Workshop on Deep Sea Taxonomic Standardization:

Strategic Approaches for Collaboration

Terms of Reference

Organizers: ISA Secretariat, the Ministry of Oceans and Fisheries of the Republic of Korea (MOMAF) and the National Marine Biodiversity Institute of Korea (MABIK)

Date: 15-16 September 2020

Modality: Online Virtual Workshop (MS Teams platform)

Note: This virtual session will be held for 3-4 hours per day. The organizers will ensure that the activities of the workshop are within a convenient time of day for as many participants as possible.

Background:

The mandate of the International Seabed Authority (ISA), on behalf of the State parties to the United Nations Convention on the Law of the Sea (the Convention hereinafter), is to administer the mineral resources and control and organize current exploration activities, as well as future mining activities, in the Area for the benefit of mankind as a whole. The ISA is required to take the measures necessary to ensure effective protection for the marine environment from harmful effects, as set out in the Convention[1]. In addition, the ISA is required to promote and encourage the conduct of marine scientific research in the Area and coordinate and disseminate the results of such research and analysis, when available[2]. The ISA, therefore, has an important role to play both as a global repository of data and information relating to the Area and to the marine environment and its resources. The ISA can be a catalyst for collaborative research at the international level, for the benefit of all member States, in particular for developing States.

Sustainable development of mineral resources in the Area requires effective environmental management measures, such as baseline studies, monitoring programmes, and environmental impact and risk assessments. It is thus vital that decision-making process is supported in an efficient manner in terms of availability and reliability of collected information. For this to occur, scientific data need to be collected, analyzed and reported in a standardized way that is comparable and well-documented so that it can support a range of management demands.

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[1] Article 145
[2] Article 143 (2)

Despite many decades of ocean exploration and sampling, the majority of species found in deep seafloor habitats are new to science. For instance, in abyssal plains over 90% of recovered animal species may be undescribed. The lack of deep-sea taxonomic information is a major impediment for assessing the status and trend of deep-sea marine biodiversity. Without information on the fundamental identity of species (taxonomic descriptions), it is impossible to understand essential properties of the biological community and ecosystems, including biodiversity, biogeography, connectivity, resilience and ecosystem function.

In this context and building on the existing frameworks, including the ISA Strategic Plan 2019-2023[3] and the High-Level Action Plan[4] adopted by the ISA Assembly in 2018 and 2019 respectively, the ISA is in the process of developing an Action Plan on Marine Scientific Research in support of the UN Decade of Ocean Science for Sustainable Development. Among others, the ISA has identified the need to "advance scientific knowledge and understanding of deep-sea ecosystems, including biodiversity and ecosystems functions, in the Area"[5] and "standardize and innovate methodologies for deep-sea biodiversity assessment, including taxonomic identification and description, in the Area"[6] as strategic research priorities.

In response to these needs and efforts, the ISA Secretariat, in collaboration with the Ministry of Oceans and Fisheries of the Republic of Korea (MOMAF) and the National Marine Institute of Korea (MABIK), is convening a workshop to facilitate the development of strategic alliances and partnerships for effective standardization of deep-sea taxonomic identification, as well as enhancement of capacity-building activities on issues related to deep-sea taxonomy

Objectives of the workshop:

The workshop aims to identify coherent, collaborative, and scientifically robust solutions to taxonomic knowledge gaps in various stages from collection, preservation, and archiving of biological samples and taxonomic data to identification and description of species. Specifically, the workshop will focus on the following tasks:

1. Identify specific needs and approaches to advance deep-sea taxonomic knowledge in various faunal groups (micro- to megafauna), including tools to be developed for targeting different types of uses and users;
2. Identify existing institutions and resources that can provide taxonomic services, including molecular and morphological identifications, archiving facilities (online databases and curated museum collections), and training on taxonomic skills, as well as their contributions to advancing deep-sea taxonomic knowledge; and

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[3] ISBA/24/A/10
[4] ISBA/25/A/15
[5] ISBA/26/A/4, annex I, para.8(a)
[6] ISBA/26/A/4, annex I, para.8(b)

3. Explore possible mechanisms for enhancing collaboration among contractors, academic/scientific institutions, and other stakeholders to support the development of a deep-sea taxonomic knowledge platform, as well as facilitating sharing of data and expertise and long-term capacity development.

Expected outcomes:

The expected outcomes of the workshop include:

1. Network of deep-sea taxonomy experts to support the development and curation of taxonomic data and promote the development of deep-sea species identification toolkits across faunal groups from different mineral provinces in the Area;

2. Strategic approaches for sustainable integration of taxonomic information, including through the ISA database (DeepData), linking morphological descriptions with online repositories of DNA sequences, coupled with the archiving of specimens and tissue samples in museum collections;

3. Strategic approaches for promoting deep-sea taxonomic research and training programmes in collaboration with relevant scientific institutions and partner organizations, including capacity-building programmes in deep-sea taxonomic research for developing countries; and

4. Knowledge building for better understanding of the process and purpose of environmental assessment and monitoring in the Area, in light of the linkage between taxonomy and environmental management and protection.

Expected Participants (max. 80 in total):

- ISA Contractors
- Natural History Museum representatives/experts
- Scientific/Academic Institutions
- Taxonomists from different faunal groups
- Government officials
- Other relevant experts from partner organizations