



**WORKSHOP ON MARINE SCIENTIFIC RESEARCH IN THE AREA:
ESTABLISHING COLLABORATIVE PLATFORM TO ENHANCE BIODIVERSITY
KNOWLEDGE FOR ENVIRONMENTAL MANAGEMENT IN MID-OCEAN RIDGE
ECOSYSTEM FOCUSING ON THE INDIAN OCEAN**

15 - 17 December 2020; Online

ANNOTATIONS TO THE PROVISIONAL AGENDA

INTRODUCTION

1. In accordance with the UN Convention on the Law of the Sea (“the Convention”) and 1994 Agreement relating to the implementation of Part XI of the Convention, the International Seabed Authority (ISA), on behalf of the States Parties to the Convention, is mandated to administer the mineral resources in the Area and to control and organize current exploration activities, as well as future mining activities, in the Area for the benefit of mankind as a whole. The Authority is also mandated to take necessary measures with respect to activities in the Area to ensure effective protection for the marine environment from harmful effects and to adopt appropriate rules, regulations and procedures for, *inter alia*, the prevention, reduction and control of pollution and other hazards to the marine environment, the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment¹.

2. In addition, the Authority 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 available². The importance of this mission was highlighted by the Strategic Plan of the ISA for the period 2019-2023, adopted by the Assembly at its twenty-fourth session in 2018³. Especially through the strategic direction 4 (“Promote and encourage marine scientific research in the Area”), the members of the ISA have established the vision in this regard, which is being implemented according to the High-level Action Plan for 2019-2023 adopted by the Assembly at its twenty-fifth session in 2019⁴.

3. In 2017, the United Nations Decade of Ocean Science for Sustainable Development from 2021 to 2030 was proclaimed by the United Nations General Assembly in its resolution 72/73. In July 2020, the ISA developed an action plan⁵ to formalize and organize its contribution to the implementation of the United Nations Decade, building on the strategic directions, high-level actions and associated outputs set out in the abovementioned Strategic Plan and the High-level Action Plan. The ISA

¹ United Nations Convention on the Law of the Sea, art.145

² United Nations Convention on the Law of the Sea, art.143

³ [ISBA/24/A/10](#), annex, para. 29

⁴ [ISBA/25/A/15](#)

⁵ [ISBA/26/A/4](#)

Assembly has been invited to consider, with a view to adoption, this action plan at its subsequent session.

4. In pursuance of the strategies and priorities identified above, the ISA, in collaboration with the China Ocean Mineral Resources Research and Development Association (COMRA) and the Hong Kong University of Science and Technology (HKUST), is convening an online international workshop on Marine Scientific Research in the Area: *Establishing collaborative platform to enhance biodiversity knowledge for environmental management in mid-ocean ridge ecosystem*, from 15-17 December 2020. The workshop will be delivered online via the Microsoft Teams platform.

5. The workshop aims to: (i) review existing efforts in gathering knowledge and information on hydrothermal vent ecosystems in the Indian Ocean, and identify knowledge gaps and priorities for future scientific research; (ii) identify best practices, including technological innovations to address knowledge gaps related to mid-ocean ridge ecosystems in the Indian Ocean through standardization of methodologies, protocols and procedures for environmental monitoring and data sharing; and (iii) explore mechanisms for collaboration among and between contractors, and the scientific community to support long-term observation and monitoring of hydrothermal vent ecosystems in the Indian Ocean.

6. The expected outcomes of the workshop include: (i) strengthened scientific foundation to support the implementation of ISA's mandate for marine scientific research and the protection of marine environment, including environmental baseline studies, monitoring and assessment; (ii) increased awareness on the scientific contribution of exploration activities in the Area; (iii) enhanced scientific collaboration among contractors and scientific groups; and (iv) reinforced ISA's contribution to other international scientific initiatives, as aligned with the strategic research priorities of the ISA Action Plan in support of UN Decade of Ocean Sciences for Sustainable Development.

7. A list of documents for the workshop is contained in annex I.

8. The ISA secretariat will issue an information note for participants containing logistics details to facilitate their participation, including information on how to join the online workshop and navigate different functions of the online meeting platform. The workshop will be conducted in English.

9. The workshop will commence at 6:00 a.m. (Kingston, Jamaica; GMT-5) on Tuesday, 15 December 2020.

ITEM 1. OPENING OF THE WORKSHOP

10. The Secretary General of the International Seabed Authority, together with representatives of the Ministry of Natural Resources of China and the Hong Kong University of Science and Technology (HKUST), will open the workshop at 6 a.m. (Jamaica; GMT-5) on Tuesday, 15 December 2020.

ITEM 2. WORKSHOP BACKGROUND, SCOPE AND EXPECTED OUTPUTS

11. Pei-Yuan Qian (HKUST) and Pedro Madureira (member of the LTC) will be invited as co-chairs to moderate the workshop deliberation.

12. Under this item, participants will have before them "Draft Action plan of the International Seabed Authority in support of the United Nations Decade of Ocean Science for Sustainable Development" (ISBA/26/A/4).

13. Jihyun Lee (ISA secretariat) will provide a presentation on the workshop background, and Luciana Genio (ISA secretariat) will provide a presentation on the workshop objectives, scope and expected outputs.

14. Liu Feng (COMRA) will deliver a presentation on China's efforts in mid-ocean ridge studies.

ITEM 3. OVERVIEW OF CONTRACTOR ACTIVITIES RELATED TO ENVIRONMENTAL MONITORING AND ASSESSMENT IN THE INDIAN OCEAN: KEY RESULTS AND CHALLENGES

15. Under this item, the following participants will deliver presentations to provide an overview of contractor activities in the Indian Ocean highlighting key results and challenges associated with environmental monitoring and assessment in the region:

- Thomas Kuhn (Federal Institute for Geosciences and Natural Resources of Germany, BGR)
- Zongling Wang (China Ocean Mineral Resources Research and Development Association, COMRA)
- Baban Ingole (Government of India)
- Yeon Jee Suh (Government of the Republic of Korea)

16. A Q&A session will then follow for participants to share their views, insights, and suggestions.

17. Building on the presentations and the results of deliberations under the previous agenda items, participants, at the plenary, will discuss knowledge gaps and current challenges in the context of environmental baseline studies and monitoring in the mid-ocean ridge ecosystems in the Indian Ocean.

ITEM 4. ENHANCING SCIENTIFIC KNOWLEDGE ON MID-OCEAN RIDGE ECOSYSTEMS WITH A FOCUS ON THE INDIAN

18. First, the following presentations will be delivered to inform the discussions under this item:

- (i) New approaches to deep-sea polymetallic sulphides exploration
 - by Chunhui Tao (Second Institute of Oceanography, China)
- (ii) Microbial diversity and function in hydrothermal vent ecosystems of Middle Indian Ocean Ridge
 - by Ken Takai (Japan Agency for Marine-Earth Science and Technology – JAMSTEC, Japan)
- (iii) Biogeochemical studies in the South Indian Ocean
 - by Natalie C. Harms (University of Hamburg, Germany)
- (iv) Understanding connectivity in the Indian Ocean Ridge
 - by Florence Pradillon (Institut Français de Recherche pour l'Exploitation de la Mer – IFREMER, France)
- (v) DeepData: Platform for sharing environmental data on mid-ocean ridge
 - Sheldon Carter (ISA secretariat)

19. A Q&A session will then follow for participants to share their views, insights, and suggestions.

20. Building on the presentations and the results of deliberations under the previous agenda items, participants, at the plenary, will discuss the following topics:

- Technology innovation for observation and monitoring, including in-situ and ex-situ experimentation.
- Standardization of methods, protocols and procedures for monitoring and observation.
- Data exchange, compilation and analysis, including through DeepData, to support the implementation of ISA's mandate for environmental protection.

ITEM 5. DEVELOPING A COLLABORATIVE PLATFORM FOR MARINE SCIENTIFIC RESEARCH IN THE MID-OCEAN RIDGES IN THE INDIAN OCEAN IN SUPPORT OF THE IMPLEMENTATION OF ISA'S MANDATE

21. First, the following theme presentation will be delivered to inform the discussions under this item:

- Collaboration among stakeholders and capacity development of various actors to support environmental management and address knowledge gaps
 - Gordon Paterson (LTC member)

23. Under this item, a panel discussion will be organized to discuss ways and means for developing a collaborative platform for marine scientific research in mid-ocean ridges, as guided by the “Draft Action plan of the International Seabed Authority in support of the United Nations Decade of Ocean Science for Sustainable Development” (ISBA/26/A/4), including:

- Joint cruises;
- Joint or complementary research programmes; and
- Opportunities for capacity building

22. The following panelists will be invited for the discussion:

- (i) Pat Halpin (Duke University)
- (ii) Gu Wu (ISA-China Joint Training and Research Centre)
- (iii) John Copley (University of Southampton) - TBC
- (iv) Dass Bissessur (Mauritius) - TBC
- (v) Joseph Appiott (Secretariat of the Convention on Biological Diversity, CBD) - TBC
- (vi) Nic Bax (IOC-UNESCO Global Ocean Observing System, GOOS) – TBC
- (vii) Former ISA trainee

23. Following the panel discussion, participants will be invited to ask questions and exchange insight and views, in response to the ideas, examples, and experience shared by the panelists.

ITEM 6. SUMMARY AND CONCLUSION

24. The workshop co-chairs will provide a summary of the workshop deliberation.

ITEM 7. CLOSURE OF THE WORKSHOP

25. The workshop is expected to close at 9:30 a.m. (Jamaica; GMT-5) on Thursday, 17 December 2020.

Annex I

LIST OF DOCUMENTS FOR THE WORKSHOP

<i>Prepared by</i>	<i>Title</i>
ISA secretariat	Provisional agenda
ISA secretariat	Annotations to the provisional agenda
ISA secretariat	Draft Action plan of the International Seabed Authority in support of the United Nations Decade of Ocean Science for Sustainable Development (ISBA/26/A/4)

Annex II

PROPOSED ORGANIZATION OF WORK

Workshop Co-Chairs:

- Pei-Yuan Qian (Hong Kong University of Science and Technology, China)
- Pedro Madureira (Member of Legal and Technical Commission of ISA)

Day 1 Tuesday 15 December

Time (Kingston, Jamaica; GMT-5)	Workshop activities
06:00 – 06:30am	<p><i>Agenda item 1. Opening of the workshop</i></p> <ul style="list-style-type: none"> • Secretary-General of the International Seabed Authority (ISA) • Representative of the Ministry of Natural Resources of China • Representative of HKUST
06:30 – 07:15am	<p><i>Agenda item 2. Workshop background, scope and expected outputs</i></p> <ul style="list-style-type: none"> • Workshop background, scope and expected outputs <ul style="list-style-type: none"> ○ Jihyun Lee and Luciana Genio (ISA Secretariat) • Overview on China’s efforts for the studies on mid-ocean ridges <ul style="list-style-type: none"> ○ Liu Feng (China Ocean Mineral Resources Research and Development Association, COMRA)
07:15 – 08:45am	<p><i>Agenda item 3. Overview of contractor activities related to environmental monitoring and assessment in the Indian Ocean: key results and challenges</i></p> <ul style="list-style-type: none"> • Thomas Kuhn (Federal Institute for Geosciences and Natural Resources of Germany, BGR) • Zongling Wang (COMRA) • Baban Ingole (Government of India) • Yeon Jee Suh (Government of the Republic of Korea) <p>Q&A</p>
08:45 – 09:00am	<i>Health break</i>
09:00 – 9:30am	<p><i>Agenda item 3. Continued.</i></p> <p>The participants will discuss knowledge gaps and current challenges in the context of environmental baseline studies and monitoring in the mid-ocean ridge ecosystems in the Indian Ocean.</p> <p><i>Guiding questions:</i></p>

	<ol style="list-style-type: none"> 1. What are the main findings and knowledge gaps in environmental baseline studies and research, in particular related to biodiversity, ecosystem structure and function, and the drivers for environmental change? 2. What are the key challenges to be addressed to enhance effective sharing, analysis and synthesis of environmental data among contractors, scientific programs and other stakeholders? <p><i>Plenary discussion</i></p>
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Day 2 Wednesday 16 December

Time (Kingston, Jamaica; GMT-5)	Workshop Activities
06:00 – 08:00am	<p><i>Agenda item 4. Enhancing scientific knowledge on mid-ocean ridge ecosystems with a focus on the Indian Ocean (each for 15 minutes)</i></p> <ul style="list-style-type: none"> • New approaches to deep-sea polymetallic sulphide exploration <ul style="list-style-type: none"> ○ Chunhui Tao (SIO, China) • Microbial diversity and function in hydrothermal vent ecosystems of Middle Indian Ocean Ridge <ul style="list-style-type: none"> ○ Ken Takai (JAMSTEC, Japan) • Biogeochemical studies in the South Indian Ocean <ul style="list-style-type: none"> ○ Natalie C. Hamars (University of Hamburg, Germany) • Understanding connectivity in the Indian Ocean ridge <ul style="list-style-type: none"> ○ Florence Pradillon (IFREMER, France) • <i>DeepData</i>: Platform for sharing environmental data on mid-ocean ridge <ul style="list-style-type: none"> ○ Sheldon Carter (ISA secretariat) <p>Q&A</p>
08:00 – 08:20am	<i>Health break</i>
08:20 – 08:50am	<p><i>Agenda item 4. Continued.</i></p> <p>The participants will discuss the following key topics:</p> <ol style="list-style-type: none"> 1. Technology innovation for observation and monitoring, including in-situ and ex-situ experimentation. 2. Standardization of methods, protocols and procedures for monitoring and observation. 3. Data exchange, compilation and analysis, including through <i>DeepData</i>, to support the implementation of ISA’s mandate for environmental protection

	<i>Plenary discussion</i>
08:50 – 09:30am	<p><i>Agenda item 5. Developing a collaborative platform for marine scientific research in the mid-ocean ridges in the Indian ocean in support of the implementation of ISA’s mandate</i></p> <ul style="list-style-type: none"> • Collaboration among stakeholders and capacity development of various actors to support environmental management and address knowledge gaps <ul style="list-style-type: none"> ○ Gordon Paterson (LTC member) <p>Q&A</p>

Day 3 Thursday 17 December

Time (Kingston, Jamaica; GMT-5)	Workshop Activities
06:00 – 08:30am	<p><i>Agenda item 5. Continued.</i></p> <p>Ways and means for developing a collaborative platform for marine scientific research in mid-ocean ridges, as guided by the ISA Action Plan for Marine Scientific Research in the Area, including:</p> <ul style="list-style-type: none"> ○ joint cruises, ○ joint or complementary research programmes, and ○ opportunities for capacity building. <p><i>Panel Discussion</i></p> <ul style="list-style-type: none"> • Pat Halpin (Duke University) • Gu Wu (ISA-China Joint Training and Research Centre) • John Copley (University of Southampton) - <i>TBC</i> • Dass Bissessur (Mauritius) - <i>TBC</i> • Joseph Appiott (Secretariat of the Convention on Biological Diversity, CBD) - <i>TBC</i> • Nic Bax (IOC-UNESCO Global Ocean Observing System, GOOS) – <i>TBC</i> • Former ISA trainee

	Q&A
08:30 - 09:00	<i>Health break</i>
09:00 -09:30	<i>Agenda item 6 Summary and Conclusion by co-chairs</i> <i>Agenda item 7 Closure of the workshop</i>