PERMANENT MISSION
OF SPAIN TO THE
INTERNATIONAL SEABED
AUTHORITY

Ref: 6.2.1

The Permanent Mission of Spain presents its compliments to the International Seabed Authority and, with reference to previous correspondence regarding the ongoing stakeholder consultation process for the development of phase 1 of the standards and guidelines related to the draft exploitation regulations, ending with the Permanent Mission's Note Nº 46 of 10 June 2021,has the honour to submit an updated version of the document detailing the comments of **Spain** and asks that the previous text sent under cover of Note Nº 46 be withdrawn..

The Permanent Mission of Spain also requests the acknowledgement of receipt of this Note and the updated document attached.

The Permanent Representation of Spain avails itself of this opportunity to renew to the International Seabed Authority the assurances of its highest consideration.

EMBAJADA DE ESPAÑA
KINGSTON

Kingston, 23 June 2021

The International Seabed Authority
14 – 20 Port Royal Street
KINGSTON

Encl.

E - MAIL

Emb.Kingston@mae.es

EMBASSY OF SPAIN
Courtleigh Corporate Centre
8, St Lucia Avenue (6th floor)
KINGSTON 5
(JAMAICA W I)
Tel -1-876-9295555
Fax -1-876-9063496

Review of the draft standards and guidelines associated with the draft regulations on exploitation of mineral resources in the Area

SPAIN

Document reviewed	
Title of the draft being reviewed:	**Draft Guidelines for the establishment of baseline environmental data**
Contact information	
Organization:	Spanish Institute of Oceanography (IEO-CSIC) (IEO-CSIC) Geological and Mining Institute of Spain (IGME – CSIC)
Country:	SPAIN
E-mail	emb.kingston@maec.es

General comments

— Overall, the document is very comprehensive. However, the following comments should be taken into account to complete the draft:

— Regarding the part of the text of Sampling and data acquisition:

- Adaptability of Sampling Strategies: This point will vary greatly depending on the case. Therefore it is necessary to define a very clear and specified preliminary approach in the initial plan presented by the contractor (EMMP - Environmental Management and Monitoring Plan) and to detail and explain adequately the entire methodology.
- Coordination and Cooperation. Contractors should share and disseminate the collected basic environmental data and metadata of those data sets. Or, at least, disseminate in data catalogs, through metadata, the existence of these basic environmental data sets. It is recommended in order to encourage the following features of the FAIR philosophy: promotes common standards for metadata and data formats, controlled vocabularies, quality flags and services for marine data management, which are widely adopted and used for improving FAIRness (Findable, Accessible, Interoperable and Reusable) [FAIRness Reference: Wilkinson, D., Dumontier, M., Aalbersberg, I.J.; Appleton, G.; et al. (15 March 2016). "The FAIR Guiding Principles for scientific data management and stewardship". Scientific Data. 3: 160018. doi:10.1038/sdata.2016.18].

— The use of the term "sediment" in the document is understood to refer indistinctly to the substrate existing on the seabed surface, be it rock or sediment. If this is not the case, it should be specified when referring to each of them.

— In addition to the proposed methods, the use of Distribution models (also called niche ecological models, species distribution models or habitat suitability models) should be explore when is possible, especially in big areas. These techniques can make many of the requirements on physical and geological variables (e.g. current models, multibeam data, backscatter data) to extrapolate (based on the samples records) the distribution of the benthic communities to the whole area, an information which could help to properly assess the potential impact of deep-sea mining (e.g. Ramiro-Sanchez et al., 2020).

— In addition, the inclusion of vulnerable marine ecosystems (VMEs) in this document **is missed**, and it should be mandatory to carry out a study for VME distribution model, in order to protect them Although there have been important advances, the United Nations and IUCN warn that a third of the key areas of biodiversity on the planet lack coverage. Particularly in the protection of international waters, which are far behind in protection objectives, and in compliance with the Convention on Biological Diversity.Ramiro-Sánchez, B., González-Irusta, J. M., Henry, L. A., Cleland, J., Yeo, I., Xavier, J. R.,... & Murton, B. (2019). Characterization and mapping of a deep-sea sponge ground on the Tropic Seamount (Northeast Tropical Atlantic): Implications for spatial management in the high seas. *Frontiers in Marine Science*, 6, 278.

Some specific comments are provided below:

Specific comments

Page	Line	Comment
6	147-152	It is suggested to add to the word "Physiographic" the term "Geomorphological elements or features" as these is the most used terminology among the benthic researchers but also geologist.
6	157	As for instance 'cable-deployed gear'.
6	Fig. 1 legend	It will be useful to add in the schema the word "visual methods" or "imagery methods" where the "units" are mentioned (*"The location and extent of these units should be defined based on a ship-based bathymetry and seafloor acoustic and optical imagery with AUVs or cable-deployed gear at a high resolution").* This is important as in the text has been highlighted and this make it clear the need to use visual/imagery methods for the location of the units
7	163	Please note that daily changes have been already documented in the benthic realm of deep-sea ecosystems too, therefore, whenever possible, and if the technology and conditions of the area allow this, it will be desirable to characterize the dynamics of the benthic systems. See for instance Davies, A. J., G. C. A. Duineveld, M. S. S. Lavaleye, M. J. N. Bergman, H. van Haren, and J. M. Roberts. 2009. Downwelling and deep-water bottom currents as food supply mechanisms to the cold-water coral *Lophelia pertusa* (Scleractinia) at the Mingulay Reef complex. Limnology and Oceanography 54:620-629.
7	172	It is important to take into account the already existent databases which have been trying to collect baseline-like data, as it is the case, for instance, of the initial evaluation for the MSFD, or database

		collected through international programs (f.e. MIDAS project was also specifically dedicated to the management of impacts produced by sea resource exploitation.)
7	195	Random replicates are not necessarily useful and representative for benthic organisms which normally do present a patched distribution
9	251	To add at the end of the paragraph "and will facilitate the analysis of the environment impact statement and assessment by the stakeholders and scientific community'.
9	251	"Sharing data between contractors and the scientific community ~~is recommended to~~ to assure that high quality data have been acquired following state-of-the-art methodology."
9	262	A paragraph should be added here (new point): The metadata for the basic and baseline environmental data sets collected for the analysis of the initial environmental status of the Area and to define the good environmental status and the sampling data sets for the follow-up and monitoring of the area will be disseminated through the sending of their respective metadata to the main international global marine environmental data catalogs.
34	1314	In relation to Section III D (Data Quality) some experts in Chemical Oceanography should indicate examples of large datasets accumulated under different international scientific programs of this topic. These data are in open access and should be used for comparison with baseline data collected for quality assurance.
34	1332	In relation to Section III D (Data Quality) some experts in Biogeochemistry should indicate examples of large datasets accumulated under different international scientific programs of this topic. These data are in open access and should be used for comparison with baseline data collected for quality assurance.
35	1349	Recommend to add new point here (K. Data Management): "Data and metadata should be provided to the ISA as outlined in section III.E. Additional guidance for specific variables can obtained from references noted above"
35	1350 - 1357	Section VI. Geological Properties should consider the geological risks and hazards associated with potential submarine mining sites. Consideration should be given not only to the mineralogy and geochemistry of the mineral resource to be exploited, but also to other aspects such as genetic processes, structure and morphology, age and spatio-temporal evolution.
35	1370	The information on the geology of the seabed must be completed by rock and sediment sampling by ROV, TV-GRAB, box-corer, dredges, boreholes...
35	1376	(hull-mounted and/or from Remotely Operated 1374 Vehicle (ROV or AUV).
35	1382	It would be advisable to add other sampling methods such as box corer dredges but always taking into account the features of the ecosystems, avoiding the use of any invasive/destructive methods when exploring VMEs.
36	1396	It would be convenient to define the range of resolution required.
36	1396	The use of equipment mounted on ROVs or AUVs allows greatly

		improving the resolution of the data obtained and facilitating its application to both mining and environmental analysis.
38	1478	In relation to Section III D (Data Quality) some experts in Geology should indicate examples of large datasets accumulated under different international scientific programs of this topic. These data are in open access and should be used for comparison with baseline data collected for quality assurance.
38	1487	It would be convenient to add(H. Data Management): "Data and metadata should be provided to the ISA as outlined in section III.E. Additional guidance for specific variables can obtained from references noted above"
40	1554	The use of visual / imagery methods need to be added in this point. Since year's images (video and pictures) have been used not only to document the communities but also as a quantitative methodology useful to address the density of the species, something impossible to gather with invasive methods as dredges. The benthic communities are patched and therefore only visual methods allow capturing the distribution patterns and densities of the species. There is abundant literature where the visual methods are use quantitatively. See papers from Gori et al. Orejas et al. Arnaud-Haond et al., Vad et al. Among others. Further many deep-sea ecosystems belong to the so called Vulnerable Marine Ecosystems (VMEs) where non-invasive methods should be prioritize for the sampling of benthic organisms as, for instance, cold-water corals or sponges.
40	1570	A paragraph should be added here specifying the methodology that have to be used (e.g. minimum number of video transects or images) when dealing with visual/imagery methods. Even if this has been specified, something should be added here too.
40	1554	Section on Benthic Sampling (page 40, starting in Line 1554): In this section, it must be highlighted that sampling of the benthic community should consider a combination of methods and not just the use of "box core", because this method may not provide a full description of the benthic community as it is generally biased to infaunal species and highly dominant epifaunal species. Non-invasive methods for obtaining underwater images (e.g. ROV, towed camera) should also be used, together with specific sampling of unidentified key-structuring epifaunal species in order to have accurate taxonomical identification. Although this is mentioned later on in the document, in the megafauna section, it should be also assessed here, and defined as a compulsory requirement.
42	1640	Maybe useful to add some examples, for instance corals, gorgonians, sponges, echinoderms.
43	1679	It is not necessary to establish preferences between video or photo if quality has minimum standards and allow to use images for the final purpose, including adequate taxa identification.
43	1701	For the deep sea is not easy to find previous information/available data for many areas.

43	1705-1709	It is suggested that transects must be designed to properly cover all potential impact area as well as its environmental variability, regardless the density of organism of each transect (which likely will be highly variable between areas).
43	1710	It is very important to highlight that some taxa that might be not alive play an important role as structuring organisms, and therefore they should not be excluded of the analyses.
43	1710-1714	Regarding the sentence *"Taxa that cannot be determined to be alive, e.g. invertebrates living in a shell or tube (most polychaete and gastropod taxa) should be listed. It may be necessary to exclude them from quantitative analyses."*, it is important to highlight that some of these undetermined organisms should be collected and identified accurately if they are key-structuring or habitat-forming species. Accurate taxonomical identification of all taxa is highly important for recording endemic taxa or key taxa in specific environments, including the deep sea, which could become extinct due to human impacts.
43	1715	The approach does not seem entirely correct, as this will means all the aspects related to the patched distribution of organisms might be overlooked or wrongly estimated. See Gori et al. 2013, Gori et al. 2011., Orejas et al. 2009.
43	1715-1716	Not necessary, the sampling unit can be defined also for instance by the resolution of environmental layers used to map the benthic habitats or in a different way, depending on the purpose. We will say that transect of images should be analysed in the better way to determine benthic species distribution across the study area (or similar).
44	1723	OFOP is one of the software widely used for image annotations and I think should be mentioned here. Further there are other software used for quantitative analysed of benthos, as it is the case of PassAge, this could also be added here
44	1729-1734	Regarding the presentation of results, it is important that rarefaction curves are included in the report in order to know if sampling has provided a good representation of most of the species occurring in the area
44	1740-1741	The results should include maps of habitats and associated communities based on the transects and also on modeling of the whole area (see general comments).
45	1780-1782	The results should include rarefaction curves for the reasons commented above.
49	1951-1958	It will be better to use at least two of them since catchability differs between trawling and image methods (e.g. McIntyre et al, 2015). Furthermore, before use trawling in very deep areas, the absence of habitat forming species must be confirmed. In the presence of dense aggregations of these kind of species (e.g. gorgonians, deep-sea sponges), image methods should be prioritized. McIntyre, F. D., Neat, F., Collie, N., Stewart, M., & Fernandes, P. G. (2015). Visual surveys can reveal rather different 'pictures' of fish densities: Comparison of trawl and video camera surveys in the Rockall Bank, NE Atlantic Ocean. Deep Sea Research Part I:

		Oceanographic Research Papers, 95, 67-74.
49	Between 1960-1961	*Suggestion for additional text:* A disadvantage of bottom trawl sampling is that survey trawls can produce adverse impacts on vulnerable benthic species and habitats such as cold-water corals and deep-sea sponges (Durán Muñoz *et al.*, 2020). Durán Muñoz, P., Sacau, M., García-Alegre, A. and Román, E. (2020) Cold-water corals and deep-sea sponges by-catch mitigation: Dealing with groundfish survey data in the management of the northwest Atlantic Ocean high seas fisheries, Marine Policy 116, 103712. 10.1016/j.marpol.2019.103712
50	1978	It should be take into account that the use of methods that can impact the epi-megabenthic communities, as it will be the case of epibenthic sledges, should be avoided in areas where VMEs are present, for instance seapen fields, cold-water coral fields, sponge fields among others
58	2343	In relation to Section III D (Data Quality), some experts in Biological communities should indicate examples of large datasets accumulated under different international scientific programs of this topic. These data are in open access and should be used for comparison with baseline data collected for quality assurance.
59	2371	A new point should be added here (L. Data Management): "Data and metadata should be provided to the ISA as outlined in section III.E. Additional guidance for specific variables can obtained from references noted above"

Document reviewed	
Title of the draft being reviewed:	**Draft Standard and Guidelines for environmental impact assessment process**
Contact Information	
Organization:	Spanish Institute of Oceanography (IEO-CSIC) (IEO-CSIC) Geological and Mining Institute of Spain (IGME – CSIC)
Country:	SPAIN
E-mail	emb.kingston@maec.es
General comments	
This document is very adequate and complete; some specific comments are included below.	
Although the document is quite complete, it must be taken into account that, as established in the "*EU Strategy on Biodiversity between now and 2030* "published in May 2020, should be advocated that minerals cannot be exploited on the international seabed before the effects of seabed mining activities on the sea, biodiversity and human activities have been sufficiently investigated, the risks are known, and it can be demonstrated that technologies and operating practices will not cause serious damage to the environment, taking into account the precautionary principle. Specific comments are included below.	

Specific comments		
Page	Line	Comment
4	139	*Suggestion for additional bullet points focus on species, habitats and ecosystem (e.g. FAO, 2009):* • the sensitivity/vulnerability of the species, habitats and/or ecosystem to the impacts, • the ability of the ecosystem to recover from impacts, • the extent to which ecosystem functions may be altered by the impact, The timing and duration of the impact relative to the period in which a species needs the habitat during one or more of its life history stages. FAO (2009) International guidelines for the management of deep-sea fisheries in the high seas. Rome: Food and Agriculture Organization of the United Nations, 73 pp.
9	365	*Suggestion for additional text at the end of the sentence: "; including exploration activities."*
10	404	The potential mechanical impacts should be also mentioned here as they will be dangerous for the VMEs and in general for any structuring benthic species. This is mentioned in the Annex 1 but it will be important to include this also in this general text.
12	471	The words "environmental components" should be replaced by "ecosystem components".
20	650	*Suggestion for additional text at the end of the sentence: "(e.g. Regional Fisheries Management Organizations and Agreements, regional seas conventions, non-*

		governmental organizations, etc.)"
23	792	In this question should consider all the dimensions of that geographic area (under the seabed and in the water column).
26	886	This order should not mean that the first criteria outweigh the last ones.
31	1072	"Collaboration between research institutions and commercial entities in assessing rehabilitation options may be helpful" should be replaced for "Collaboration between research institutions, contractors and commercial entities in assessing rehabilitation options may be helpful".
35	1209	It should be taken into account that the public consultation period is long enough, depending on the size and/or complexity of the project presented. This period of time must guarantee that the stakeholders' parties have enough time to study the project, to request more data or information, to prepare documents where they can raise reasonable queries, draw up doubts, collectively study their points of view and can present all this on the deadline settled down.

Document reviewed	
Title of the draft being reviewed:	**Draft Guidelines for the preparation of an environmental impact statement**
Contact Information	
Organization:	Spanish Institute of Oceanography (IEO-CSIC) (IEO-CSIC) Geological and Mining Institute of Spain (IGME – CSIC)
Country:	SPAIN
E-mail	emb.kingston@maec.es
General comments	
This document is very adequate although the inclusion of the Vulnerable Marine Ecosystems (VMEs) is missing in the document; some specific comments are included below.	

Specific comments

Page	Line	Comment
10	451	The inclusion of the fundamental structural role play by many benthic organisms it is missed. This should be take into account beside the functionality, foodweb studies, etc., which are fundamental, but the structural role of any benthic species, and more specifically the ones that form Vulnerable Marine Ecosystems (VMEs) should be take into consideration in the text and specifically included.
11	508	"Sites of archeological or historical significance located in or around the proposed Contract Area" it could be added: "including sites with human remains of victims of war or natural disasters"
15	661	It could be added: • Sites of archeological or historical significance located in or around the proposed area, •
22	---	IV. Appendices /Review Form: EIS Content: Modify the tables of this annex based on what was added in the previous text

Document reviewed	
Title of the draft being reviewed:	**Draft Guidelines for the preparation of an environmental impact statement**

Contact Information	
Organization:	Spanish Institute of Oceanography (IEO-CSIC) (IEO-CSIC)
Country:	SPAIN
E-mail	emb.kingston@maec.es

General comments

The document is complete although the inclusion of the Vulnerable Marine Ecosystems (VMEs) is missing in the document

Specific comments

Page	Line	Comment
4	203	"Periodicity of follow-up evaluations, parameters (Environmental Indicator) to be collected and evaluated" should be added after "standards, protocols, methodologies".
6	278	"Periodicity of data capture (samplings)," should be added after "protocols, methodologies,".
6	284	A new point within this section (nº 34): "Review and report how data management will be" would be added.
8	363	The sentence can substitute "it" for "File or database formats, backups, data management, analysis and data interpretation procedures".
8	364	The sentence '364-365' can substitute "it" for "Proposed methods of presenting the data: e.g. maps, photographs, data tables, graphs, GIS formats, images, videos, models, 3D graphics or others digital supports. Besides, including transferability to external databases (e.g., DeepData) or web services (e.g., web map service-WMS, github, wiki,); etc."
34	Item 5	In this document, epibenthic species are specifically mentioned, whereas in the previous documents (1,2, and 3) this concept was less used.

Document reviewed	
Title of the draft being reviewed:	Draft Guidelines on tools and techniques for hazard identification and risk assessments
Contact Information	
Organization:	Spanish Institute of Oceanography (IEO-CSIC) (IEO-CSIC) Geological and Mining Institute of Spain (IGME – CSIC)
Country:	SPAIN
E-mail	emb.kingston@maec.es

General comments

The document is complete although the considerations of other regional agreements and conventions should be taken into account

Specific comments

Page	Line	Comment
7	253-256	Natural hazards include geological hazards, whether natural or induced by human activity (earthquakes-tsunamis, submarine volcanism, submarine landslides and avalanches, bottom currents, erosion and turbidity, slope destabilisation, etc.).
4	181	*Suggestion for additional text at the end of the sentence:* Such as Regional Fisheries Management Organizations and Agreements, regional seas conventions, etc. with competence on fish stock management and ecosystem protection.

Document reviewed	
Title of the draft being reviewed:	*Draft Standard and Guidelines for the safe management and operation of mining vessels and installations*
Contact Information	
Organization:	General Directorate of the Merchant Marine / Spanish Maritime Administration
Country:	SPAIN
E-mail	emb.kingston@maec.es

General Comments

— "Flag state" should be understood not only as the flag of the ship responsible for issuing ship´s statutory certificates but as the State responsible for the verification and certification, if needed, of the industrial installations onboard the ship and mining operations.

— Understand that there is a new requirement to comply on top of the ISM Code. The comments below refer to the compatibility between the ships SMS systems under SOLAS and the SMS contained in the Appendixes.

— Some of the ships carrying out mining might not be undergoing international voyages and therefore the ISM will not be applicable. What type of ISM compliance is then required? We recommend not to mix the Safety Management System requested by SOLAS with this one. The one included in the Appendix is more ample so the name should be changed to "Safety, Security and Environmental Protection Management System".

Specific Comments

Page	Line	Comment
2	12	Please insert the main International legislation applicable to vessel such as SOLAS, MARPOL, STWC, MLC, etc.
2	19 to 21	*Para 3.b.* — Risks considered in the ISM cover only safety of life and protection of environmental pollution from ships. — Boundary conventions such as London Convention are not covered. — A methodology or carrying out Risk Assessments in current ISM systems is not mandatory in the ISM Code (ISM Code 1.2.2.2)
2	Lines 23 to 30	*Para 3.c and 3 d* In case no clear distinction is made with the SOLAS ISM Code and SMS required we don't understand very well how this is going to be integrated in the ISM. In case of SOLAS SMS is accepted this option should be written with the guidelines that the ISM may be used as a basis and complemented on top.
4	66 to 68	Purpose not clear. We suggest adding security as a bullet.
6	106	Please refer to the main international IMO Conventions (SOLAS, MARPOL, COLREG, LL, STWC and MLC between others.
6	109	Please add "and certificates when applicable".
7	143	Classification Rules to be in small letters.

7	146	Provides some clarity in relation to ISM, however it is not clear yet.
7	169	Add security. Line 170.
7	170	Add "the safety management system specifically requested for these type of operations should cover the interfaces between mining and marine systems"
9	184	Who is conducting the audit and how this is dealt with at the level of the Administration granting the license to mine?

Document reviewed	
Title of the draft being reviewed:	*Draft standard and guidelines for the preparation and implementation of emergency response and contingency plans*
Contact Information	
Organization:	General Directorate of the Merchant Marine / Spanish Maritime Administration
Country:	SPAIN
E-mail	emb.kingston@maec.es

General Comments
— In general, the role of the Administration granting the mining license approving the response operations is not clear. At a similar level it is not clear the role of the flag state dealing with the issue of safety management. — It seems that the requested documents and plans fall in the middle of nowhere in terms of supervision. — Responsibilities of flag states and coastal states should be better defined through the whole document.
— Information, agreement and collaboration between coastal states affected by the mining activities should be also included in the document as well as assistance in case of emergency or pollution accident.
— In case of activities in EU waters, compatibility with EU offshore directive of 2013 as amended as it refers to gas and oil only, and any incompatibility with directive of 2008 in relation to the framework for EU community action in the field of environmental policy should be considered and reference included in the Guidelines.

Specific Comments		
Page	**Line**	**Comment**
		There is no specific comments