



## FACT SHEET

# TECHNICAL WORKSHOPS

Since 1998, the International Seabed Authority has been convening a series of annual workshops on scientific and technical issues relating to resources of the deep seabed. Each of these workshops bring together marine scientists and experts, representatives of contractors, staff members of the Authority and members of its Legal and Technical Commission.

The objectives of these workshops are four-fold:

- Exchange information on the latest research findings and development efforts relating to the deep-sea environment, the nature of the mineral resources on and under the seabed, and the technology that may be used for seabed mining.
- Promote international cooperative research on issues where investigators and scientists will benefit from collaborative efforts that avoid duplication, and identify topics on which research is most needed.
- Encourage the standardization of scientific and technical equipment and procedures used to investigate the seabed and the deep-sea environment, and specify precisely which environmental characteristics should be monitored to keep track of any harmful consequences resulting from exploration and mining; and
- Provide the Authority with advice and information that will help it to evaluate the seabed activities of contractors and assist it to develop new guidelines and recommendations as part of its task of administering the international seabed area.

The findings and recommendations of workshops were frequently cited in the preparatory work leading to the adoption by the Authority of the Regulations on prospecting and exploration for polymetallic nodules, the adoption by the Legal and Technical Commission of guidelines for contractors in assessing possible environmental impacts of their activities; the adoption by the Authority of the Regulations on prospecting and exploration for polymetallic sulphides and the adoption of the Regulations on prospecting and exploration for cobalt-rich ferromanganese crusts.

Workshops in 2002 and 2003 on the prospects for international collaboration in scientific research and geological modelling respectively led directly to two major initiatives by the Authority: an international project to research gene flow and species endemism across the Clarion-Clipperton Zone (the Kaplan Project) and the establishment of a geologic model of the Clarion-Clipperton nodule province.

## ACCOMPLISHMENTS OF WORKSHOPS 1998-2013

### ***Workshop on Deep-Seabed Polymetallic Nodule Exploration: Development of Environmental Guidelines (Sanya, China, 1-5 June 1998)***

Drafted guidelines suggesting the specific information to be gathered on natural conditions at potential mine sites (baseline data) and on the potential impacts from test mining.

### ***Workshop on Proposed Technologies of Deep-Seabed Mining of Polymetallic Nodules (Kingston, Jamaica, 3-6 August 1999)***

Exchanged information on the latest developments in exploration and mining technology, and examined scenarios for future developments.

### ***Workshop on Mineral Resources of the International Seabed Area (Kingston, Jamaica, 26-30 June 2000)***

Discussed prospects for exploiting polymetallic sulphides, cobalt-rich crusts and methane hydrates.

### ***Workshop on Standardization of Environmental Data and Information: Development of Guidelines (Kingston, Jamaica, 25-29 June 2001)***

Recommended specific procedures and techniques contractors should follow in gathering environmental information on an internationally comparable basis.

### ***Workshop on Prospects for International Collaboration in Marine Environmental Research to Enhance Understanding of the Deep-Sea Environment (Kingston, Jamaica, 29 July – 2 August 2002)***

Worked out proposals for four research projects on potential mining impacts and natural environmental variability.

### ***Workshop on the Establishment of a Geological Model of Polymetallic Nodule Resources in the Clarion-Clipperton Fracture Zone (CCZ) of the Equatorial North Pacific Ocean (Nadi, Fiji 13-20 May 2003)***

Recommended a work programme for the development of a geological model for nodules in the Clarion-Clipperton Zone (CCZ).

The Workshop discussed a work programme to develop a geological model. The programme was divided into three phases – (1) data acquisition and processing; (2) analysis; and (3) production of a geological model and preparation of a Prospector's Guide. The model covered a broad range of factors of interest to both prospectors and scientists with input from various fields including seafloor topography, geology, biology with data sourced from contractors, public and private institutions.

**Workshop for the Establishment of Environmental Baselines at Deep Seafloor Cobalt-Rich Crusts and Deep Seabed Polymetallic Sulphide Mine Sites in the Area for the Purpose of Evaluating the Likely Effects of Exploration and Exploitation of the Marine Environment (Kingston, Jamaica, 16-20 September 2004)**

Discussed the potential impact of exploring for and mining these resources; requirements for baseline studies; the relevance of current or past research programmes and the design and development of a monitoring programme to be carried out during exploration and mining of these resources.

The Workshop identified the importance of protecting and preserving the marine environment during prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crust deposits, the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area (ISBA/10/C/WP.1) and would require the International Seabed Authority, inter alia, to establish and keep under periodic review, environmental rules, regulations and procedures to ensure effective protection of the marine environment from harmful effects which may arise from activities in the Area, and together with sponsoring States, to apply a precautionary approach to such activities.

**Workshop on Cobalt-Rich Crusts and the Diversity of Distribution Patterns of Seamount Fauna. (Kingston, Jamaica, 27-31 March 2006)**

Assessed patterns of diversity and endemism of seamount fauna including the factors that drive these patterns; examined gaps in current knowledge of these patterns with a view to encouraging collaborative research and provided the Legal and Technical Commission with recommendations to assist it to develop environmental guidelines for future contractors.

The workshop assisted the Authority by providing a more detailed analysis on matters relating to the adoption of regulations on prospecting and exploration for these two types of mineral deposits.

**Workshop on Technical and Economic Considerations for Mining Cobalt-Rich Ferromanganese Crusts and Polymetallic Sulphide Resources of the International Seabed Area (The Area) (Kingston, Jamaica, 31 July - 4 August 2006)**

Discussed prospects for the development of cobalt-rich ferromanganese crusts and polymetallic sulphide deposits in the Area; their distribution potential and geological characteristics and technological issues associated with commercializing the deposits.

The workshop examined various mineral development prospects in the Area, and the processes through which occurrences of cobalt-rich ferromanganese crusts and polymetallic sulphides may be converted to commercially exploitable deposits; technological issues associated with commercializing deposits; economic and financial issues; and the market outlook for the base and precious metals to be found in these two potential ores.

**Workshop on Technical and Economic Considerations for Mining Cobalt-Rich Workshop on Polymetallic Nodule Mining Technology - Current Status and Challenges Ahead (Chennai, India, 18-22 February 2008)**

Discussed the possible impact of developments on the commercialization of polymetallic nodules and opportunities for all the technology developers to come on a single platform and take stock of the developments.

**Workshop on the Results of a Project to Develop a Geological Model of Polymetallic Nodule Deposits in the Clarion-Clipperton Zone (Kingston, Jamaica, 14-17 December 2009)**

Discussed the need to establish similar geological models in the Indian and Atlantic Oceans taking into consideration exploration technology: exploration, analytical methods, mapping, visualization, ROV/AUV etc.; environmental components:

research plan, time series, site plan and standardized data sets; and promoting the results of the model through an education and outreach plan.

The workshop showcased the Geological Model of polymetallic nodule deposits in the CCZ, and the Prospector's Guide containing a narrative description of the key factors relevant to exploration for polymetallic nodules which the Authority undertook as part of its mandate to conduct resource assessments of prospective mineral deposits in the Area.

**International Workshop to Develop an Environmental Management Plan for the Clarion Clipperton Zone (Kingston, Jamaica, 8-12 November 2010)**

Reviewed a proposal to establish a network of areas of particular environmental interest in the CCZ, and identify how the establishment of such a network could contribute to the general objectives of the environmental regime established by the Authority.

The workshop examined nine areas of particular environmental interest in nine different regions of the CCZ, configured to protect the natural ecosystem structure and function and allow for recolonization of impacted areas, while avoiding any conflict with existing uses of the CCZ, advised on the formulation of a regional scale environmental management plan for the CCZ, based on the best available scientific knowledge, including the conservation objectives for the CCZ and a comprehensive environmental monitoring programme.

**International Workshop on Environmental Management Needs for Exploration and Exploitation of Deep Sea Minerals (Nadi, Fiji, 29 November - 2 December 2011)**

Formulated preliminary recommendations for environmental impact assessments (EIA) of seabed mining both within and beyond national jurisdiction.

The workshop formulated a draft template for an EIA of deep seabed mining including an outline of the legislative and regulatory provisions that should form the basis of environmental management of deep seabed mining and identification of capacity building needs and methods by which these needs could be addressed.

**International Workshop on Further Consideration of the Implementation of Article 82 of the United Nations Convention on the Law of the Sea (Beijing, China; 26-30 November 2012)**

Aimed at producing proposals and recommendations for consideration by Outer Continental Shelf States and by the relevant organs of the Authority.

The workshop explored a possible framework for a Model Article 82 Agreement and identified considerations in the international law of treaties with regard to agreements between States and international organizations that potentially assist in the framing of the relationship.

**Workshop to Standardize Megafaunal Taxonomy for Exploration Contract Areas in the Clarion-Clipperton Fracture Zone (Wilhelmshaven, Germany, 10-15 June 2013)**

Reviewed the need for megafaunal specimen to be collected to ensure taxonomic accuracy and discussed the development of a common protocol of best practices to collect specimens, including minimum standards of sampling intensity, the use of taxon-specific preservation methods and the involvement of relevant taxonomic experts.

The workshop agreed that megafaunal specimens needed to be collected to ensure taxonomic accuracy and that imaging of megafauna was not sufficient; encouraged collaboration between contractors and recommended the development of taxonomic capacity to ensure that work is completed within a reasonable time frame.



Participants at the 2011 Workshop on Environmental Management Needs for Exploration and Exploitation of Deep Sea Minerals (Nadi, Fiji, 2011).