidad en su conjunto debe ser detallado e incluir

claramente los servicios de los ecosistemas, los recursos genéticos marinos y también un mayor conocimiento científico. Esto evitaría cualquier posible interpretación errónea o la reducción de los beneficios a meramente los ingresos financieros.

Muchas Gracias

Intervention on the report of the Chair of the Legal and technical commission

Many thanks, Chair.

The Deep-Ocean Stewardship Initiative wishes to commend the LTC on their progress despite challenging global conditions.

We wish to refer to points 20-22 of the report, regarding the environmental impact statement from Nauru Ocean Resources Inc. (NORI) for its plans to carry out testing of a polymetallic nodule collector in the NORI-D contract area in the eastern Clarion-Clipperton Zone.

While DOSI appreciates the decision of the LTC to request a more substantive monitoring plan for the collector test from NORI before continuing its consideration, we would like to express significant concerns beyond this particular shortcoming. During the stakeholder's consultation carried out by NORI, DOSI submitted an extensive list of general and technical comments and criticisms, most of which were not addressed or taken up in the revised version. In our expert opinion, the revised version still has many serious deficiencies that makes it unsuitable for the purpose of an EIS.

The most glaring issue is the insufficient baseline study, with most of the environmental knowledge included considered, at best, preliminary. Even after additional information was provided by NORI, the text still states that investigations are ongoing, and much of the results are not yet available.

NORI also mentioned in their EIS that the sample size for several of their analyses was insufficient for drawing any well-founded conclusions on, amongst others, the diversity, densities or connectivity in the areas studied. This is inadequate as this baseline information is required for meaningful impact assessment. In addition, DOSI is concerned about the differences present in the environmental baseline data between the Preservation Reference Zone and the Impact Reference Zone. This will make the reference zones not adequate for monitoring potential environmental impacts. DOSI recommends that the EIS is not accepted before an appropriate reference zone is included.

Throughout the EIS, it states that there will be "no significant impacts" on various aspects of the environment. As the environmental baseline is incomplete and no test has yet been undertaken, these are currently hypotheses that need to be verified through additional sampling and analyses. In addition, while there are currently no scientifically-informed thresholds, DOSI believes it should not be the Contractors themselves setting these thresholds. Instead, we suggest that the EIS should state that there is a high level of uncertainty and provide this value or remove the statements completely.

These are just some of the overall shortcomings of NORI's EIS that prevent it being fit for purpose. There is a long list of specific, technical issues that should be resolved also. As such, we once again strongly recommend that the EIS should be withdrawn, revised and re-submitted for re-evaluation, as well as additional stakeholder consultation conducted over a sufficiently lengthy period, once the collected data have been analysed.

To conclude, we express grave concern at the process surrounding the review of the EIS and respectfully suggest that the LTC should not approve NORI's EIS until these deficiencies have been solved.

With regard to the northern Mid-Atlantic Ridge REMP, DOSI wishes to endorse the comments made by Germany, the Pew Charitable Trust, and others who have highlighted that clarity and consistency of the content development, approval, and review of REMPS via a standardized approach, and the need for an inclusive stakeholder consultation is crucial. For DOSI, the adoption of a strategy that guarantees a clear statement of environmental goals and objectives; an extensive assessment of scientific knowledge; the involvement of all stakeholders, including scientists; and that promotes accountability and transparency, are of the greatest priority for the development of comprehensive REMPS.

Thank you.

ANNEX III

Proposed textual changes

TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION: COUNCIL - PART I

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR45

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Environmental Standards shall be developed in accordance with regulation 94 and shall include, [but are not limited to](#), the following subject matters:

4. Please indicate the rationale for the proposal. [150 word limit]

The proposed change allows and recognize that the subject matter is not limited to those listed in the current draft. The inclusion of the proposed textual change allows that this list is not exhaustive and can be adaptive as necessary. For example, as exploitation activities occur, the need for different Environmental Standards may become apparent.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR46(2)(a)

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

The Authority’s environmental objectives at the ~~contractor area~~ ~~mining area~~ as reflected in the Environmental Management and Monitoring Plan;

4. Please indicate the rationale for the proposal. [150 word limit]

The proposed textual change redefines the term from mine site to contractor area as the previous one is too narrow and would not allow for the inclusion of the PRZ, and IRZ. The proposed change is broader and allows for this inclusion.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR46bis(2)(e)

3. **Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.**

The environmental impact assessment shall include:

(e) clearly identify where scientific knowledge gaps exist and define to what degree these gaps may influence to overall impact analysis and impact assessment.

4. **Please indicate the rationale for the proposal. [150 word limit]**

There are currently scientific gaps in our understanding of, but not limited to, the deep-sea environment, temporal and spatial species patterns, and connectivity. These gaps are unlikely to be filled by the collected baseline data alone. This will likely result in uncertainty against which the overall impact analyses and impact assessments need to be considered. The proposed textual change ensures that the protection and preservation of the marine environment is upheld as per the environmental mandate of the ISA.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete and send to council2022@isa.org.jm.

1. **Name(s) of Delegation(s) making the proposal:**

DOSI

2. **Please indicate the relevant provision to which the textual proposal refers.**

DR47(2)

3. **Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.**

2. An Applicant or Contractor, as the case may be, shall prepare an Environmental Impact Statement **in a timely manner after the results of the EIA have been obtained** in accordance with this regulation **and in consultation with relevant stakeholders throughout the process.**

4. Please indicate the rationale for the proposal. [150 word limit]

Ensuring that an EIS is conducted in a timely manner is critical, given the rapid rate of environmental change associated with mining activities: any associated delays would perpetuate potential damage longer than necessary.

It is also important to include stakeholders in the development of the EIA and EIS. The EIA process and the resulting EIS would benefit from multiple points of consultation from stakeholders throughout all phases of the process.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR51

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

A contractor shall, in accordance with its Environmental Management and Monitoring Plan and these regulations:

[\(d\) Take into account the impact that climate change can have on conditions during the period of an exploitation contract, and ensure that all plans and practices, including impact monitoring, update accordingly.](#)

4. Please indicate the rationale for the proposal. [150 word limit]

Contractor exploitation operations will occur over a prolonged period of time, during which climate change will likely change the conditions in which the contractor(s) need to operate. These changes should be taken into account in all plans and practices, including impact monitoring, and be updated accordingly, to ensure that the Environmental Management and Monitoring Plan and the regulations continue to be effective in the ISA mandate of environmental protection and preservation.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR52(4)

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

The Commission shall review a performance assessment report at its next available meeting, provided that the report has been circulated at least 30 Days in advance of such meeting. [If the Commission does not possess sufficient expertise amongst its members it shall consult independent experts to review the performance assessment.](#) The Secretary-General shall make public the report and the findings and recommendations resulting from the Commission’s review.

4. Please indicate the rationale for the proposal. [150 word limit]

The inclusion of the proposed text ensures that the performance assessment is reviewed by people with the relevant expertise, which may not always be present in the Commission, and may also not be held by one single person.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

1. Name(s) of Delegation(s) making the proposal:

Deep-Ocean Stewardship Initiative

2. Please indicate the relevant provision to which the textual proposal refers.

DR52(5)(c)

- 3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.**

(c) Appoint, at the cost of the Contractor, an independent competent person / [group of persons](#) to conduct the whole or part of the performance assessment and to compile a report for submission to the Secretary-General and review by the Commission.

- 4. Please indicate the rationale for the proposal. [150 word limit]**

The proposed textual changes allow for the consideration that the performance assessment is done including all relevant expertise, in case one person does not include all necessary expertise.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete.

- 1. Name(s) of Delegation(s) making the proposal:**
Deep-Ocean Stewardship Initiative
- 2. Please indicate the relevant provision to which the textual proposal refers.**
DR52(6)
- 3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.**

Where a Contractor has previously submitted two successive unsatisfactory reports and the Commission has reasonable grounds to believe that a performance assessment cannot be undertaken satisfactorily by a Contractor in accordance with the Guidelines, the Commission may procure, at the cost of the Contractor, an independent competent person / [group of persons](#) to conduct the performance assessment and to compile the report.

4. Please indicate the rationale for the proposal. [150 word limit]

The proposed textual changes allow for the consideration that the performance assessment is done including all relevant expertise, in case one person does not include all necessary expertise.

**TEMPLATE FOR SUBMISSION OF TEXTUAL PROPOSALS DURING THE 27TH SESSION:
COUNCIL - PART I**

Informal Working Group - Environment

Please fill out one form for each textual proposal which your delegation(s) wish(es) to amend, add or delete and send to council2022@isa.org.jm.

1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV Executive summary

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

(c) Anticipated impacts of the activity (physicochemical, biological, socioeconomic), [including expected recovery rates of the ecosystem to its original state](#);

4. Please indicate the rationale for the proposal. [150 word limit]

Recovery rates differ between ecosystems and should be clearly stated and acknowledged in the executive summary.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV, 3.3.1 Project scale

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

This should include an account of the area to be physically mined, [the discharge depth range](#), as well as the likely extent of any secondary impacts (e.g., sediment plumes), which will be discussed in greater detail later.

4. Please indicate the rationale for the proposal. [150 word limit]

The target depth range of the discharge plume is important as the depth of this discharge plume will influence its extent as well as the magnitude (or severity) of the plume, because, but not limited to, the dilution of the sediment concentration and the time it will be present in the water column.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 4.6 Physical oceanographic setting

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Seasonal [and interannual oceanographic variability](#) ~~are~~ [is an](#) important elements [to include, and should be measured over multiple years.](#)

4. Please indicate the rationale for the proposal. [150 word limit]

The current wording of the text suggest that seasonal variability is important, but it does not explicitly state what to do with this. This misses the importance of monitoring

such important oceanographic variability, which needs to be understood in relation to potential mining activities. Further, the proposed text now includes interannual oceanographic variability too, for the same reason as seasonal variability.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 4.7 Chemical oceanographic setting

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Provide a description of water mass characteristics at the site and above the site at various depths of the water column, including the structure and development of the oxygen minimum zone, and in particular near the sea floor (up to 200m above bottom) that includes nutrients, particle loads, temperature and dissolved gas profiles, vent-fluid characteristics if applicable, turbidity, etc.

4. Please indicate the rationale for the proposal. [150 word limit]

The original text could be interpreted in multiple ways. One way it could have been interpreted was that the focus on the 200 m above bottom was in relation to the oxygen minimum zone, which typically occur between water depths of 200 and 1000 m from the sea surface. The proposed textual changes aim to address this unclarity, with the intention that the chemical descriptions occur for the whole water column, but in particular the 200 m above seafloor.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 4.9 Natural hazards

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Provide a description of applicable potential natural hazards for the site, including volcanism, seismic activity, cyclone/hurricane trends, tsunamis, [metrics of climate hazard and cumulative climate hazard](#), etc.

4. Please indicate the rationale for the proposal. [150 word limit]

Deep-sea mining does not act alone on the ocean, but in concert with potential other stressors or hazards. Climate change will likely change the conditions in which the mining operations take place and therefore should be taken into account in the EIS.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 4.11 Greenhouse gas emissions and climate change

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in

Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Provide a description of the level of gas and ~~fluid chemical~~ emissions from both natural and anthropogenic activities in the Area.

4. Please indicate the rationale for the proposal. [150 word limit]

Both gas and fluids are chemical contents. The proposed textual change is a more appropriate terminological description of the emission characteristics.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 5.4 Biological environment

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

5.4 Descriptions of the Communities and Ecosystem Functioning ~~Biological Environment~~

Address diversity, abundance, biomass, community-level analyses, connectivity, trophic relationships, resilience, ecosystem function ~~and services~~ and temporal variability.

4. Please indicate the rationale for the proposal. [150 word limit]

The term ‘biological environment’ would refer to the environment experienced by life in the ocean according to most biologists, not life itself. The proposed change would better align with what is described in the paragraph. It is important to recognize the ecosystem services provided by the biological communities residing in the contract areas, and the proposed addition would do so.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 5.4.1 Surface

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Describe the biological ~~environment~~ **communities** from the surface to a depth of 200 meters, including **microbial**, plankton (phytoplankton and zooplankton), surface/near-surface fish such as tuna, and seabirds and marine mammals.

4. Please indicate the rationale for the proposal. [150 word limit]

The term ‘biological environment’ refers, for most biologist, not to the life itself, but to the environment experienced by life. Further, microbes are an important component of the ecosystem and should be included in the EIS.

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Informal Working Group - Environment

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 5.4.3 Benthic

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in

Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

Describe the benthic [microbial](#), invertebrate and fish communities, including infauna and demersal fish, up to an altitude of 50 meters above the sea floor.

4. Please indicate the rationale for the proposal. [150 word limit]

Microbes are an important component of the ecosystem and should be included in the EIS.

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 6.2.6 Other

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

List other uses of the project area that are not related to the above (e.g., other mineral exploration, exploitation projects, traditional navigation, [marine genetic resources](#), [global-scale regulating and supporting ecosystem services](#)).

4. Please indicate the rationale for the proposal. [150 word limit]

The entire EIS needs a characterization of the global-scale regulating and supporting ecosystem services, including (but not limited to) carbon burial and sequestration, nutrients recycling. It is another use, but could benefit from having its own section too. Last, marine genetic resources are present in the project area and merit attention.

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1. Name(s) of Delegation(s) making the proposal:

DOSI

2. Please indicate the relevant provision to which the textual proposal refers.

Annex IV 6.3 Sites of an archaeological or historical environment

3. Kindly provide the proposed amendments to the regulation or standard or guideline in the text box below, using the “track changes” function in Microsoft Word. Please only reproduce the parts of the text that are being amended or deleted.

6.3 Sites of an archaeological, ~~or~~ historical, [cultural or paleontological](#) nature

List any sites of archaeological or historical significance, [cultural property or cultural heritage, and paleontological nature](#) that are known to occur within the potential area of impact.

4. Please indicate the rationale for the proposal. [150 word limit]

The contractor areas could potentially also cover areas that are culturally or paleontologically important, and these should be considered. This may relate, for example, but not limited to, to traditional knowledge, or sites that may relate to the mid-Atlantic Slave Trade.