
Section 1.1: Document information:

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NB: As lead author, I, Amber Cobley express consent and approval to make this submission publically available.

Section 1.2: Preamble: This response is coordinated by Amber Cobley, PhD researcher studying biodiversity and policy of deep-sea mining environments with the University of Southampton and National History Museum, London, UK with Dr. Adrian Glover, Dr. Maria Baker and Dr. Jon Copley. This document is submitted to the International Seabed Authority from the Challenger Society, UK Deep-Sea Ecosystems Special Interest Group (Deep-Sea Ecosystems UK). This is a group of UK scientists that meet annually to share deep-sea science advances in a well-established UK network. The submission is based on a panel discussion event “Deep-Sea Mining, UK” at the groups AGM, 9th September 2016, University of Liverpool. Panel speakers across UK government (Foreign and Commonwealth Office, CEFAS and Government Office for Science) and industry (Soil Machine Dynamics and UK Seabed Resources LTD) presented to the UK deep-sea science community and this lead onto discussion and this subsequent submission of comments to the ISA regarding the Exploitation Regulations Zero Draft and the subsequent Environmental Regulations.

Section 2 – Recommendations - Zero Draft and future Environmental Regulations:

2.1 - Confidential Data:

2.1a - CONTEXT: The Exploitation Contract submitted under Draft Regulation 4(4) is deemed a public document, which “the Authority shall publish on its website, provided that
Confidential Information shall be redacted prior to any such publication” (Draft Regulation 46(1)). The overall mechanism and language of “Confidential Information” has not yet been fully agreed. In Schedule 1 of the “Zero Draft”, “Environmental Information” is defined as:

**Environmental Information** means any Information relating to the protection and preservation of the Marine Environment, in particular those from environmental assessment, management and monitoring programmes and includes any Information on:

(a) The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, and the interaction among these elements;

(b) Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, [regulations], plans and programmes, affecting or likely to affect the elements of the environment within the scope of subparagraph (a) above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making;

(c) The state of human health and safety, conditions of human life, cultural sites and built structures, inasmuch as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in subparagraph (b) above.  

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**Excerpt 1: Page 80 – Zero Draft ISA Exploitation Regulations, Schedule 1 – Definition of Environmental Information.**

Under Draft Regulation 46, the current definition of “Confidential Information” means information cannot be deemed Confidential (here, with regards to the environment) if it is any of the following:

(d) Is reasonably required by the Authority in connection with an Incident where disclosure is required to protect the Marine Environment and / or human health and safety;

(e) Information necessary for the formulation by the Authority of rules, regulations and procedures concerning protection and preservation of the marine environment and safety, other than proprietary equipment design data;

(f) Is Environmental Information;

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**Excerpt 2: Page 38 – Zero Draft ISA Exploitation Regulations, Part VI, Draft Regulation 46, Confidentiality of Environmental Information.**

2.1b – Recommendations:

- With regards to the definition of confidential information, the global scientific community need to be invited to workshops and open calls for review to advise on the environmental information that is compulsory for environmental impact assessments, monitoring and management plans. In particular, the scientific community should be allowed to advise on where there are situations with insufficient data to make informed decisions. These calls should be circulated openly
and broadly, not just on the ISA website, but through social media and relevant stakeholder institutions and groups such as INDEEP, DOSI and DSBS. Recommendations should be possible both through physical presence at workshops and remote (online/mail) submissions for those unable to attend. Where workshops are planned, it would be useful to link some to existing international meetings such as the Deep-Sea Biology Symposium to encourage and facilitate greater inclusivity. Care is required to make sure that the views of researchers from developing nations, as well as early career researchers with appropriate expertise, are adequately represented.

- This definition of “Confidential Information” then needs to be written into the forthcoming “Environmental Regulations” to precisely define “Environmental Information”. The current definition is open to interpretation and will produce uncertainty, where environmental information vital to preventing serious harm to the marine environment may not be available for assessment. The benefit of defining compulsory “Environmental Information” means under Draft Regulation 46(4(d-g)), it cannot be withheld from public access by contractors as “Confidential Information”, and so can be used by the wider scientific community to provide sound scientific evidence to the Authority. This partially fulfils the Contractors obligation to assist the Authority in developing and carrying out its roles and functions. The definition should list the data types considered as “Environmental Information” after a large-scale consultation with the global scientific community, but not be exclusive to those data types, in the light of adaptive management. The definition must take into consideration differences between resource types, all elements of the ecosystems, all physical factors and the fact that different data is necessary for Environmental Management Plans (EMP’s), Environmental Impact Assessments (EIA’s) and Regional EMP’s (REMP’s), and therefore a variety of experts must be consulted to ensure best-practice recommendations.

- Considerations for the definition:
  - Environmental Information is “…It includes, but is not restricted to the following quantitative and qualitative information:
  - Proposed activity levels (spatial and temporal), Extractive methods (e.g. how long will ore be stockpiled, once crushed, if at all on seabed, as reactions could cause harm ecotoxicologically), species taxonomic data for example names, informal names, geographic locality, genetic sequences, information on rarity of species, distribution, abundance, turnover and connectivity of seafloor and bathypelagic fauna, surface productivity, high resolution bathymetry, oceanographic data (e.g. currents, geochemistry...), nodule abundance, nodule size, fishing levels in area, presence of cables, previous marine scientific research in the area, particle size... (NB: this list is not exhaustive, just suggestions we hope will be greatly elaborated on through workshops and global scientific review for the Environmental Regulations).
• **Adaptive management**: Recommendations from the wider scientific community using this publically available environmental information will help the Authority make evidence-based regulatory decisions based on best-scientific-practice, which can be updated in the regulations through the adaptive management mechanisms already positively incorporated into some areas of the Zero Draft (ex. Draft Regulation 19(1)).

### Draft Regulation 19
**Review of activities under a Plan of Work for Exploitation**

1. An Exploitation Contract shall provide for a review of activities under a Plan of Work. Such a review shall be undertaken by the Secretary-General and the Contractor and shall discuss any proposed modification(s) to the Plan of Work as may be necessary or desirable in the light of any changes in circumstances that may have occurred or experience and knowledge gained by the Contractor or the Authority in the period since the commencement of the Exploitation Contract or prior review, as the case may be.

A concerning aspect of Draft regulation 19 is that if the review flags the need for modifications, it only says a discussion will be mandatory. This regulation needs to highlight the **contractors shall make mandatory modifications to the plan of work where new information shows serious adverse harm will be caused to the marine environment in light of the review and discussions with the Secretary-General.** Furthermore, with regards to the adaptive management regime in Draft Regulation 19(1)), who is responsible for the Authority gaining new knowledge? If, for example, a new, rare species or a new methodology for measuring exotoxicological effects is developed outside of ISA research, how would the researcher know to inform the ISA and how? As part of the stakeholder engagement strategy, we suggest that ISA representatives attend international conferences and generally maintain a literature review of deep-sea ecosystems and science within mining claim areas, or another mechanism developed by the ISA that achieves real-time data advancement within the Authority, and henceforth, facilitate adaptive management. We further suggest that there should be responsibility on the Sponsoring States of Contractors (see Section 2.7) to have in place these mechanisms for maintaining up-to-date environmental knowledge within their Claim Area’s and similar habitat types, and that these are submitted with their Annual Reports to help the Authority develop and carry out its functions, particularly with regards to developing regional environmental management plans and best-practice technologies and methodologies. There is further call for scientific recommendations to be published in an open access form alongside the proposed regulations, in light of the ISA’s aim of transparency in stakeholder engagement.

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### 2.2 - Appropriately Qualified Expert
2.2a - CONTEXT: The term “ Appropriately Qualified Expert” is used throughout the document and defined in Schedule 1 as:

“ Appropriately Qualified Expert(s) ” means an individual or firm with demonstrable expertise of Good Industry Practice in the relevant subject matter who is not affiliated with the Authority, an Applicant for a Plan of Work, or sponsoring State or Contractor, as the case may be.

Excerpt 4: Page 79 - Zero Draft ISA Exploitation Regulations, Schedule 1 – Definition of Appropriately

Two examples of its use environmentally are:

Draft Regulation 14 on the Terms of Exploitation Contracts:

(d) Be accompanied by a report of an Appropriately Qualified Expert verifying the extent of compliance with and suggested modifications to the Environmental Management and Monitoring Plan in accordance with the Environmental Regulations;


Section 4
Consideration of applications by the Commission

Draft Regulation 7
General

1. The Commission shall examine applications in the order in which they are received.
2. The Commission shall consider applications expeditiously and shall submit its report and recommendations to the Council at the first possible opportunity, taking into account the schedule of meetings of the Authority.
3. The Commission may, prior to issuing any recommendations to the Council under these Regulations to approve or not approve a Plan of Work, request additional information, including advice from an Appropriately Qualified Expert, on any aspect of the Plan of Work.


2.2b – Recommendations:

- Draft Regulation 7(3) (excerpt 6) should be revised to make it compulsory for the Commission to seek advice from an/some Appropriately Qualified Expert(s) with regards to:
  - The Plan of Work (Draft Regulation 4, excerpt 7 below) should also require contractors to submit their baseline surveys from the earlier prospecting and exploration phase. An Appropriately Qualified Expert should be tasked
with checking the Contractors baseline surveys from the exploration phase are complete and to defined “standards” before an Exploitation License can be granted.

- Checking the environmental aspects of the Plan of Work (see Draft Regulation 4(4b,e,g&h) excerpt 7 below) are complete and to defined “standards”. The LTC does not currently consist of a sufficient biological and conservation expertise to do this alone.

**Draft Regulation 4**

**Form of Applications and Information to accompany a Plan of Work for Exploitation**

4. An application shall also be accompanied by the following documents:\textsuperscript{10}

- A Feasibility Study prepared in accordance with Annex II to these Regulations;
- An Environmental and Social Impact Statement prepared in accordance with the Environmental Regulations;\textsuperscript{11}
- A Mining Plan prepared and based on the Feasibility Study and in accordance with Annex III to these Regulations;
- A Financing Plan prepared and based on the Feasibility Study and in accordance with Annex IV to these Regulations;
- An Emergency Response and Contingency Plan prepared in accordance with Annex V to these Regulations and the Environmental Regulations;
- A Training Plan;
- An Environmental Management and Monitoring Plan prepared in accordance with the Environmental Regulations; and
- A Closure Plan prepared in accordance with the Environmental Regulations.

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**Excerpt 7: Page 16 – Zero Draft ISA Exploitation Regulations, Part II, Section 1, Draft Regulation 3 – Requirement of Plan of Work.**

- These “standards” should be defined in the “Environmental Regulations” in detail (see 2.4a).
- This “ Appropriately Qualified Expert” definition should have a sub-definition in the Environmental Regulations for instances concerning the environment – “ Appropriately Qualified Environmental Expert”. **Careful consideration needs to be given to who can be classed as an expert.** It is positive that the fact that an expert must be impartial is already covered in Schedule 1 definition. However, the question arises who is responsible for choosing the experts? Likely the Legal and Technical Commission (LTC) (and potentially by an Environmental Commission within the LTC if this opens, see Section 2.3). Careful consideration needs to be given as to how experts are chosen. What experience do they need? What does the ISA need impartial experts on? We leave these as open-ended recommendations for the ISA to consult with stakeholders to create a database. A good starting point would be INDEEP’s database of deep-sea experts. Considerations:
- **Ex: How to rate experience?:** Numbers of papers? Number of projects as PI? Years of work in the field?
- **What expertise do they need?** One scientist cannot answer all questions. Examples of areas to consider: Baseline studies, marine protected area design, taxonomic specialisms, equipment and cruise design, environmental monitoring plans and many others. Not all experts have to be deep-sea experts, it would be useful to have a balance to bring in expertise from other environments.

- We suggest a database of “ Appropriately Qualified Environmental Experts” that Contractors and the Authority can use as quality control of environmental aspects of applications and their approval, monitoring programmes and adaptive management of the Mining Code. It is important however to remember that **one scientist cannot answer all of the questions raised.** More than one expert should be consulted in most cases, for example, for an Environmental Management Plan in the Plan of Work. Similar to the review process of academic publications.

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### 2.3 - Environmental representation in LTC

**2.3a – CONTEXT** - The Article 154 review of the functions of the ISA calls for an Economic Planning Commission to open within the LTC (Recommendation 8). UNCLOS facilitates this committee existing but it is currently not functioning. We believe the opening of this Commission would relieve the joint mandate of economic planning and environmental stewardship currently overworking the LTC. The variety of the workload in the LTC means each discipline is under-represented, in particular, biology, oceanography and environmental management. To further rectify this, we suggest an Environmental Commission to open within the LTC in the same way as the Economic Planning Commission. This would ensure there is always a significant representation of biologists and environmental specialists within the LTC and that the balance isn’t diluted by other disciplines. It could be this group that coordinates the Appropriately Qualified Experts database. Careful consideration needs to be given as to how members are chosen. For example, representatives from developing nations, variety of specialisms, representatives across resource type... And who chooses the members? Should it be done by nomination or appointment? **The Commissions then need to be built into the exploration and exploitation regulations, and the future environmental regulations.**

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### 2.4 – Future Environmental Regulations:

**2.4a – General recommendations:**

- Clarification of a timeline of development, stakeholder engagement and final publication of the Environmental Regulations needs to be released to the global stakeholder community, so that workshops and responses can be produced at reasonable time-scales. **For example, are the Environmental Regulations definitely coming out at**
Christmas 2016 and if so, what is the allotted review time so that stakeholders can plan workshops in advance to review this vital document.

- The “Standards” mentioned in Section 2.2b previously should be defined in the Environmental Regulations. This should be based on extensive, accessible and well-broadcast stakeholder engagement.

- Through adaptive management of the ISA’s Mining Code, the Environmental Regulations should also cover, and be incorporated into, parts concerning the environment in the **prospecting and exploration regulations, and vice versa.** For example, sections concerning baseline studies and environmental impact.

- The Environmental Regulations must be based on a thorough review of lessons learned from the baseline exploration phase, and include a review of the success of the baseline exploration phase in making data available to the global academic community. Advances on the current framework will be needed in the Environmental Regulations as there is minimal environmental data available publically from multiple Claim Areas.

- It should be specifically requested of contractors to include a list of fauna living within the proposed impacted and preservation regions, including links to voucher material in museums and genetic sequences where available that have been collected from the baseline exploration phase.

- Specific ideas to be included in Environmental Regulations arising from the Deep-Sea Ecosystems UK meeting:

  - Need to define specific requirements of EIA’s, EMP’s, REMP’s, based on sound scientific advice to create best-practice guidelines. Specificity here is key, right down to the level of what equipment to use for each aspect of the ecosystem to the number of box cores to be statistically robust and representative. Approaches do not need to be developed from scratch. Drawing methods from other environments, industries and existing literature is the key starting point. For example, scripts on deep-sea sampling methodologies exist, such as Glover et al (2015), Danovaro (2009) and Clark et al (2016).

  - Prescriptive methodologies will promote standardisation of information across license blocks. However, it must be noted in this part of the regulations that on a case-by-case basis, if an EIA flags up something of particular environmental interest, then an Appropriately Qualified Expert can be consulted and can request a specific area of concern or lack of data to be studied in addition to that which is specifically listed in the Plan of Work or Environmental Regulations in light of adaptive management with new discoveries and the precautionary principle. Stakeholder expertise is greatly needed here.

  - Consequently, standardised Environmental Information must be open access to achieve successful REMP’s.

2.5 - Stakeholder Participation Strategy:
15. It is proposed that the next Commission will formulate a clear methodology with regard to the elaboration of the Mining Code, timelines and an effective and efficient stakeholder participation strategy in connection with regulatory development being undertaken by Council.

Excerpt 8: Page 7 – Zero Draft ISA Exploitation Regulations, Next Steps – Stakeholder

2.5a – Recommendations:

- “Stakeholder Participation Strategy” – should include:
  - More, well-publicised workshops, coupled with ability for stakeholders to advise remotely, through calls to raise points for workshops for those who can’t attend, and calls for review of the outcomes of the workshop. This would greatly enhance transparency. Some of these workshops should be coordinated with international scientific meetings, such as INDEEP, DOSI and DSBS to bring in a wider variety of expertise and greater attendance.
  - We hope that the resultant Stakeholder Participation Strategy will be publicly available, to lead the way for “transparency within transparency”.
  - ISA reports, outputs and calls for comment should be disseminated further, than just being put on the ISA website, which isn’t very user-friendly. For example, through already established groups of stakeholders such as INDEEP, DOSI and DSBS. The ISA Twitter page is a good start, but not very often used with minimal reach, and should be utilised to a greater extent. Groups such as Deep-Sea Ecosystems UK, DSBS, INDEEP and DOSI would be happy to help disseminate the information further using their established social media platforms.

Excerpt 9: Page 18 – Zero Draft ISA Exploitation Regulations, Part II, Section 2, Draft Regulation 8, Para(4a) – Optimization of mineral extraction

2.6 - Draft Regulation 8 – Assessment of Applicants

2.6a - CONTEXT: This regulation underlines how the Commission shall determine if an Applicant can have an exploitation license based on its Application.

2.6a(i) - Draft regulation 8, Paragraph 4(a):

4. The Commission shall determine if the proposed Plan of Work:
   (a) Optimizes the recovery and extraction of the Minerals;

2.6a(ii) - Draft Regulation 8, Paragraph 4(c): “cumulative effects of exploitation activities”.

Excerpt 9: Page 18 – Zero Draft ISA Exploitation Regulations, Part II, Section 2, Draft Regulation 8, Para(4a) – Optimization of mineral extraction
2.6a(iii) - Draft Regulation 8, Paragraph 4(e): “Exploitation Activities to be carried out with reasonable regard for scientific research...”

2.6b – Recommendations:

- **Draft Regulation 8(4a):** It needs to be made clear that **economic optimization under this regulation cannot be an excuse for heightened harm to the marine environment.** This Regulation(8) either needs to refer to the Environmental Regulations for clarification or clarify within Paragraph 4.

- **Draft Regulation 8(4c):** What is meant by “cumulative effects of exploitation activities”? Cumulative within the claim area? Between same Contractors claim areas? Between same States claim areas? The region as a whole? We need to know scales of dispersal and connectivity and base spatial scales on these distances. Recovery rates will determine temporal scales. The ISA should clarify in the Environmental Regulations what scales need to be covered and to make compulsory that Contractors must in some way facilitate environmental impact assessment and monitoring programmes at regional scales, potentially to be submitted in the Applicants Plan of Work. This would facilitate the Contractors obligations to assist the ISA in the development and carrying out of its functions.

- **In Draft Regulation 8(4c), it should state that the Commission shall determine if the proposed Plan or Work evidences the completion of the environmental obligations of the Exploration Regulations to the standards defined in the Exploration and Environmental Regulations.** For example, is the EIA complete, are there knowledge gaps that need to be filled or rectified in the light of precautionary management? Has test mining taken place and did it show serious adverse effects on the marine environment? If **serious adverse harm, lack of environmental data or environmental obligations (eg. EIA) from Exploration Regulations are missing or incomplete, then the application for Plan of Work cannot be accepted.**
• **Draft Regulation 8(4e):** Guidelines for how Exploitation Activities can be carried out with reasonable regard for the Marine Environment and marine scientific research (MSR) should be highlighted in Environmental Regulations. The open access nature of data would be a starting point for Contractors showing regard to MSR. Providing spaces for scientists on industry cruises would also facilitate this and help the ISA to develop and perform its functions.

• **Draft regulation 8 (6)** - if public review has to happen BEFORE the plans of work are accepted, yet the Plans of Work do not become public (without confidential information) until AFTER they have been approved (draft regulation 13(3)) then how can public review and consultation have taken place? It needs to be made clear what will the ISA put out for public review. The main points of focus for including this in the Environmental Regulations are; well defining confidential information so vital environmental data isn’t withheld at either of these stages, and prescribing in the environmental regulations exactly what has to be put out for public review BEFORE the contract is signed.

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### 2.7 - The Obligations of Sponsoring States:

#### 2.7a - CONTEXT and Recommendations:

- With regards to Regional Environmental Management Plans, Environmental Impact Assessments, Environmental Management Plans and general stewardship of the marine environment, **it is important to remember the role of Sponsoring States.** Under UNCLOS Article 139, 153 and Article 4 of Annex III, Sponsoring States are obliged to ensure the Contractors compliance to the Convention, the ISA Rules, Regulations and Procedures and make sure they carry out the Plan of Work included in their Application for Work.

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**Excerpt 12: UNCLOS Part XI, The Area, Section 2, Principles Governing the Area, Article 139, Responsibility to ensure compliance and liability for damage, Paragraph 1.**

*States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part. The same responsibility applies to international organizations for activities in the Area carried out by such organizations.*

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**Article 153, paragraph 4**

The Authority shall exercise such control over activities in the Area as is necessary for the purpose of securing compliance with the relevant provisions of this Part and the Annexes relating thereto, and the rules, regulations and procedures of the Authority, and the plans of work approved in accordance with paragraph 3. States Parties shall assist the Authority by taking all measures necessary to ensure such compliance in accordance with article 139.

**Annex III, article 4, paragraph 4**

The sponsoring State or States shall, pursuant to article 139, have the responsibility to ensure, within their legal systems, that a contractor so sponsored shall carry out activities in the Area in conformity with the terms of its contract and its obligations under this Convention. A sponsoring State shall not, however, be liable for damage caused by any failure of a contractor sponsored by it to comply with its obligations if that State Party has adopted laws and regulations and taken administrative measures which are, within the framework of its legal system, reasonably appropriate for securing compliance by persons under its jurisdiction.
The ITLOS Advisory Opinion No. 17 (1st Feb 2011) confirmed the obligation and liability of Sponsoring States with regards to Activities in the Area:


ITLOS advisory opinion excerpt on direct obligations of Sponsoring States as an example:


- Unlike the Regulations for Prospecting and Exploration, there is less emphasis in the exploitation regulations zero draft on the responsibility of Sponsoring States for ensuring minimal harm to the marine environment. For example, Regulation 33, Decision of the Assembly of the International Seabed Authority relating to the regulations on prospecting and exploration for polymetallic sulphides in the Area:

• **Sponsoring States should sponsor environmental work in the Area**, as they are liable to assist the Authority in fulfilling its functions, of specific interest here with regards to preventing harm to the marine environment. In order to take appropriate measures to secure compliance of their Sponsored Contractors (UNCLOS 139, 154, Annex III(4(4)) and ITLOS Advisory Opinion No.17, 15th Feb 2016), they must understand the environments the State is working in and the best-practice methodologies to sample and monitor them effectively.

• In the Contractors Plan of Work and Annual Reports, Contractors currently have to include reviews of the environmental aspects of their Contracts. **Sponsoring States should also be obliged to submit in the same way as part of these reviews to prove they have “done all they can to ensure compliance” through their obligation of “due diligence” to adhere to “best environmental practices” and the “precautionary approach”**. Examples of proof could include (but not exclusively), number of projects funded by the Sponsoring States with regards to understanding/preventing harm to the marine environment, providing/funding spaces for scientists on industry cruises, sponsoring cruises to go to States claim areas, proof of sharing environmental information with other States/Contractors to facilitate regional environmental management plans etc.

• Similar provisions should be incorporated into, and elaborated upon, in the Environmental Regulations.