Workshop on the development of a scientific approach to identifying key deep-sea taxa in support of the protection of the marine environment in the Area

Terms of reference

Organizers: International Seabed Authority, Ministry of Oceans and Fisheries of the Republic of Korea and the National Marine Biodiversity Institute of Korea

Date: 3-6 June 2024

Location: Seoul, Republic of Korea

Modality: In-person

Background

In accordance with the United Nations Convention on the Law of the Sea (UNCLOS), the International Seabed Authority (ISA) is mandated to regulate and control the activities in international seabed area (the Area), including the exploration and future exploitation of seabed mineral resources. ISA is also mandated to take the measures necessary to ensure effective protection of the marine environment from potential harmful effects that may arise from seabed activities (UNCLOS, Article 145). In so doing, ISA is required to promote the conduct of marine scientific research in the Area and coordinate and disseminate the results of such research when available (UNCLOS, Article 143).

The ISA DeepData database is comprised of data from environmental baseline studies conducted alongside mineral exploration in the Area. Currently, more than 137,000 species occurrence records are publicly made available through DeepData. Species distribution and abundance data are also shared through the Ocean Biodiversity Information System (OBIS) since 2021, when ISA became an OBIS node for sharing deep-sea biodiversity data. ISA DeepData also makes available physical and geochemical parameters of the sea floor and water column environment.

On the margins of the 2022 UN Ocean Conference, ISA launched the Sustainable Seabed Knowledge Initiative (SSKI) as a flagship initiative for implementing the ISA Action Plan for Marine Scientific Research (MSR Action Plan) adopted by the ISA Assembly in 2020. SSKI aims to advance scientific knowledge of deep-sea biodiversity, facilitate capacity-building efforts for deep-sea taxonomy research and inform relevant decision-making processes. SSKI directly contributes to advancing the strategic research priority 2 of the MSR Action Plan on standardizing and innovating methodologies for deep-sea biodiversity assessments, including taxonomic identification and description in the Area. While spearheading initiatives on species cataloguing, data sharing and developing tools for species identifications, SSKI focuses on facilitating taxonomic descriptions with a target of at least 1,000 new deep-sea species described by 2030. Such wealth of new data and information will contribute to developing scientifically robust measures for effective environmental management of the Area. The characterization of faunal communities, knowledge of organisms' ecological traits and their biotic and abiotic interactions within the ecosystem are crucial to understanding the functioning and resilience of deep-sea habitats (Paulus, 2021). This information supports the assessment of environmental risks and impacts and the development of scientifically robust measures for effective management of the Area.

In this context, in collaboration with the Ministry of Oceans and Fisheries of the Republic of Korea and the National Marine Biodiversity Institute of Korea, ISA is convening a workshop on developing a scientific approach to identifying key deep-sea taxa for effective protection of the marine environment

in the Area. The workshop builds on the outcomes of the previous editions of the annual ISA workshop series on deep-sea taxonomic standardization since 2020.[1]

The workshop will focus on developing a scientific approach to identifying deep-sea taxa that are of particular importance for the ongoing work of ISA in relation to establishing effective environmental management measures in the Area. Key considerations when developing this approach include the scientific criteria for designing area-based management tools as part of regional environmental management plans and the suitability of taxa in developing indicators for environmental monitoring. The workshop will also consider practical ways to increase the availability and accessibility of taxonomic knowledge and data and ensure the effective participation of all ISA members for the benefit of humankind.

Key objectives

The main objectives of the workshop are to:

1. Develop a scientifically sound approach to identifying key deep-sea taxa for supporting the conduct of environmental impact assessments and monitoring programmes, as well as the adoption of environmental management measures in the Area, in line with the scientific criteria for developing regional environmental management plans by ISA;
2. Identify priority needs for implementing the scientific approach developed, as well as possible activities to address the identified needs; and
3. Identify potential partners and stakeholders for further advancing and implementing the scientific approach.

Expected outputs

It is anticipated that the workshop will enable:

1. Development of a scientific approach to identifying key deep-sea taxa in habitats currently under mineral exploration and possible future exploitation.
   a. The workshop will develop an approach to determining deep-sea taxa that demonstrate particular relevance to supporting environmental impact assessments, monitoring programmes, and identifying options for management measures in the Area.
   b. The workshop will also make recommendations as appropriate on how to standardize sampling methodologies, especially in relation to targeted biological sampling including identification of indicator species.
2. Identification of priority needs and possible activities to address these needs.
   a. The workshop will identify priority needs, challenges, and opportunities for implementing the scientific approach developed in output 1 above in support of the protection of the marine environment in the Area.
   b. Possible activities to address the identified needs, including capacity development and other key considerations for designing the activities, will be described. This will also provide the basis for developing future SSKI activities.
3. Identification of partners and stakeholders for future activities.
   a. The workshop will identify opportunities to build new partnerships or scale up existing collaboration for facilitating research and capacity-development activities to advance the workshop outputs.

A workshop report will be prepared with inputs from all participants and made available on the ISA website. Building on the results of the workshop, follow-up activities are envisioned, subject to the availability of resources, to facilitate broader stakeholder engagement and further develop and implement the scientific approach detailed above.

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[1] 2020; 2021; 2022; 2023

Expected outcomes

The workshop is expected to contribute to the following outcomes:

1. Advanced knowledge on deep-sea biodiversity as well as improved standardized and targeted approaches in support of effective environmental impact assessments and monitoring programmes, including identification of indicator species;
2. Strengthened scientific basis to enhance the development and implementation of effective environmental management measures of the Area; and
3. Better informed decision-making processes of ISA and other relevant international frameworks and agendas based on the best available science.

Expected participants

Approximately 20-30 experts are expected to participate in the workshop. Over 300 experts have been engaged in previous SSKI activities, especially the last four deep-sea taxonomic standardization workshops. Currently nearly 140 taxonomic experts from about 60 scientific institutes and natural history museums are involved in environmental studies carried out by ISA contractors. Over 400 experts participated in ISA workshops on the development of regional environmental management plans. Such pool of experts will be considered for invitation to the workshop.

Participants with relevant expertise in deep-sea taxonomy, ecology, and biodiversity assessments will be invited, especially those with experience in environmental baseline surveys, impact assessments, monitoring programmes, and management measures in the Area, taking into account gender and geographical balance. Expertise in various biological communities and habitats will be considered to ensure that key environmental characteristics of the ecosystems associated with typical seabed mineral provinces (i.e. abyssal plains, hydrothermal vents, and seamounts) are represented. Additional consideration will be given to experts from developing countries, including former ISA trainees. Financial support for participation of selected African experts will be provided by the ISA Partnership Fund project, entitled "*Enhancing and leveraging the knowledge of African experts in deep-sea research through the establishment of the ISA-Egypt Joint Training and Research Centre*" endorsed at the meeting of the Partnership Board in January 2024. Representatives from relevant UN/international/regional organizations/programmes/initiatives or experts recommended by them will be invited.