3 June 2022

Template for the review of the draft regional environmental management plan for the Area of the northern Mid-Atlantic Ridge with a focus on polymetallic sulphide deposits

Please use the review template below when providing comments. Line and page numbers have been provided in the draft REMP. Please use these as a reference as illustrated in the table below.

TEMPLATE FOR COMMENTS

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General Comments

When preparing the general comments, stakeholders are invited to consider the following:

1) The structure and layout of the draft REMP.
2) The level of detail of the draft REMP, while avoiding being too prescriptive.
3) The goals and objectives in the draft REMP in providing for long-term, effective protection of the marine environment in the Area of the northern Mid-Atlantic Ridge.
4) The management measures and their ability to achieve the goals and objectives in the draft REMP.

1. Germany wants to reiterate that the Council has requested the LTC to develop a standardized approach for the development of REMP taking into account the "Guidance" submitted by the ISA Secretariat and the two submissions by Germany and the Netherlands, co-sponsored by Costa Rica (ISBA/26/C/6 and ISBA/26/C/7). Germany has continuously stated that all specific REMP should follow this standardized approach. Before the REMP MAR could be adopted by the Council, this standardized approach has to be developed and approved by the Council. Each future REMP should comply with the adopted approach both with respect to the minimum requirements and the procedure. Only thereby a coherent level of environmental protection across regions as well as a comparable mining regime under the different REMPs can be granted.
2. In general, the structure and layout of the draft can be considered appropriate and fit for purpose. The draft also addresses key elements required for a REMP, such Areas and Sites in need of protection, Areas and sites in need of precaution, no area-based measures and the review process. In that sense the draft is a first good framework to work with.
3. However, the draft has several deficits and flaws and would have minor governing effect in its current version. Thus, Germany is of the view, that it should not be adopted or should only be provisionally adopted as an "initial framework" as many "provisions" need to be amended or further specified. The paragraphs 4 to 6 outline the core flaws, the lacking elements of the draft and the provisions, which need further elaboration and specification.
4. There are two statements concerning the tenure rights of contractors, which need to be clarified. Paragraph 29 of the REMP states that "contractors have security of tenure over contract areas, and any management measures prescribed in the context of this plan will need to take this into account" and paragraph 40 says that "Fully respecting the rights and obligations of contractors in the existing contracts for exploration…". The statements indicate that the tenure rights of contractors have priority

over the obligation to effectively protect the marine environment pursuant to Article 145 UNCLOS. First, the question arises which tenure rights are meant: those of the exploration contracts or those of a future exploitation contract? The economic interests of the contractors need to be considered as the contract areas were awarded prior to the drafting of the REMP and were explored at considerable financial expense. When signing their exploration contracts, the contractors did so expecting that they would be allowed to mine the PMS fields they discover if they decide to proceed to the mining phase although there is clearly a legal necessity to get an approval for a plan of work for exploitation. There is a need to clarify the balance between the rights of contractors based on their exploration contracts and their obligations pursuant to Article 145 UNCLOS.

5. Several minimum contents of a REMP, as suggested by the Dutch/German submission co-sponsored by Costa Rica (ISBA/26/C/7) are not included in this draft. Some aspects are only vaguely addressed. The following list is not meant to be exclusive:

- Effects on climate change
- Identification of other legitimate uses and conflict mechanisms
- Involvement of other international bodies
- Dealing with the uncertainties taking into account the precautionary principle/approach
- Establishment of a representative net of protected areas
- Not area-based measures such as
- Definition of relevant terms such as *active, inactive and extinct hydrothermal fields* and of *hydrothermal fields, vent sites, and hydrothermal vents*
- The review section in this draft nMAR is only vaguely developed.

6. With regard to the protective measures, this draft only sets the framework for the development of the specific measures. In order to provide orientation for exploration and exploitation activities, inter alia the following aspects need to further elaborated.

- Draft REMP, para 31: Criteria for the establishment of a representative network habitats
- para 36: zoning scheme, buffer zones, monitoring requirements
- para 40: zoning scheme, buffer zones, monitoring requirements
- para 46: Sites in need of precaution: What is a “precautionary approach” of exploitation?
- para 48 passim: What thresholds what levels?

7. A further deficiency of this draft is that with regard to the implementation and review, the roles, responsibilities and competences are not clarified

8. The Dutch/German submission ISBA/26/C/6 recommends the establishment of an expert committee to develop a draft REMP in a transparent, accountable and inclusive manner that includes all relevant stakeholders. Germany suggests the establishment of such an expert committee by the Council in order to finalize the draft REMP taking into account the comments of Germany and all other stakeholders. In its current state, this draft is not sufficiently clear with regard to the specific protective measures and cannot be recommended for adoption.

9. Contractors should not develop environmental thresholds or monitoring standards themselves. These are to be developed jointly by State Parties under the ISA and agreed by the ISA Council

10. It should be clarified in which cases contractors can be obliged to carry out monitoring work outside their contract area.

11. Definitions of *active, inactive and extinct hydrothermal fields* and of *hydrothermal fields, vent sites, and hydrothermal vents* are required. A proposal for the nomenclature and definitions for the naming of hydrothermal fields and for the hydrothermal activity of vent fields is provided after the "Specific Comments" section. This proposal was developed by GEOMAR Helmholtz Centre for Ocean Research Kiel under contract to the BGR.

Specific Comments

Page	Line	Comment
7 and Annex I	132-134	The Mid Atlantic Ridge (MAR) also contains a number of oceanic core complexes where lower oceanic crust and mantle material outcrop. These areas should also be mentioned as they are specific geologic features and may therefore provide specific biological habitats.

10	258	Are "…ecologically important sediment systems…" defined somewhere in the scientific literature or in any of the workshop reports related to this REMP? If so, please provide the reference.
11	292/293 and 578	Why is the AINP for the Romance fracture zone not limited to the fracture zone itself, as is the case for the Kane and Vema fracture zones, but extends about 100 km north and south along the MAR? Please clarify.
12	313-315	Please provide a more precise definition of the term "site" in "SINP". Does it include a complete hydrothermal field such as the TAG hydrothermal field? Hydrothermal fields usually consists of several active and inactive sites, which may be located several kilometres apart. This is particularly the case with TAG.
12	323	There are currently no methods to determine the subsurface fluid flow within a hydrothermal field with a reliability that would allow to predict changes in that flow due to mining activities. The subsurface fluid flow depends on several factors, including the structural geology that directs the flow, the distance between an active site and a mine site, and the depth of mining. Therefore, the part of the sentence that refers to subsurface fluid flow should be deleted.
12	329-332	It should be clearly indicated that in areas outside the core and buffer zones, contractor activities such as exploration and mining would be allowed. The current wording indicates that other zones with unspecified restrictions may be established outside the core and buffer zones. It must be clear in which zones restrictions or prohibitions on mining apply and where not. This is not evident according to the current text. We propose the additional wording: "...., *(iv) and other zones where exploration and exploitation activities are allowed*". Furthermore, core and buffer zones must be defined. These definitions should also include and describe the activities that are prohibited or permitted in the respective zones.
12	333-337	A contractor can only fulfil this task if there is an adequate definition of the different zones.
12/13	352-359	The meaning of the term "Sites/Areas in need of increased precaution (S/A-Precaution)" is unclear. Does the reference in line 368 mean that an area is necessarily "S/A-Precaution" if hydrothermal plumes have been detected? If a site or area is given the "S/A-Precaution" status, what kind of measures are taken? It needs to be clarified whether and which obligations a contractor has to fulfil?
14	403	What is meant by "...monitoring hydrothermal flows..."? If it means the monitoring of the fluid emanation at active sites, monitoring should be possible. However, if subsurface fluid flow is meant, a monitoring is not possible because there are currently no methods available to reliably determine subsurface fluid flow in a hydrothermal field. It should be investigated whether such methods can be developed, either based on direct or indirect monitoring (e.g., by heat flow measurements).
14	407	What does "…in the vicinity outside their contract areas" mean? A contractor should not be obliged to carry out monitoring outside its contract area. Instead, a contractor should ensure that areas outside its contract area are not negatively affected by its activities.
14	409	The same applies as for line 407.
14	410-414	The REMP section on return-water plumes should be moved to a separate paragraph. Similarly, any aspects relating to the removal of sediment or overburden should be included in this new paragraph. Studies on the impact of sediment removal on the underlying substrate are not useful, as the substrate below the sediments is removed during mining. However, it might be useful to monitor the effects of oxidation of sulfides

		originating from deeper parts of a massive sulfide body when they get into contact with oxidizing seawater, e.g. the release of metals into seawater during oxidation. This should be also included in a separate paragraph of the REMP. If the sediments are sulfidic, they will be mined in a similar way as the sulfides. If the sediments are normal pelagic sediments, however, they will be removed and treated as waste material, similar to the overburden. Since all SMS deposits in the "Area" have formed on young oceanic crust, there will be no thick sediment cover at any deposit. Thus, there is no need to remove large quantities of sediment for deposition elsewhere. The sediment cover will always be very thin. It needs to be clarified, whether its removal will have a significant impact on the environment.
14	415-417	Contractors should not set any "relevant environmental thresholds" themselves, if this is what is meant by "identify". Instead, the ISA should set the thresholds that contractors must meet.
14	418-420	As rocks and some sediment are moved at the seabed during mining, areas with increased particle concentration, which add to the natural particle flux, are unavoidable. The effects need to be minimized.
14	424-425, 433	Thresholds must be set by the ISA prior to the start of mining.
14	445	Define “significant biological events” more clearly.
18	578	Add coordinates to the map showing AINPs (selected fracture zones). The three AIPNs shown in red should be labelled with their names (Kane Fracture Zone, Vema Fracture Zone, and Romanche Fracture Zone System). A legend is missing (what is the difference between the red areas and the red cross-hatched areas?
Suggested nomenclature and definitions for the naming of hydrothermal fields and for the hydrothermal activity of vent fields		
Vent field / hydrothermal field		Largest division of a hydrothermal occurrence that may comprise several hydrothermally active or inactive areas linked by a common heat source and subsurface permeability structure. As this is often difficult to constrain, the term vent field should be used for areas that are separated from another by at least a few kilometres of original, unaltered seafloor and by different large-scale structures, accompanied by a change in the regional setting. This distance takes the underlying permeability structure and the most commonly observed extent of the down-flow and up-flow areas of hydrothermal convection cells into consideration.
Vent site		Hydrothermal occurrence comprising (a group of) hydrothermally active or inactive vents that may cluster around a main structure; e.g., a mound or volcano or along a fracture or fissure. A site is separated from another one by several tens to hundreds of meters of seafloor that may show some hydrothermal alteration, metalliferous sediments, and small-scale structures (e.g., talus fans, minor fault scarps).
Hydrothermal vent		Isolated, active or inactive, focused or diffuse exhaust of hydrothermal fluids at the seafloor. A vent is separated from one another by a clear structural change; e.g., distinguishable chimney bases or individual mound structures. Vents do not have to be chimneys, as in many cases at ultramafic-hosted sites, venting can occur from small seafloor depressions as well.
Active		An active hydrothermal field exhibits fluid flow above ambient seawater temperatures.
Inactive		An inactive hydrothermal field does currently not exhibit fluid flow but may potentially become active again by geological changes

Extinct	An extinct hydrothermal field is inactive and not expected to become active again.