

**European Commission comments to International Seabed Authority Standards and Guidelines  
released on the 9<sup>th</sup> of April for stakeholder public consultation**

## Contents

General comments.....	1
Comments to Draft Guidelines for the establishment of baseline environmental data .....	3
Comments on Draft Guidelines for the preparation of environmental management and monitoring plans.....	5
Comments on the Draft Standard and Guidelines for environmental impact assessment process .....	7
Comments on draft Guidelines for the preparation of an environmental impact statement .....	9
Comments to Draft standard and guidelines for the preparation and implementation of emergency response and contingency plans.....	10
Comments to Draft Standard and Guidelines for the safe management and operation of mining vessels and installations.....	12
Comments to Guidelines on tools and techniques for hazard identification and risk assessments ....	14

## General comments

<b>General comments</b>
<p>The European Commission is of the view that marine minerals in the international seabed area cannot be exploited before the effects of deep-sea mining on the marine environment, biodiversity and human activities have been sufficiently researched, the risks are understood and the technologies and operational practices are able to demonstrate no serious harm to the environment, in line with the precautionary principle. Therefore strong and robust standards, guidelines and a monitoring and supervising system need to be in place, together with the Regulations on Exploitation, before any contract for exploitation is granted.</p> <p>In addition to these comments below, please refer also to the comments we submitted in October 2021.</p>
<p>It is our view that the seven draft standards and guidelines (S&amp;G) submitted for public consultation in April 2021 <b>need to be substantially improved</b> to be considered adequate in supporting the implementation of the regulations on exploitation of mineral resources in the Area. For specific explanations (and related suggestions for improvements) on the reasons why we do not consider them fit for purpose, please refer to the specific comments to each S&amp;G.</p>
<p>In terms of substance to all the seven S&amp;G we would like to point out that none of them contain thresholds to respect nor did set minimum requirements, and they read more as operation oriented directions. Establishing common thresholds to respect would allow for harmonisation of the contractors' conducts, and would ensure an efficient protection of the</p>

marine environment, as well as level playing field.

In terms of procedure, it is our view that Standards and Guidelines aiming at supporting the implementation of the regulations, should be developed after the finalisation of the regulations themselves. The current drafts S&G are developed based on the version of the draft regulations on exploitation (ISBA/25/C/WP.1) dated March 2019, which cannot be considered finalised, nor adopted.

Again, at the procedural level we see a benefit for a more inclusive approach in the drafting process of the S&G and in involving a larger number of experts in a more transparent way.

Considering that the draft “regulations are supplemented by Standards and Guidelines, as referred to in these regulations and the annexes thereto” (draft Regulation 1), we would have welcomed further (much needed) discussion on the draft Exploitation Regulations before the drafting of standards and guidelines. The draft exploitation regulations, once finalised, will set the binding environmental framework within which activities will be undertaken: without that environmental framework in place, the drafting of S&G is premature.

We are aware of the Council Decision (ISBA/25/C/37) to develop necessary standards and guidelines *before* the adoption of the regulations. However, we would like to stress that no decision has been taken on which are the necessary standards and guidelines. We argue that, in line with the draft regulations 45 we consider that environmental standards, which are to be developed as binding standards and adopted by the Council (regulations 94) as part of the requirements for the EIA/EIS and the EMMP, are of paramount importance, therefore necessary. Standards should therefore be developed on:

(a) Environmental quality objectives, including on biodiversity status, plume density and extent, and sedimentation rates; - *these in our views must contain clear binding thresholds*

(b) Monitoring procedures; and

(c) Mitigation measures

as a matter of priority.

On monitoring procedures, we consider that a monitoring system (of environmental parameters and of the implementation of the Plan of Work) should ensure independence and cannot rely only on reporting of contractors. A real time and online system must be set up for monitoring activities in the Area. This monitoring and supervising system should be controlled by the International Seabed Authority, and will require adequate capacity and resources.

We are glad to inform you that the EU Horizon Europe Programme foresees, under cluster 4 [wp-7-digital-industry-and-space horizon-2021-2022 en.pdf \(europa.eu\)](#), the following topic:

HORIZON-CL4-2022-RESILIENCE-01-02: Monitoring and supervising system for exploration and future exploitation activities in the deep sea (RIA) – pages 144, 145, with a budget of EUR 14 million.

In view of the level and the quantity of comments received by stakeholders in the first round of consultation on standards and guidelines (<https://www.isa.org.im/submissions->

[received-respect-stakeholder-consultations-standards-and-guidelines](#) ), we anticipate that the second round will produce more comments to be analysed by the Legal and Technical Commission. The standards and guidelines will then be going through a process of amendment in the substance and in the structure; we therefore would welcome a second round of consultation on the amended S&G.

We also consider the S&G as substantial in nature and not of procedural nature only, and we strongly suggest an open and transparent discussion and consideration of them by the next in person meeting of the Council. No silence procedure should generate adoption.

In addition, the harmonisation of the S&G with the draft exploitation regulations will be an issue in the future, once discussion on the draft regulations will resume and they will be adopted. We therefore recommend that the S&G be reviewed to ensure consistency with the regulations on exploitation.

Overall, we strongly advocate not rushing the drafting and finalisation processes, both of the standards and guidelines and of the draft regulations on exploitation. Our common aim is to produce a robust legal framework that would allow the development of activities in the Area, while protecting and conserving the natural resources of the Area and the flora and the fauna of the marine environment, as required by the Convention on the law of the sea.

## Comments to Draft Guidelines for the establishment of baseline environmental data

<b>Document reviewed</b>	
<b>Title of the draft being reviewed:</b>	Draft Guidelines for the establishment of baseline environmental data
<b>Contact information</b>	
<b>Surname:</b>	Broggiato
<b>Given Name:</b>	Arianna
<b>Organization (if applicable):</b>	European Commission
<b>E-mail:</b>	<a href="mailto:Arianna.Broggiato@ec.europa.eu">Arianna.Broggiato@ec.europa.eu</a>
<b>General Comments</b>	
These draft guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.	
Considering that the environmental baseline is the basis for the EIA, we would strongly suggest these guidelines to be developed as Standards, in order to ensure a harmonious development of environmental baseline by contractors.	
This document presents an extensive compilation of methodological approaches for exploring holistically the physical, chemical, biogeochemical, geological and biological components of marine ecosystems. It includes a mine of information on methodologies in	

the different fields of science concerned. At the same time the implementation of this holistic approach (considering in particular the spatial and temporal variability dimension) would require considerable amount of resources and time for undertaking sampling, the exploitation of the results and the publication of the conclusions, which could make its operationalisation challenging. It is certainly a very valuable step towards more operational guidelines, the development of which could require some additional work.

We would suggest considering the value of taking into account all available sources of data and information for any future impact assessment as a first step and subsequently establish criteria for identifying which features/parameters/variables listed in this document should be prioritised and sampled for filling the gaps and defining environmental base lines in an operationally and logistically feasible manner.

The approaches proposed for the biological component would benefit from considering the work done in some RFMOs in relation to VMEs and in particular latest developments in biogeographical mapping.

The section related to fish species would require additional work and involvement of fisheries scientists, whereas the section related to “whales, sharks and turtles” (not clear why those groups have been pooled together) mainly concerns approaches for studying cetaceans that do not seem appropriate for sharks and turtles.

As underlined in our general comments, we consider that environmental standards are standards that should be developed as a priority, such as the standards on (a) environmental quality objectives, including on biodiversity status, plume density and extent, and sedimentation rates. These Standards should set binding thresholds, which should then be taken into account in the revision of the current guidelines (hopefully standards as well) on environmental baseline.

### **Specific Comments**

<b>Page</b>	<b>Line</b>	<b>Comment</b>
4	91/93	Considering environmental characteristics limited to the Area would exclude considerations related to the water column, which would be an approach non in line with UNCLOS. We strongly request to change approach and include the water column to consider the marine environment.
4	121-123	Establishing environmental baseline should be functional to the establishment of Impact Reference Zones (IRZs) and Preservation Reference Zones (PRZs), and not the other way round.
8	205	Replace “form” with “from”
10	294	Replace “this should be done as near to use as possible to their use” with “this should be done as near as possible to their use”
38	1492	Should not add reptiles (turtles) after mammals?
40	1518	Replace “whales” by cetaceans
40	1564	Replace “regarding” with “regarded”
40	1577	Replace “indicted” by “indicated”
44	1722	replace “cam” with “can”
55	2203	Surface nekton should be included in the pelagic sampling, it has no

		similarities with the other groups
55	2203	Replace “Whales” by “cetaceans”. The approaches described here do not seem appropriate for sharks and sea turtles. Not clear why these three groups have been pooled together.
55	2204-2215	Whales, sharks, turtles are rarely observed. This section should start with a review of occurrences from other sources (e.g. collisions, distribution maps, censuses, geotag/tracking surveys, migratory routes, etc.) as it’s actually done in the guidelines for seabirds. Then, in situ monitoring could be adapted to the expected species in the area.

## Comments on Draft Guidelines for the preparation of environmental management and monitoring plans

<b>Document reviewed</b>	
<b>Title of the draft being reviewed:</b>	Draft Guidelines for the preparation of environmental management and monitoring plans
<b>Contact information</b>	
<b>Surname:</b>	Broggiato
<b>Given Name:</b>	Arianna
<b>Organization (if applicable):</b>	European Commission
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<b>General Comments</b>	
These draft guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.	
The introduction section says the guidance is not intended to be prescriptive but aims at providing sufficient direction. However, <b>it should aim also at setting the minimum requirements for environmental management and monitoring</b> . These guidelines should therefore become binding standards in order to guarantee an effective protection of the marine environment during the activities.	
The Draft Guidelines for the preparation of environmental management and monitoring plans do not refer to the links between the EMMP of the contractor and the supervising and monitoring system of the Authority. This link needs to be clearly established.	
The draft should refer to the links between APEIs and the Ecological and Biological Sensible marine Areas (EBSAs) that are identified within the framework of the UN Convention for Biological Diversity.	
Section K on additional information should be more explicit on the kind of environmental data	

collected under an EMMP.		
Appendix B on IRZs and PRZs should include EBSAs information into their checklist and provide any relevant information on potential EBSAs to CBD for its assessment.		
Please, unify the titles and references to sections (e.g. it seems that Section 3.5.1 is in reality III.E.1)		
Appendix A is missing in the pdf. It should not be an “example” but the minimum required content of an EMMP.		
Appendix A or B <b>should provide, per type of exploitation, a list of minimum and specific requirements: parameters</b> (physical, chemical, biological (habitats & species), socio-economic) <b>to be monitored; minimum frequency of monitoring; minimum resolution and request for sampling affected and non-affected (reference) areas; minimum frequency of scheduled performance assessments; etc.</b>		
The guidelines do not explain who and how will evaluate the information generated (e.g. the EMMP themselves, all the “descriptions” in the checklists) and how will be the process of acceptance/refusal/improvement of the EMMP.		
The draft should include references to the relevant provisions in Part XII of the Convention, including section 4 (Monitoring and environmental assessment).		
Requirements and determinations of the relevant Regional Environmental Management Plan (REMP) must be better integrated into the EMMP Guidelines.		
Public review by stakeholders need to be integrated into the Guidelines, as requested by regulation 11 for all environmental plans.		
<b>Specific Comments</b>		
<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	23	e.g. Please replace “xxx” with “xyz”
2	38	e.g. Please replace “abcd” with “pqrs”
3	59	Cumulative effects should consider also impacts from other human activities in the oceans, and not only mining impacts from other mining projects/ activities.
4	Table, row 5	e.g. Please delete “rstu”
7	Flow chart	e.g. Please add a box indicating that...
1	60	Please replace “arising over time or in combination with other mining impacts.” with “arising over time or in combination with other impacts from human activities, including exploration and mining, or from the repetition of similar Exploitation activities.”
3	127	“State any limitations that apply to the use of the information;” – It is unclear what is meant with this. Should be better clarified.
3	130 and	Please replace “Where practical, appropriate and proportionate, establish specific

	131	commitments to auditable and measurable outcomes and clear timeframes;” with “Establish specific commitments to auditable and measurable outcomes and clear timeframes”
3	125 - 134	Add a new bullet point: Prepared to be compliant with a real-time supervising and monitoring system controlled by the Authority.
4	208	Add a new point about the data management (or storage) system. It will be important for transparency, control and eventual data sharing.
6	273	Add a new bullet point: Compliance with the supervising and monitoring system controlled by the authority
7	304-305	Please replace “Environmental Effects, site characteristics, the techniques to be used, and available equipment and resources (including financial and human).” With Environmental Effects, site characteristics and the techniques to be used. The equipment and resources (including financial and human) must be suitable and appropriate for monitoring each potential significant environmental effect.”
7	315	Please delete “which may be less intense”
8	342	Please replace “It is expected that data collected during Exploration to support the baseline definition” with “Data collected during Exploration shall support the baseline definition”
10	448	Please delete “to the extent practicable”
12	518	Please delete “internally or”. The assessments shall be performed by independent experts.
16	667	Delete “generally”. Specify the format on which the information should be reported.
16	679	Specify the format on which the information should be reported.

## Comments on the Draft Standard and Guidelines for environmental impact assessment process

<b>Document reviewed</b>	
<b>Title of the draft being reviewed:</b>	Draft Standard and Guidelines for environmental impact assessment process
<b>Contact information</b>	
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### **General Comments**

These draft standard and guidelines need to be **substantially improved** to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.

Having two different S&G for the EIA and the EIS might create confusion to contractors. We would suggest integrating the two in only one binding Standard to guide the contractors on these steps.

As underlined in the general comments, we strongly suggest integrating these draft standard and guidelines with the adequate normative thresholds to respect. These drafts do not set minimum requirements, and they read more as operation oriented directions. In order to assess potential impacts there is a need for binding thresholds to respect, against which the Authority would then evaluate if the proposed mining project. Minimum requirements and thresholds must be established.

The Guidelines refer to biodiversity offset and restoration as minimising measures, however scientific literature (also referred to during Isa related workshops) demonstrated that restoration and biodiversity offset are not possible.

The draft guidelines should also cover (at least under “Monitoring”) the issue of unpredicted harmful effects.

Both the EIA and the EIS standards and guidelines should provide for a role of independent scientific advice.

The draft standard under ‘VI. Monitoring and EIA Audit steps’ does not mention key elements like reporting, review, performance assessment and further follow-up with the relevant ISA bodies. Such issues should be mentioned here.

As a final comment, echoing one of the general comments on inclusivity and transparency on the drafting and development of standards and guidelines, we do not find appropriate that the Draft Standard and Guidelines for environmental impact assessment process were developed with the involvement of contractors’ representatives as well, without the involvement of representatives from ISA members.

### **Specific Comments**

<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	27	Please clarify what “all EIAs” cover or simply refer to EIA.
1	29	Please align the text with the one on page 6 (line 247) - e.g. add the exploration guidelines.
1	48	Please add “fully” before “incorporated”
2	66	The flowchart should indicate to which steps the stakeholder involvement is relevant as in the chart on page 7.
2	82	The term “EIA audit” is very vague. This could be made more concrete with reference to key elements (see general comment).

4	156	What about unpredicted harmful effects? These should be covered by the monitoring step. This issue should be covered throughout the text of the draft guidelines.
32	1076	Offsetting should be separated from mitigation as it means that there are significant adverse effects that cannot be mitigated, as demonstrated by the scientific literature.
32	1107	It is important to include a requirement that the EIS is prepared by competent experts with respective qualifications.
33	1115	The language “it is recommended” is too weak. Maintaining proper records on the steps and progress of the entire EIA process and its outcomes is essential at all times.
33	1128	Idem – the review (both internal and external) need to be performed by qualified experts.
37	1287	New guidance document available - <a href="#">EIA guidance EIA report final.pdf (europa.eu)</a>

## Comments on draft Guidelines for the preparation of an environmental impact statement

<i>Document reviewed</i>	
<b>Title of the draft being reviewed:</b>	Draft Guidelines for the preparation of an environmental impact statement
<i>Contact information</i>	
<b>Surname:</b>	Broggiato
<b>Given Name:</b>	Arianna
<b>Organization (if applicable):</b>	European Commission
<b>E-mail:</b>	<a href="mailto:Arianna.Broggiato@ec.europa.eu">Arianna.Broggiato@ec.europa.eu</a>
<i>General Comments</i>	
<p>These draft guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.</p>	
<p>As commented on the EIA standard/guidelines, we would strongly recommend to merge the EIS and the EIA standard and guidelines together, possibly as a standard therefore with minimum requirements also for EIA, and to integrate them with the adequate normative thresholds to respect. Minimum requirements and thresholds must be established.</p>	

The EIS should take into consideration possible impacts of mining activities to marine protected areas, vulnerable marine ecosystems and Ecologically and Biologically Sensitive Areas (EBSAs).																					
The EIS template should have a separate heading for alternatives studied (not only in the final section of the project description).																					
The EIS should have a requirement to include a description of the no-action alternative.																					
The guidance should include a requirement for the competence/qualification of experts preparing the EIS relevant for the project subject to EIA.																					
The EIS should have a requirement to include uncertainties and gaps in knowledge.																					
Minimum requirements for EIS need to be agreed.																					
The status of the 'Review Form: EIS content' under IV is not clear and should be elaborated.																					
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## Comments to Draft standard and guidelines for the preparation and implementation of emergency response and contingency plans

<b>Document reviewed</b>	
<b>Title of the draft being reviewed:</b>	Draft standard and guidelines for the preparation and implementation of emergency response and contingency plans
<b>Contact information</b>	
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<b>General Comments</b>		
These draft standard and guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.		
The document is not specific enough in setting obligations or minimum requirements.		
There may be issues from the legal sharing of responsibilities of the overall mining operations (flag States and States of the operation) which is narrower than those concerning the approval of the emergency plans.		
The language is too vague for a guideline, for instance as regards the number and frequency of audits (e.g. 'from time to time', 'as far as possible').		
Training (called drills and exercise) is paramount; it should be clearly spelt out in the relevant titles and with clear obligations.		
Reference is made only to risk assessment while the impact assessment could be relevant in setting the number of barriers to be set to prevent accidents or acute pollution events (the text speaks about 'missing or impaired which seem to mean ineffective barriers).		
It is not clear what a collision with a 'transport vessel' is. Does it mean commercial vessel?		
Audits should be shared with all parties involved and not only with ISA.		
This document does not stress nor impose that the emergency response and contingency plans must conform to the requirements of the draft Exploitation Regulations in relation to the notification of emergency incidents to the ISA. Moreover, it does not oblige the Contractor to discontinue operations when those could contribute to the continuation of an emergency situation of an accident.		
Another missing element is the link between the emergency response and contingency plans with the Environmental Risk Assessment and the Environmental Impact Statement.		
Some terms used in the document, such as emergency preparedness assessment and defined situations of hazards and assessments do not match with terms used in the draft exploitation regulations, such as emergency response and contingency plan for example.		
Accidental events to be specially considered for high number of personnel – Should not bad weather conditions/storm be considered?		
<b>Specific Comments</b>		
<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	23	e.g. Please replace "xxx" with "xyz"
2	38	e.g. Please replace "abcd" with "pqrs"
4	Table, row 5	e.g. Please delete "rstu"
3	47-48	It is not clear to which guidelines this sentence refers to, please specify.
3	63	Hazards associated with the mining activities must also include hazards associated with human error and environmental hazards. Please specify.
4	82-84	Hazards associated with the mining activities must also include hazards

		associated with human error and environmental hazards. Please specify
5	106	It is not clear what is it meant by "project phase for the system (s)", please clarify.
5	108-109	The objectives for the emergency preparedness assessment (and its included elements) must be decided <i>a priori</i> and included in this Standard and Guidelines, and not left to the contractor only.
6	187-188	Please replace "In any case, updating needs shall be assessed periodically (at least every 5 years)" by "In any case, updating needs shall be assessed periodically (at least every 2 years)"
7	245-265	The Communication lines and notification process should include notifications to the public and to ISA Council.
8	267	The title drills should be replaced by trainings.
15	569	What is a transport vessel? Please clarify.

## Comments to Draft Standard and Guidelines for the safe management and operation of mining vessels and installations

<b>Document reviewed</b>		
<b>Title of the draft being reviewed:</b>	Draft Standard and Guidelines for the safe management and operation of mining vessels and installations	
<b>Contact information</b>		
<b>Surname:</b>	Broggiato	
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<b>E-mail:</b>	<a href="mailto:Arianna.Broggiato@ec.europa.eu">Arianna.Broggiato@ec.europa.eu</a>	
<b>General Comments</b>		
These draft standard and guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.		
Both the standards and guidelines totally remit the management of safety and operation of mining vessels and installation to the contractors.		
1	63	<p>Para 2 of Background –We suggest to consider including the part in bold to reflect the need to protect also the ‘health of coastal citizens which may be impacted by environmental pollution of biota/fish of contaminants in the water, recreational activities, respiratory problems gaseous contaminants, ..</p> <p>2. The purpose of the draft standard and guidelines for the safe management and operation of mining vessels and installations is to recommend how a contractor can achieve safe management and operation of Mining Vessels and Installations engaged in the Area by minimizing risk and ensuring the protection of: (i) human</p>

		life at sea; (ii) the Marine Environment and health in costal areas; and (iii) Mining Vessels, Installations, and property.
2	10	Annex I  2. The Contractor shall ensure that the management and operation of all Mining Vessels 11 and Installations engaged in exploitation of mineral resources in the Area are safe and comply 12 with applicable international rules, regulations and standards.  We would recommend to include that ships also have to comply the safety and environmental rules applicable in the Area as for instance specific countries may transpose international conventions into national laws in a more stringent manner which should be complied with by any ship
2	16	<del>a-</del> <i>ensures safety of personnel, protection of the marine environment, <b>protection of the health of the costal citizens in the area</b>; and safety of 17 Mining Vessels and Installations, and property; 18 19 b. includes risk analyses and emergency preparedness analyses to provide a balanced 20 and comprehensive picture of the risk associated with exploitation and ensure that 21 the risk of incidents are reduced <del>as much as reasonably practicable</del></i>  We would recommend to strengthen the wording concerning the health of coastal citizens and the ALARP principle along the lines 'the risk of incidents shall be reduced to be as low a reasonably achievable using best available technologies'
1	57	These Guidelines apply to Mining Vessels and Installations intended to be deployed for 58 exploitation in the Area. The Guidelines <i>are based</i> and are 59 recommendations for the implementation of applicable mandatory requirements in the 60 Regulations for Exploitation of mineral resources in the Area (Exploitation Regulations) and 61 should be read in conjunction with the Standard  <b>We suggest replacing the part in italics with 'on best industry practices based on state of the art technology'</b>
1	84-87	Introduction – The objective should be extended also in view of ensuring safety of other third parties navigating in the area.
2	96	<b>Compliance</b> This part will outline the approach and methods to describe and demonstrate compliance with relevant regulations, operator requirements as well as external stakeholders and their expectations  <i>We would ask to clarify the 'compliance with stakeholders expectations' Expectations are not legal requirements nor obligations. Are these formal commitments taken with local administrations, citizens association, NGOs? Such as to carry out impact assessment on the environment but also on the health of coastal citizens?</i>

3	111-128	Lines 111-128  Add Directive 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC Text with EEA relevance - <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013L0030-20210101&amp;from=EN">https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02013L0030-20210101&amp;from=EN</a>
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## Comments to Guidelines on tools and techniques for hazard identification and risk assessments

<b>Document reviewed</b>	
<b>Title of the draft being reviewed:</b>	Guidelines on tools and techniques for hazard identification and risk assessments
<b>Contact information</b>	
<b>Surname:</b>	Broggiato
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<b>General Comments</b>	
<p>These draft guidelines need to be <b>substantially improved</b> to be considered adequate to support the implementation of the draft regulations on exploitation of mineral resources in the Area, which are not finalised.</p>	
<p>The draft risk management guidelines put the emphasis on risk reduction and mitigation. It should encourage risk prevention in first place, notably with early warning systems, in line with Article 145 a) UNCLOS.</p>	
<p>It is important to underline that the risk assessment for a given project can also come to the conclusion that the risks cannot be mitigated to an acceptable level and that the project cannot be approved. The current drafting of the S&amp;G suggests that all projects would go into the exploitation phase once risks are mitigated as low as reasonable possible. "Reasonable" would be a function of the available budget for risk management which is ultimately dependent on commodity prices. Low commodity prices = high risk tolerance. As such it would not be compatible with UNCLOS Article 145, that requires that necessary measures are taken to ensure effective protection for the marine environment from harmful effects.</p>	
<p>The text does not take into account that deep-sea mining is a novel approach and that risk management cannot be based on experience gained in the commercial exploitation of the deep sea. Therefore, the call for quantitative RM (p 8), the consideration of "relevant historical data", "statistical data on the historical frequency of events" (p11) is not feasible. Instead, the guidelines should encourage collecting data that enable quantitative risk management wherever this is feasible.</p>	
<p>The draft risk management guidelines are procedural and rather generic. An important element to transform such a procedural and generic approach to an effective tool is the verification of the proposed risk management approach by an accredited certification body</p>	

(e.g. DNV or Lloyd's). **This requirement needs to be implemented by the ISA (either in these guidelines or in other acts of ISA).**

It is not clear from the Guidelines how risk management systems are to be enforced. The Authority and/or the sponsoring state should play a role in enforcement and this should be described possibly in standards.

The Guideline does not differentiate between environmental risks arising from mining activities with those from accidents

### **Specific Comments**

<b>Page</b>	<b>Line</b>	<b>Comment</b>
1	36	All uncertainties should be identified and not referred just in a generic way.
1	47	Replace "The intent of these activities is to "reduce" with "The intent of these activities is to <b>prevent</b> and "reduce
1	60	Replace "Hazard identification and risk assessment activities should reduce the risk of" with "Hazard identification and risk assessment activities should <b>prevent</b> and reduce the risk of. Moreover the qualification "as much as reasonable practicable" does not seem to be compatible with the effective protection of the marine environment required by UNCLOS (Article 145). These wording is too vague and does not constitute an adequate threshold.
3	138-141	Add the question "How can it be prevented?"
6	218	The risk criteria should be set by ISA according to a threshold, and not decided by the contractor.
8		Progression from qualitative RM to quantitative RM: the proposed to use quantitative RM for high risks. Wherever possible, RM should be quantitative.
12	410-417	Probability assessment is linked to the project period. Unless the project period is already known at the planning stage, the reference time could be the yearly likelihood.
14	478-482	(point 45): The application of the precautionary principle is not well elaborated. The text accepts uncertainties but does not include any efforts to identify the degree of scientific uncertainty. This is critical for a proportionate application of this principle. Some inspiration could be taken from COM 2000/1 COMMUNICATION FROM THE COMMISSION on the precautionary principle ( <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:l32042">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:l32042</a> ).
14	493-496	point 47: setting of "project-specific and area-specific impact thresholds commensurate with the importance of the impact". Application of ALARP would be more ambitious.
15	Figure 5	figure 5: suggest to clarify that table 5 and the text references to it refer to unmitigated risks.
15	550-560	point 56: cumulative risks: good point but management of conflicts in risk management (i.e. treatment of a given risk might increase other risks) is not addressed.
18	642-651	point 66: "Audits may be undertaken by internal parties or external competent persons". As for the general observation, the independence of the auditor is key. Some companies might have an internal independent audit culture, third party auditing or verification by an independent third party or even a classification body is preferable.