

TO:

Secretariat of the International Seabed Authority

14-20 Port Royal Street

Kingston, Jamaica

19 December 2017


**Comment on draft “Regulations on Exploitation of Mineral Resources in the Area”
(ISBA/23/LTC/CRP.3*)**

Dear Ladies and Gentlemen:

Attached, please find our comments on the draft exploitation regulations document ISBA/23/LTC/CRP.3*, which I submit on behalf of the scientist of the MiningImpact project.

MiningImpact is a collaborative scientific research project (<http://jpio-miningimpact.geomar.de>), consisting of 25 research institutes and universities from 11 European countries funded through the Joint Programming Initiative Healthy and Productive Seas and Oceans (www.jpi-oceans.eu). MiningImpact investigates the “Ecological Aspects of Deep-Sea Mining”.

Sincerely,



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Comments on draft “Regulations on Exploitation of Mineral Resources in the Area” (ISBA/23/LTC/CRP.3*, issued 8 August 2017)

Part A: Replies to specific questions related to the draft exploitation regulations issued in the Annex of ISBA/23/C/12 (10 August 2017)

Question 1. Role of sponsoring states

Sponsoring states should safeguard that contractors provide all environmental data needed to assess the impact of exploitation activities, such as baseline data obtained during exploration activities, data characterizing impact obtained during equipment tests and pilot mining tests, data obtained in impact and preservation reference zones, to ISA data bases or other established long-term data bases (see also below: Part B, comment II). Sponsoring states should further require their contractors to facilitate independent scientific research activities to be carried out in contract areas to allow for an independent assessment of environmental impacts connected to exploitation activities. Cooperation of sponsoring states with the Authority and the contractor (Part IV, Draft Reg. 17) should be specified (e.g., how the cooperation is organized and monitored; which obligations of contractors should be safeguarded by the sponsoring state).

Question 2. Contract area

Contractors should be required to establish a set of reference areas with appropriate replication to allow statistically sound assessments of mining impacts on the physicochemical environment and on biological communities of all size classes (including microbial communities and different life history development phases). Apart from *Impact reference zones* addressing primary effects of mining activities these should include *Plume impact reference zones* that are exposed to secondary impacts by settling plume material and *Preservation Reference Zones* that are unaffected by any mining impacts and should be monitored similarly to activities carried out during the exploration contract in order to build a long-term record of spatiotemporal variability against which the mining impacts can be assessed. The chosen reference zones should be representative of conditions found in the mining areas, e.g., in terms of bathymetry, seafloor morphology, geological and geochemical setting, seabed substrates, productivity, and biological communities. It is of particular importance that the selected monitoring strategy and impact study design allow for scientifically sound statistical analyses. Hence, the approach should be based on a detailed consideration of uncertainties and baseline variabilities as they were identified during the exploration phase and are documented in the scientific literature. The adopted methodologies should be explained in detail as part of the EIS and EMMP and should be critically reviewed by an independent scientific expert panel, both as part of the initial approval of the EIS/EMMP as well as repeatedly in connection to the contractor’s reporting duties.

Question 4. Confidential information

As suggested, an exhaustive list of non-confidential data should be specified. As a general principle, all data that are relevant for environmental matters (e.g., to assess environmental impacts, specify monitoring strategies, inform on environmental management and spatial planning) should be made

publically available – irrespective of their potential commercial relevance. Examples would be information on nodule coverage and size distribution which is important for classifying habitats, predicting of species distributions, and evaluating the appropriateness of reference areas. If open access for independent scientific evaluation cannot be provided, data should, at least, be made available for review by an independent scientific body (i.e. expert panel). Any confidential data should be made publically available *immediately* after the period covered by the exploitation contract and a respective schedule should be outlined in the closure plan.

Question 5. Administrative review mechanism

If the potential dispute relates to environmental issues it is essential to get respective expert opinion to ensure consideration of *Best Available Scientific Evidence* on the matter of dispute. This could either be achieved by (1) seeking advice from scientific experts (e.g., from an independent scientific expert panel with appropriate representation of environmental sciences disciplines, incl. ecology, taxonomy, geology, sedimentology, microbiology, geochemistry, oceanography etc.), (2) by directly including more experts as part of the panel settling the dispute, or (3) by reviewing of the suggested decision to settle the dispute by an independent scientific expert panel. The current limitation to a maximum of 2 plus 1 panel member to be selected by the Contractors and the Secretary-General (*Regulation 92*) does not seem appropriate considering the potential complexity of environmental issues. In any case, a transparent mechanism needs to be installed regarding the appointment of the panel members and the decision process. Beyond the administrative review mechanism suggested for Part XIII Settlement of disputes there are many more processes described in the *Draft Regulations* where independent scientific advice seems crucial (see also below: Part B, comment I).

Question 7. Interested persons and public comment

Nobody should be excluded from the public commenting process. To be able to assess the significance of the responses, sponsoring states may be encouraged to identify the communities relevant for submission of comments and to specify how community agreement was obtained. The ISA should consider installing a body (e.g., *petition committee*) to deal with public inquiries and concerns outside of public consultations. We also recommend that ISA should establish procedures to feed public concerns into counselling and decision-making activities.

As seabed mining in the Area is by definition of international concern, the public involvement should be addressed by the ISA as a central, international body. However, sponsoring states should be encouraged (or even be obliged) to confirm public support for engagement of the sponsoring state in deep-sea exploitation. An engagement of sponsoring states with national stakeholders / the general public prior to an application for exploitation (and a concept of how they will inform and engage with the public during the time of the exploitation activities) could be considered mandatory.

Part B: General comments on the draft exploitation regulations

I. Independent scientific expert panel

Many of the processes outlined in the *Draft Regulations* require feedback by independent experts. Hence, installing a *Scientific Inspectorate* (SI), a permanent and independent scientific expert panel, would be useful. The SI should have a clearly specified and mandatory role in a number of processes in order to inform and guide decisions by the Authority and the Secretary General. For issues of substantial environmental concern the SI should have a veto right and the power to suspend mining activities, at least temporarily until the respective issues are resolved. The SI should be fully independent of both, the contractors and the Authority. The SI should be composed of an appropriate number of members representing all relevant scientific disciplines (including – but not limited to – ecology, taxonomy of all size classes, microbiology, geochemistry, geology, sedimentology, physical oceanography) to safeguard consideration of *Best Available Scientific Evidence*. We suggest to include also engineering experts to ensure that decisions take the current *Best Available Technologies* into account. It seems most appropriate to connect this body to the Inspector (*Draft Regulations Part XI*) with a wider scope of activities and responsibilities added. A transparent mechanism has to be installed regarding the appointment of the SI members. Once installed, recruitment of new members should be led by the SI itself with appropriate involvement of the scientific community. We recommend installing of the SI already now to allow for its participation in the development of the *Regulations on Exploitation of Mineral Resources in the Area*.

The SI should have full access to data collected by the contractors (including data collected as part of exploration license activities) and the full record of their activities. In order to add transparency to decisions taken by the ISA, the SI should generally report to the public (leaving out direct reference to confidential data).

There are many instances in the *Draft Regulations* where processes and decisions are assigned to the Authority (often to the Secretary General) where independent expert advice seems crucial, particularly with regard to public acceptance and transparency, and where participation of a SI would be beneficial. Some examples are:

- Assessment of applicants (Part II, Section 1, Draft Reg. 5, specifically 3d, 4)
- Assessment of the proposed Plan of Work, and requests for modifications, especially concerning the effective protection of the marine environment (Part II, Section 3, Draft Reg. 7 (4c) & Draft Reg. 7(6))
- Assessment of requests for Plan of Work amendments and modifications (Part II, Section 3, Draft Reg. 8; Part VI, Draft Reg. 46)
- Approval of the Plan of Work (Part II, Section 3, Draft Reg. 10(1))
- Application for renewal of exploitation licenses and their approval (Part III, Draft Reg. 13)
- Assessment of the risks to the marine environment and where Best Available Scientific Evidence requires applying the precautionary approach (Part IV, Draft Reg. 17)
- Assessment of the Environmental Scoping Report, Environmental Impact Statement (EIS), EMMP and CP and comments from interested persons (Part IV, Draft Reg. 18(3), 21, 22)

- Review assessments of compliance with EMMPs and environmental management systems produced or commissioned by Contractors (Part IV, Draft Reg. 24(2))
- Approval of the closure plan (Part IV, Draft Reg. 25)
- Identification of contractor's data with relevance for the protection and preservation of the marine environment that cannot be kept confidential (Part VIII, Draft Reg. 75 1(e, f)) or that have to be submitted after the expiration of an exploitation contract (Part VIII, Draft Reg. 77(2))
- Planning of Inspector's activities, assessment of issues reported by them and issuing recommendations for actions required (Part XI, Draft Reg. 84-88)
- Initiating / assessing compliance notes and measures that need to be implemented by contractors (Part XII, Draft Reg. 89)
- Assessment of the EIS including the suggested monitoring strategy, mitigation measures, and the balance of knowledge-based prediction of impacts and application of the precautionary principle (Annex V)

II. Availability of data

Provision of environmental data collected by contractors (including subcontracted commercial and scientific institutions) in electronic form to an ISA database should be mandatory. This should include data collected as part of the exploration contract (i.e., during baseline studies, equipment tests, and test mining) as well as under the exploitation contract (i.e., during the mining operations, closure, and post-mining monitoring). For data of environmental relevance, open access should be granted. As an alternative to the ISA database, data may also be archived in open access, long-term scientific data repositories as long as metadata and reference to these data sets (i.e. permanent digital identifiers) are included in the ISA data base. Also a register of samples, where they reside, and contact information should be part of the data submitted to ISA. Finally, the data recorded by the Electronic Monitoring System (Part V, Draft Reg. 31) should be made available to improve transparency and facilitate independent scientific evaluation, e.g. of environmental impacts. Also, reference to all confidential data sets should be included in the ISA data archive with a proper set of metadata assigned (including information on date, position, depth, gear). Any confidential data should be made public *immediately* after the period covered by the exploitation contract as part of the closure plan (Part VIII, Draft Reg. 75(i)).

Where decisions depend on the availability of scientific justification (e.g., the Environmental Impact Statement, the EMMP), a verification of data provision should be mandatory. References to the requirement to provide data to the ISA are so far rather limited (e.g., Annex V, Section 4.3) and should be made in more relevant sections of the *Draft Regulations*. Examples are:

- General principles of environmental matters (Part IV, Draft Reg. 17(3)). Availability of data and effective public consultation should be mandatory
- Communication / reporting of environmental monitoring results (e.g., Part IV, Draft Reg. 23(4&5))
- Review of Environmental Performance (Part IV, Draft Reg. 24(1)) and Annual Reports (Part V, Draft Reg. 37)
- Post-closure monitoring duties (Part IV, Draft Reg. 25(6))

- Books, records, and samples (Part V, Draft Reg. 39(5))
- Environmental Scoping Report (Annex IV, p)
- Environmental Impact Statement (Annex V, Section 4, 11.4.1)

III. Science-based monitoring strategies and EMMPs

As part of the EIS, but also the EMMP, and the CP contractors need to clearly describe the monitoring strategy / study design (including layout of impact reference zones, zones to assess secondary impacts by plumes), and the statistical approach that will be adopted (including spatiotemporal replication). The chosen approach has to take into account the observed spatiotemporal variability (in baseline studies carried out during exploration – as impacts will need to be identified and quantified against this variability) and uncertainties of the applied observation methods. On which indicators will studies/monitoring activities focus and why? Which metrics and thresholds will be applied to assess severeness of the impact and to prove that preservation reference zones are not impacted? How are the different types of impacts considered in the monitoring strategy (e.g., primary impacts by seafloor exploitation machinery, secondary impacts by mining-induced plumes, cumulative impacts by recurrent exposure to impacts)? A connection to regional assessments and plans (where available) is also crucial. These requirements should be stated explicitly where relevant (e.g., Part IV, Draft Reg. 19(2c), ESR and EIA templates (Annex IV, V, VII)). Contractors should also specify the involvement of scientific experts in the development of their monitoring concepts (Annex V, section 15).

Detailed assessments should not be limited to biological ecosystem components. Also, in case of the physicochemical setting a ‘broader context’ is not sufficient as this will also shape the biological communities. Detailed information on the geological setting and seabed substrate characteristics (Annex V, Section 4.5, 4.8) in the anticipated impact areas is needed as this is crucial for assessing which habitat type is lost.

A crucial part of the assessment of impacts and the proposed mitigation measures (Annex V, Section 7) would be the scientific proof that similar habitats, communities, and biogeochemical settings (e.g., productivity) are found within or outside the mining area that will remain undisturbed and will not be impacted by mining (including monitoring strategies to verify that this is indeed the case).

Regulations should be specific about minimum requirements with respect to monitoring and reporting of monitoring results (e.g., Part IV, draft Reg. 4&5). Also, for the Post-closure monitoring, minimum requirements (duration, frequency, set of monitoring targets) should be prescribed (Part IV, Draft Reg. 25(6)). Science-based indicators (e.g., indicating that sub-lethal and cumulative effects and potential recovery have been adequately addressed) should determine the length of the post-mining monitoring period and should be revised with input from scientific experts (e.g., Scientific Inspectorate). Based on current scientific knowledge, post-closure monitoring may need to be conducted for extended periods of time to assess long-term consequences and to cover adverse effects that may only become apparent decades later. Duties for data publication and reporting on monitoring results post-closure need to be defined. Possibly a fund supporting scientific assessment of the evolution of environmental conditions post mining would be beneficial to safeguard contractors engagement after mining (and commercial interest) has come to an end (see also section VI below).

Contractors should be obliged to commit themselves to independent Marine Scientific Research and should be requested to show how they are going to facilitate research activities during exploitation activities (e.g., as part of the EIS (Annex V, section 9.2.1.4)

IV. Spatial planning and layout of mining areas and monitoring strategies

It is crucial that environmental aspects of the proposed spatial planning and layout of the mining areas (i.e. in terms of seafloor impacted by plumes, cumulative impacts (e.g., from repeated plume exposures), impacts on connectivity, etc.) are considered in the Environmental Scoping Report, EIS, EMMP, CP, and that they are supported by scientific evidence. This requirement should be mentioned in the *Exploitation Regulations*, e.g., in Part II, Section 2, Draft Reg. 4(4); Part IV, Draft Reg. 19(2); and the templates for ESR and EIS (Annex IV, V).

Environmental Impact Statements and EMMPs should make reference to strategic and environmental assessments and plans that are available at the time of application / review (Part IV, Draft Reg. 19(2)).

V. Transparency of the application, negotiation, approval and realization of exploitation projects

In order to allow for a transparent process and to facilitate involvement of stakeholders the accomplishment of key elements of exploitation projects need to be made publicly available. We suggest to publish this information in the *Seabed Mining Register* – which would extend beyond what is currently envisioned to be included. Wherever possible, the relevant documents (e.g., Scoping reports, Environmental Impact Statement, Plans of Work) should be attached for information. This should always be the case for comments received as part of consultations of stakeholders and *Interested Persons*.

Key elements to be made publically available are:

- Receipt of any Plans of Work should (including general information on the applicant, the sponsoring state, and the area concerned; Part II, Section 2, Draft Reg. 5(1d))
- Approval and signature of Plans of Work (Part III, Draft Reg. 12)
- Application for renewal of exploitation licenses and their approval (Part III, Draft Reg. 13)
- Termination of sponsorship, suspension of mining operations, new sponsorship (Part III, Draft Reg. 14)
- Receipt of Environmental Scoping Reports (Part IV, Draft Reg. 18) and revisions
- Receipt of Environmental Impact Statements, EMMP, CP and revisions (Part IV, Draft Reg. 19, 20, 21)
- Submission and review of Environmental Performance reports (Part IV, Draft Reg. 24) and Annual Reports (Part V, Draft Reg. 37)
- Receipt, suggestion of amendments, approval of the closure plan (Part IV, Draft Reg. 25)
- Notification of failure of compliance with Plan of Work and temporary suspension in production (Part V, Draft Reg. 30, 32)
- Issuing of compliance notes on the suspect of unapproved mining activities (Part V, Draft Reg. 31(3))
- Occurrence of incidents and notifiable events (Part V, Draft Reg. 41, 42)
- Revisions / modifications of the Plan of Work (Part VI, Draft Reg. 46, 47)
- Instructions issued by inspectors (Part XI, Draft Reg. 87)

- Any consultations of stakeholders / *Interested Persons*

VI. Building funds for post-mining expenses

Once mining commenced, the applicant should start building a fund appropriate to cover costs associated with decommissioning, post-mining monitoring, and closure - this can also be used to cover costs for emergency responses and the contingency plan. This could be part of the 'Performance Guarantee' (Part II, Section 3, Draft Reg. 9) and should – as the performance guarantee itself – be mandatory for any exploitation activity / approval of Plan of Work. For both, this fund and the Performance Guarantee, it should be specified what they cover, under which conditions they are released, and its financial volume. The fund could be connected to the resources the contractors 'shall maintain' for Emergency Responses and Contingency Plans (Part IV, Draft Reg. 23(8))

VII. Review of environmental performance and incremental ramping up of activities

As deep-sea mining is an entirely new field of industrial activities, exploitation activities carried out under a potentially 30-year long contract (Part III, Draft Reg. 13) should be reviewed regularly throughout the period covered by the contract. Reviewing should aim to verify the conformity with the performance indicators / metrics and the limits set by the EIS and Plan of Work – including the appropriateness of the implemented monitoring strategy. The review intervals should be prescribed and should be binding for all contractors without the option to be relaxed upon individual negotiations with the commission (Part IV, Draft Reg. 24(1)). Also, review intervals of 2-5 years, as suggested in Draft Reg. 24(1) (review after 2, 5, 10 years), seem too long: 1-2 years should be the maximum interval period, also in later phases of the exploitation activity, and a first review should take place after 6 months. Also the reviewing should not end after 10 years, but continue throughout the commercial production period. Additional reviews should be triggered by major incidents and notifiable events (Part V, Draft Reg. 40 & 41). We suggest that the review of the Environmental Performance (Part IV, Draft Reg. 24(1)) is combined with the (somewhat poorly defined) Annual report on contractor's activities (Part V, Draft Reg. 37) – and that both undergo expert assessment (e.g., of the Scientific Inspectorate, see above).

Mining should only continue if proof of operation performance and agreement of environmental impacts with specified limits can be provided by the contractor. Such formalized and regular reviews would also provide the contractor with the opportunity to prove where monitoring has provided evidence to relax restrictions initially in place with reference to the precautionary principle. We suggest that approval of mining activities (e.g., in terms of area or tonnage of extracted ore) would be gradually granted following a specific scheme common to all contractors. Review processes may also be combined with reviewing and modifying the Plan of Work (Part VI, Draft Reg. 46, 47).

VIII. Implementation of Best Available Technologies

There seems to be a lack of procedures by which contractors are required to improve their performance when technical advances in mining and monitoring equipment and procedures become available (to make better use of available deposits, reduce impact severeness and footprint, and improve quantification of environmental impacts) so that they comply with Best Available Technologies throughout the operation (e.g., regular review of state of the art of equipment and procedures by LTC or

another independent ISA body installed (e.g., Scientific Inspectorate). The requirement to use state of the art mining and monitoring equipment should be added to Part V, Draft Reg. 34.

As part of the EIS, contractors should provide detailed information on their equipment and mining tests, including information on instrument performance and environmental impacts (e.g., seafloor compaction, induced plume characteristics and footprint, etc.).