



# Africa's Deep Seabed Resources Project: Third Workshop Report

Mauritius, June 2021



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# **Africa's Deep Seabed Resources Project: Third Workshop Report**

**Mauritius, June 2021**

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# Abbreviations

<b>ADSR</b>	Africa's Deep Seabed Resources	<b>ISA</b>	International Seabed Authority
<b>AIMS</b>	Africa's Integrated Maritime Strategy	<b>ITLOS</b>	International Tribunal for the Law of the Sea
<b>AMDC</b>	African Minerals Development Centre	<b>JAMSTEC</b>	Japan Agency for Marine-Earth Science and Technology
<b>APEI</b>	Area of particular environmental interest	<b>LDC</b>	Least developed country
<b>AU</b>	African Union	<b>LLDC</b>	Landlocked developing country
<b>AUC</b>	African Union Commission	<b>LTC</b>	Legal and Technical Commission
<b>AMV</b>	Africa Mining Vision	<b>MOI</b>	Mauritius Oceanography Institute
<b>AUV</b>	Autonomous underwater vehicle	<b>MSR</b>	Marine scientific research
<b>BGR</b>	Federal Institute for Geosciences and Natural Resources	<b>NORAD</b>	Norwegian Agency for Development Cooperation
<b>BNJ</b>	Beyond national jurisdiction	<b>NPD</b>	Norwegian Petroleum Directorate
<b>CCZ</b>	Clarion-Clipperton Zone	<b>PARC</b>	Pan African Reporting Code
<b>CEMZA</b>	Combined Exclusive Maritime Zone of Africa	<b>PMN</b>	Polymetallic nodules
<b>CFC</b>	Cobalt-rich ferromanganese crusts	<b>PMS</b>	Polymetallic sulphides
<b>CLCS</b>	Commission on the Limits of the Continental Shelf	<b>RCE</b>	Regional centres of excellence
<b>CS</b>	Continental shelf	<b>REC</b>	Regional economic community
<b>DOALOS</b>	Division for Ocean Affairs and the Law of the Sea	<b>REMP</b>	Regional environmental management plan
<b>DSM</b>	Deep seabed mining	<b>SDG</b>	Sustainable Development Goal
<b>ECS</b>	Extended continental shelf	<b>SIDS</b>	Small island developing State
<b>EEZ</b>	Exclusive economic zone	<b>SMS</b>	Seafloor massive sulphides
<b>EFSMR</b>	Endowment Fund for Marine Scientific Research	<b>SOLAS</b>	International Convention for the Safety of Life at Sea
<b>EIA</b>	Environmental impact assessment	<b>SPLOS</b>	States Parties to the Law of the Sea
<b>GDP</b>	Gross domestic product	<b>UN</b>	United Nations
<b>IGO</b>	Intergovernmental organization	<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>IMO</b>	International Maritime Organization	<b>UNECA</b>	United Nations Economic Commission for Africa



# Foreword

The ISA Strategic Plan for 2019-2023 explicitly recognizes the importance for ISA to align its programmes and initiatives towards the achievement of relevant goals and targets of the 2030 Agenda. Such a commitment is also at the core of the work of the African Union as reflected in both the Agenda 2063: The Africa we Want and the 2019 Africa Blue Economy Strategy which identify the sustainable development of deep seabed resources as a key driver for the development of Africa's blue economy. Yet, despite a long-standing commitment of Africa to the work of ISA, the intergovernmental organization established with the exclusive mandate to manage the resources of the international seabed area (the Area), Africa still remains the only regional group that has not yet taken full advantage of the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) to take part in deep sea mineral exploration.

The need for increased awareness and targeted information was first identified in the outcomes of a workshop organized by ISA in partnership with the Africa Minerals Development Center (AMDC) of the United Nations Economic Commission for Africa and the Pew Charitable Trusts organized in Kampala, Uganda, in 2017. Building on this, ISA and the AMDC jointly registered a specific Voluntary Commitment at the 2017 UN Ocean Conference (#OceanAction16374). Since then our Voluntary Commitment translated into the Africa Deep Seabed Resources (ADSR) project implemented by ISA in partnership with the African Union (to which the AMDC is now attached) and the Government of Norway and in close cooperation with African member States of ISA.

This workshop, the third of the five workshops organized under the ADSR workshop, was held in partnership with the Government of Mauritius. It was directed to the Indian Ocean region and designed to address the needs of Comoros, Kenya, Madagascar, Mauritius, Rwanda, Tanzania, Seychelles and Somalia. It gave me immense pleasure to see the high level of participation with over 160 participants from governments, academia, civil society, the private sector and former trainees of ISA.

I wish to commend all participants and experts who have participated and contributed to the quality of the discussion that took place and resulted in the formulation of clear recommendations that ISA and African States could take into consideration to foster the engagement of African States, in particular, the least developed countries (LDCs), landlocked developing countries (LLDCs) and the small island developing States (SIDS), in the activities undertaken in the Area and make the best possible use of the opportunities available to them through the Part XI of UNCLOS.

I wish to reiterate my sincere gratitude to the Government of Mauritius in hosting this third workshop online. Even though the restrictions of the COVID-19 pandemic prevented the workshop from being conducted in Mauritius physically, the workshop was very successful in achieving its objective that was clearly reflected in the quality of participation and discussions during the three days.

More workshops under the ADSR project will be held in 2022 and I am confident that our joint Voluntary Commitment will continue to contribute to the regional and national development objectives set out by our Member States, especially in the context of the African Decade of Seas and Oceans and the 2030 Agenda for Sustainable Development.



**H.E. Mr. Michael W. Lodge**  
Secretary-General,  
International Seabed Authority

## Acknowledgments

This report has been prepared by ISA Secretariat on the basis of abstracts and presentations submitted by the participants to the third ADSR workshop organized with Mauritius.

The ISA Secretariat wishes to express its deep appreciation to all those who helped organize the workshop, particularly the Prime Minister's Office of the Republic of Mauritius; the Permanent Mission of the Republic of Mauritius to the United Nations; the Department for Continental Shelf, Maritime Zones Administration & Exploration of the Republic of Mauritius; the African Union Commission (AUC); the AMDC and the Royal Ministry of Foreign Affairs of Norway.

The ISA Secretariat also wishes to thank all the experts who contributed to the success of this workshop, including Mr. Joshua T. Tuhumwire, a member of the ISA Legal and Technical Commission (LTC), and Mr. John Youhanes Magok, Mining Policy Officer at the Africa Union, for facilitating the breakout sessions.

We thank all the ISA Secretariat staff who assisted in different steps of preparation of the workshop and this report, particularly Dr. Sonakshi Mishra, Ms. Talatu Akindolire and Ms. Kayon Wray.

Finally, we thank the ISA Communications Unit for preparing this report, particularly Ms. Stefanie Neno and Ms. Shanique Gregory as well as Mr. Besmir Fidahić.

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# Executive summary

ISA held the third workshop within the ADSR project between 1 and 3 June 2021. This workshop was hosted online by the Republic of Mauritius and organized in partnership with the AUC and the Norwegian Agency for Development Cooperation (NORAD). The ADSR project presents the operationalization of the Voluntary Commitment registered by ISA in partnership with the AMDC of the African Union (AU) at the 2017 UN Ocean Conference held in New York, USA (#OceanAction16374). Since then, the ADSR project received the financial support of the Government of Norway through the participation of NORAD.

The ADSR project aims to foster international and regional cooperation to promote the sustainable development of Africa's deep seabed resources in support of Africa's blue economy. The main objective is to raise awareness among African decision-makers about the importance of sustainable development activities in the international seabed area and on Africa's continental shelf. The implementation of this project will provide participating countries an opportunity to discuss capacity-building actions and strategies that could be developed further at the national, regional or international levels to help African States benefit fully from their blue economies, particularly in matters relating to the increased participation in deep seabed exploration activities.

Due to the COVID-19 pandemic, this workshop was held remotely. However, it still provided the opportunity for 168 government representatives from the



targeted countries to participate (Comoros, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia, Tanzania). The virtual format of the workshop also enabled participation of representatives from Burkina Faso, Cameroon, Ghana, Nigeria and South Africa. The representatives from ISA, including the LTC, the AU, the International Tribunal for the Law of the Sea (ITLOS), the Office of Legal Affairs of the Division for Ocean Affairs and the Law of the Sea (DOALOS) from the United Nations Secretariat and Norway also participated. Finally, several experts from Africa and more than 30 former ISA trainees from the African continent also attended the workshop.

Government representatives, experts from intergovernmental organizations, academia and the private sector presented in the following six sessions:

1. The governance structure and mandate of ISA
2. Increased regional and international cooperation in support of the sustainable development of Africa's blue economy
3. Prospection, exploration and exploitation on continental shelves and in the Area
4. Environmental management of deep seabed mineral resources
5. Management and dissemination of geological, mineral and environmental information
6. Enabling conditions for capacity-building opportunities for the African States

This workshop provided a unique forum where participants discussed and exchanged views on issues associated with implementing the legal regime to conduct exploration and exploitation on continental shelves and in the Area set by UNCLOS. It presented a unique opportunity for government representatives of the participating countries to identify key capacity-building needs at both national and regional levels. Recommendations were made to increase the participation of African States in activities undertaken in the Area and ensure that such activities could contribute effectively to support Africa's blue economy.



Mr. Gerald Mwila, Dr. Samuel Popoola and Mr. Godwin Dimike during their deployment to the ISA Secretariat under the ADSR National Experts Deployment Programme.



# Objectives of the ADSR project and the Mauritius workshop

## (i) Objective of the ADSR project

Africa is the world's second largest and second most populated continent. It covers approximately 30.3 million km<sup>2</sup> and is bordered by the Atlantic and Indian Oceans and the Mediterranean and the Red Seas. In fact, 38 of 54 countries in Africa are coastal States. Maritime zones under Africa's jurisdiction include about 13 million km<sup>2</sup> and approximately 6.5 million km<sup>2</sup> of the continental shelf.

The oceans and seas surrounding the African Continent include the wealth of natural living and non-living marine resources. This inspired a growing interest in the sustainable development of the African blue economy which is reflected in numerous policy papers and publications, such as the AU 2050 Africa's Integrated Maritime Strategy (AIMS) from January 2014, the United Nations Economic Commission for Africa (UNECA) "Africa's Blue Economy: A Policy Handbook" from March 2016, the African Charter on Maritime Security, Safety and Development (Lomé Charter) adopted by the African Heads of State in October 2016 and the AU 2019 Africa Blue Economy Strategy. It is anticipated that the ADSR project could strongly contribute to the discussions and achievements of Africa's blue economy in the context of the African Decade of Seas and Oceans (2015-2025) and the Agenda 2063: The Africa We Want, the strategic framework for the socio-economic transformation of the continent over the next 50 years, which expressly identifies "*exploration and beneficiation of deep-sea mineral*" as a key driver for the development

of Africa's blue economy.

ISA implements the ADSR project in partnership with the AU and NORAD. Activities are undertaken in close cooperation with States Parties to UNCLOS, relevant international and regional organizations and experts. In partnership with the AMDC, ISA has officially announced the launch of their Voluntary Commitment to foster cooperation to promote the sustainable development of deep seabed resources in support of Africa's blue economy at the UN Ocean Conference held in New York in June 2017 (#OceanAction16374). This Voluntary Commitment aims at raising awareness among the African States about the importance of opportunities associated with the development of Africa's continental shelf and increased participation of African nationals in exploration activities undertaken in the adjacent international seabed areas (the Area). This project is also intended to facilitate consultation among relevant actors to develop a dedicated strategy that will foster the enabling conditions for improved capacity-building opportunities for the continent and increased participation of African countries in activities undertaken in the Area.

Five workshops, one in each African region, are planned by the ADSR project to raise awareness among African decision-makers about the importance of the sustainable development of activities on the African's continental shelf and the Area carried out by African nationals. Beyond the fact that they provide opportunity to bring together international and African experts to discuss emerging issues associated with the work

of ISA and current activities undertaken in the Area, these workshops also represent a unique platform for decision-makers and experts to discuss strategies that could help African States to build necessary capacities to benefit fully from their blue economies, particularly by their increased participation in deep seabed activities undertaken in the Area.

All workshops are designed to bring together experts from the international legal and scientific community and government officials, regional and international organizations, researchers and private sector representatives. They are structured around key issues associated with UNCLOS and the work of ISA on marine mineral resources development and the protection and preservation of the marine environment from activities in the Area. One discussion was specially dedicated to identifying and proposing mechanisms for improving regional cooperation and participation of African countries in the deep seabed regime for the landlocked African countries.

## **(ii) Objective of the ADSR Mauritius workshop**

The Mauritius Workshop was the third workshop organized within the ADSR project. It took place between 1 and 3 June 2021. The first workshop took place in Abidjan, Cote d'Ivoire (October 2018) and the second in Pretoria, South Africa (May 2019). The main objective was to raise awareness among decision-makers from participating countries (Comoros, Kenya, Madagascar, Mauritius, Rwanda, Seychelles, Somalia and Tanzania) about the importance of sustainable development activities on Africa's continental shelf and in the Area. This workshop allowed discussion on capacity-building strategies that could help African States benefit fully from their blue economies, particularly in their increased participation in deep seabed exploration activities.

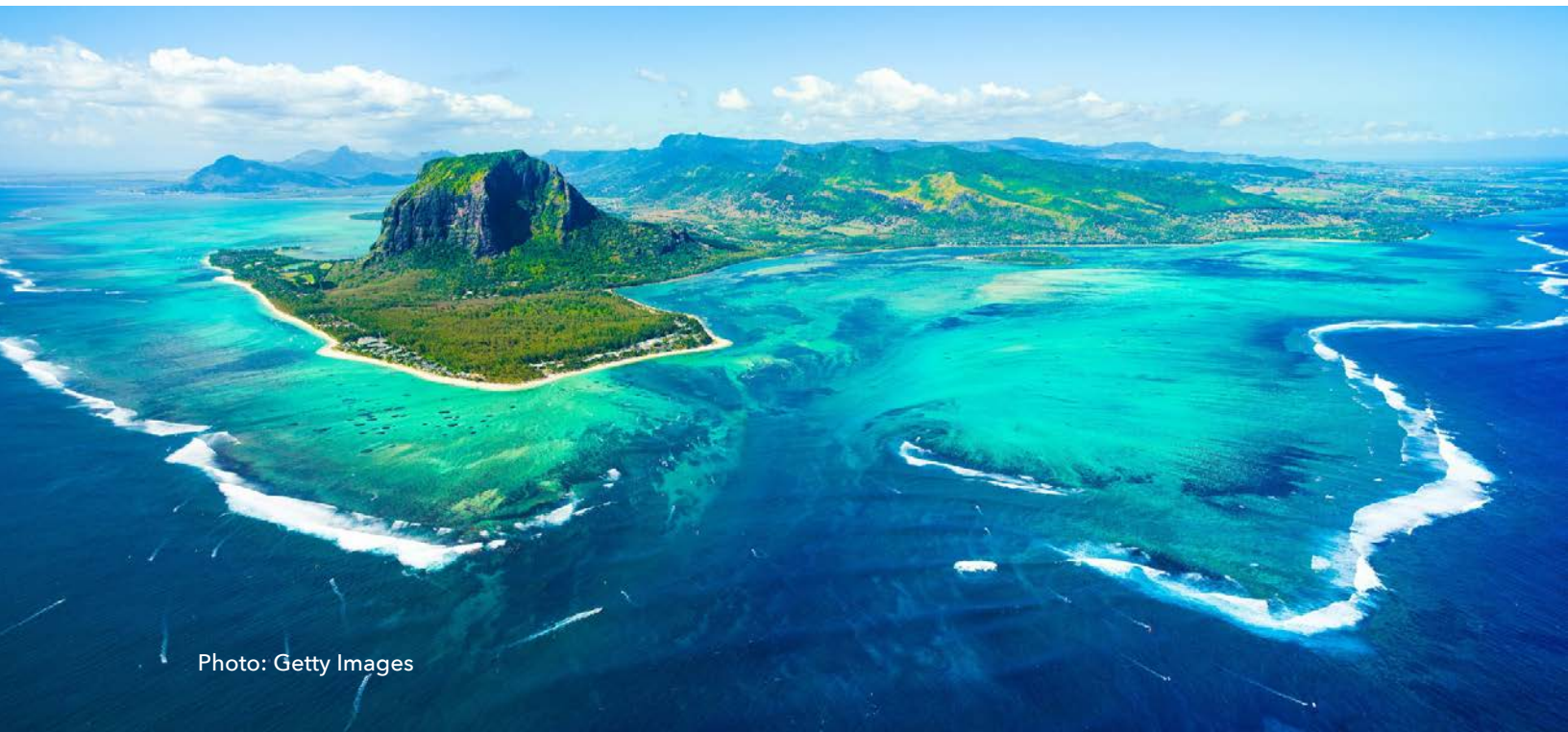


Photo: Getty Images



# Opening statements

## Welcome Address

H.E. Mr. Michael W. Lodge  
Secretary-General, ISA

## Opening Remarks

H.E. Mr. Jagdish D. Koonjul, G.C.S.K, G.O.S.K,  
Permanent Representative of the Republic of Mauritius to the United Nations

H.E. Mr. Albert Muchanga,  
Commissioner for Economic Development, Trade, Industry and Mining (ETIM), African Union  
Commission

Mr. Jens Frølich Holte,  
State Secretary, Ministry of Foreign Affairs, Norway



## Welcome Address by H.E. Mr. Michael W. Lodge, Secretary-General of the International Seabed Authority

Your Excellency, Ambassador Jagdish Koonjul, Permanent Representative of the Republic of Mauritius to the United Nations,

Your Excellency, Mr. Albert Muchanga, Commissioner for Economic Development, Trade, Industry and Mining of the African Union Commission,

Mr. Jens Frøhlich Holte, State Secretary at the Ministry of Foreign Affairs of Norway, Colleagues and friends of ISA

Ladies and gentlemen,

Greetings from Kingston, Jamaica. Welcome to the third workshop organized under the ADSR project to promote international and regional cooperation for the sustainable development of Africa's deep seabed resources in support of Africa's Blue Economy.

First and foremost, I wish to thank the Government of Mauritius for hosting this event today. I am sure I speak for everyone if I say that we would have loved to have been able to be in Mauritius today.

Nevertheless, it is a great pleasure to be able to organize this workshop in partnership with Mauritius and I trust that we will find another opportunity to cross the oceans and meet again soon.

Ladies and gentlemen,

African States make up 47 of the 168 Parties to the United Nations Convention on the Law of the Sea. This includes 38 coastal States whose maritime areas cover approximately 13 million square kilometres.

There has always been a close relationship between the International Seabed Authority and Africa. The Chair of the First Committee of UNCLOS III, which was responsible for Part XI of the Convention, was Paul Bamela Engo of Cameroon. Both the Presidents of the Preparatory Commission – Joseph Warioba of Tanzania and Jose Luis Jesus of Sao Tome and Principe – came from Africa.

My immediate predecessor as Secretary-General, Nii Allotey Odunton, came from Ghana. As of today, nine African States sit on the Council of ISA, including for the first time in 2021, Mauritius. Moreover, six African experts are members of the Finance Committee or the Legal and Technical Commission.

Nevertheless, despite this long-standing commitment of Africa to the work of ISA, Africa remains the only regional group that has not yet taken full advantage of the provisions of the Convention to take part in deep-sea mineral exploration.

This is one reason why, since taking office in 2017, I have made it a priority for ISA to seek to establish strategic partnerships with relevant international and regional organizations, such as the African Union, UNECA, the Indian Ocean Rim Association (IORA), the African Development Bank and the Organisation Internationale de la Francophonie in order

to better identify and respond to the specific needs of African States.

That is also why, in 2017, at the United Nations' Ocean Conference, ISA in partnership with the African Minerals Development Centre of the African Union, registered a Voluntary Commitment (#OceanAction16374) aimed at supporting the sustainable development of Africa's blue economy. The concept for this Voluntary Commitment emerged from a workshop held in early 2017 in Kampala, Uganda – the first workshop ever convened by ISA in a landlocked developing country.

Since then, our Voluntary Commitment has been translated into a project, known as the Africa Deep Seabed Resources Project (or ADSR project). The project is led by ISA and implemented in partnership with the African Union and the Government of Norway, through the Norwegian Agency for Development Cooperation (NORAD). I would like to express my sincere appreciation to Norway for its strong support for this initiative and to recognize State Secretary Holte, who will speak later this morning.

The ADSR project envisages five subregional workshops across the African continent. The first such workshop took place in Abidjan, Cote d'Ivoire, in October 2018. Not only was this a great success, but also it was another first time ISA held an activity in a Francophone country. The second workshop, aimed at southern African States, was organized in Pretoria, South Africa in May 2019. This third workshop was initially scheduled to take place in April 2020 but had to be postponed for obvious reasons. Although we had hoped we would be able to resume travel by now, we decided, in conjunction with the host government, that we should not delay any further.

I attach particular importance to this workshop as it has been designed to respond to the challenges faced by very different and



diverse countries. Three of the participating countries to this workshop are least developed countries, and two are also small island developing States. One is landlocked and one is not yet a member of ISA.

Against this background, the main objectives of the ADSR Project are threefold:

First, to better inform the decision-making processes of African States in relation to deep sea exploration, deep sea mineral resources and future mining.

Second, to strengthen the technical capacity of national experts, including women.

Third, to stimulate reflection and discussion that could result in recommendations to increase and improve the capacity of African nationals in deep sea exploration, marine scientific research and marine technology.

At the core of ISA's mandate is the dual responsibility to allow the sustainable development of the mineral resources of the deep seabed for the benefit of all humanity while at the same time ensuring protection and preservation of the marine environment. In recent years, the wealth of natural resources, including living and non-living marine resources, that are to be found in the oceans and seas surrounding the African Continent has generated growing interest.

The potential benefits that could be derived from sustainable development of deep seabed resources located on the continental shelves of African States and in the international seabed Area could be a key driver for the development of Africa's Blue Economy. This strategic linkage is clearly established by the African Union in its 2050 Africa's Integrated Maritime Strategy and Agenda 2063, and in the Africa Blue Economy Strategy.

What is clear is that the benefits for African countries of strengthening their engagement in the activities undertaken in the international seabed Area cannot be disputed. Scientific knowledge, of resources and environmental conditions, is fundamental to better management. It is only on the basis of such knowledge that clear-sighted decisions can be made.

For this reason, I expect that the implementation of our the ADSR project will contribute significantly to the regional and national development objectives set out by our Member States, especially in the context of the African Decade of Seas and Oceans.

I hope that the discussions over the next few days will lay the foundations of a strategy for African States, and in particular the landlocked and least developed countries, to make the best possible use of the opportunities available to them, and that were designed for their benefit, through the Part XI regime.

Before I conclude I would like to take this opportunity to celebrate the memory of two friends of ISA and two important figures in the implementation of the ADSR project who have sadly passed away recently.

First, Mr. Paul Msoma, from the African Minerals Development Centre, who came to Kingston in February 2020, and second, very recently, Colonel-major Tano, former director-general of the maritime administration of Cote d'Ivoire, who was a long-serving representative to ISA and had been instrumental in organizing the Abidjan workshop in 2018.

Both were extremely seasoned and experienced professionals, and the news of their deaths came as a shock for me and all my colleagues in ISA and beyond. Their significant contribution to the advancement

of the interests of the African Continent and their commitment to this project in particular will not be forgotten.

I wish you a successful and productive workshop and I very much look forward to the outcomes of your discussions.

Thank you.



**Opening Remarks by H.E.  
Mr. Jagdish D. Koonjul,  
G.C.S.K, G.O.S.K,  
Permanent Representative of  
the Republic of Mauritius to  
the United Nations**

Mr. Michael W. Lodge, Secretary-General  
of ISA

Distinguished Panelists and Participants  
Good morning and good afternoon.

On behalf of the Government of Mauritius,  
I wish you all a very warm welcome to this  
virtual workshop.

It would have been so much nicer to host  
you in person in Mauritius, unfortunately the  
pandemic has disrupted all our plans.

However, we are pleased that you are able to  
join us from different time zones to participate  
in the third Workshop on the Promotion of  
Sustainable Development of Africa's Deep  
seabed Resources (ADSR). This is indeed the  
miracle of technology.

I thank the ISA for taking this initiative and  
the Government of Norway for its valuable  
support without which this virtual workshop  
would not have been possible.

I am pleased to see the Norwegian State  
Secretary, Mr. Jens Holte, amongst us for  
which I personally thank him. Norway has  
always been in the forefront on matters  
concerning the oceans, be it oil exploration  
or mineral and marine resources exploitation.  
In fact, our program for this workshop  
includes a session on the Norwegian case  
study on exploration of mineral resources in  
its national jurisdiction.

The capacity building program that has been  
prepared for you is very comprehensive and is  
geared towards providing an understanding  
of the legal framework governing the  
exploration of resources in the high seas,  
the functioning of the International Seabed  
Authority as well as the exploration of mineral  
resources both in the national jurisdiction and  
the area for which the ISA holds responsibility.  
This is the third capacity building program  
that has been organized for the Africa region.  
This time the target participants come from  
the Indian Ocean region. In fact, all of you  
come from the eastern African region and  
island countries for which marine resources  
can play an enormous role in your respective  
economies.

Africa, which is already endowed with huge  
amounts of mineral resources on land,  
also has an equally rich potential of marine  
resources on the EEZ and the continental  
shelf of its coastal countries.

The 2050 Africa Integrated Maritime Strategy  
adopted in 2014 is aimed at coordinating





maritime policies of AU members, which is a priority goal for Africa's inclusive growth and sustainable development. I am pleased to see the AU Commissioner for Economic Development, Trade and Industry amongst us. He will surely speak in detail about this strategy in the area of Blue Economy.

Sustainable mineral extraction is therefore a new frontier not only in Africa but for the whole world.

Most of your countries have already established your EEZs and many of you have also made submissions to the CLCS for your extended Continental Shelf. Mauritius and Seychelles can pride ourselves for being the first mid ocean Small Island Developing States to have made a joint submission for the ECS in the Mascarene Plateau Region. Following the conferment of an area of 396,000 sq kms of ECS, Mauritius and Seychelles are now co-managing this area which is potentially rich in mineral and hydrocarbon resources.

This workshop can therefore be particularly useful for the participants of these 2 countries, as well as for all the participants with whom they can share their experience.

This workshop will also give you an opportunity to identify gaps in our administration. For example, engaging in mineral exploration resources does not only involve expertise in the sector but also capacity in establishing legal frameworks, contract negotiations with private companies and monitoring capability to ensure maximum benefit from such ventures.

I urge not only to listen to the magnificent pool of experts gathered for this purpose but also to ask pertinent questions and provide suggestions and comments which can make such workshops more interesting and more attuned to your needs.

I wish you a very fruitful and productive workshop.



## **Opening Remarks by H.E. Mr. Albert Muchanga, Commissioner for Economic Development, Trade, Industry and Mining (ETIM), African Union Commission**

Your Excellencies, Ministers responsible for Minerals Development in the Member States of the African Union here present;

Your Excellency Mr. Jens Frølich Holte, State Secretary of the Royal Norwegian Ministry of Foreign Affairs;

Your Excellency Mr. Michael W. Lodge, Secretary-General of the International Seabed Authority;

Your Excellency Mr. Jagdish D. Koonjul, Permanent Representative of the Republic of Mauritius to the United Nations;

Distinguished Workshop Participants,

Ladies, and Gentlemen.

I warmly greet each and every one of you.

The African Union Commission is happy to participate in this very important workshop. Accordingly, it is also appropriate that we thank the International Seabed Authority (ISA), under the dynamic leadership of Secretary General Mr. Michael W. Lodge, for organizing this virtual workshop focused on the Promotion of Sustainable Development of Africa's Deep Seabed Resources in Support to Africa's Blue Economy.

The partnership with the Royal Norwegian Ministry of Foreign Affairs is equally acknowledged and deeply appreciated. Right from the beginning, let me express my confidence that the outcome of this workshop will greatly contribute in advancing the inclusive, integrated, and sustainable socioeconomic transformation of the continent, one of the aspirations of the African Union Agenda 2063.

It is with this in mind that we warmly accepted the invitation to participate in this workshop.

The African Union Commission is undergoing institutional reforms, and consequently, realignment of functions and responsibilities.

The college of the new Commission, with a Chairperson, Deputy Chairperson and six Commissioners has been elected and installed.

We are now at the state of permanent placement of professional staff from Director General to the lower levels through a competitive process, taking into account regional and gender balance as well as national quotas. For the first time ever, we also have Junior Professional Officer positions in the new Commission. Africa is a young continent; it follows we should create positions for the African youth who wish to pursue careers in the African Union.

Still on the issue of the African Union institutional reform process, let me also say that we have six Departments of the reformed Commission. I come here representing the Department of Economic Development, Trade, Industry and Mining. It is through the overall focus on economic development and sector focus on minerals that this Department is mainly involved on matters of deep-sea mining to advance Africa's blue economy.

We also have the Department of Agriculture, Rural Development, Blue Economy, and Sustainable Environment (ARBE). This is the Department with overall policy focus on matters of the blue economy, and to this end, the Department developed and launched the Africa Blue Economy Strategy in October 2019. The Africa Blue Economy Strategy is comprehensive and incorporates the best international standards and practices in inclusive sustainable development, anchored on the blue economy.

Our Department is focusing on the Strategy Thematic Area number 4 which aims at unlocking sustainable energy, mineral resources, and industrial innovation for the accelerated prosperity of Africa. This role will be easy to perform because our new Department has Divisions on: Economic Policy and Sustainable Development; Trade; Economic Integration; Industry; Tourism; Innovation; Investment; Entrepreneurship; and, Mining- which also includes oil and gas. These Divisions, will, in various but aligned ways, assist us in the implementation of the Africa Blue Economy Strategy.

On 27th May, this year, we signed, with the Government of the Republic of Guinea, a Host Agreement for the African Minerals Development Centre (AMDC). This is a Specialized Agency of the African Union.



The African Minerals Development Centre has the key task of accelerating the implementation of the Africa Mining Vision and the Addis Ababa Declaration on Building a Sustainable Future for Africa's Extractive Industry. Work is currently underway to relocate the transition staff of the African Mineral Resources Development Centre from Addis Ababa to the permanent headquarters Guinea, Conakry.

I am sure we will closely work with the International Seabed Authority in supporting the operationalization of this planned centre of excellence. This would be good for the sustainable development of minerals in Africa. It would also be in line with the theme of the United Nations Oceans Conference which took place in New York from 5 to 9 June 2017; namely: "Fostering cooperation to promote the sustainable development of Africa's deep seabed resources in support to Africa's Blue Economy". The importance of cooperation is also anchored on the fact that thirty-eight (38) African countries are geographically placed along a coastline-the Continental shelf- with exclusive economic zones that can be exploited to benefit and develop not only those countries but the entire continent. This is because the African Union recognizes that sustainable protection and exploitation of the African maritime resources in a collaborative manner, offers huge possibilities for wealth creation, not only along this coastline, but also beyond into the international waters.

I will conclude by stating that the African Union Commission is looking forward to strengthening and consolidating the strategic partnership with the International Seabed Authority in deep-sea mineral resources development, marine scientific research and technology as well as specialized training of our young researchers.

I thank you all for your kind attention and look forward to reading the outcome document of this important workshop.



## **Opening Remarks by Mr. Jens Frølich Holte, State Secretary, Ministry of Foreign Affairs, Norway**

Excellencies, ladies and gentlemen,

Let me start by expressing my appreciation for the opportunity to speak with you today. I recently took up the position as the Norwegian Prime Minister's representative (sherpa) to the High-level Panel for a Sustainable Ocean Economy. In December, the Ocean Panel presented a new ocean action agenda, where effective protection, sustainable production and equitable prosperity go hand in hand.

The deep ocean floor contains minerals that are useful for renewable energy technologies and may contribute to the transition to a low-carbon society. However, we also need to be aware of the sensitivities of these ecosystems, our insufficient knowledge and our limited understanding of potential impacts of emerging ocean activities. We must continue to advance the application of the precautionary approach and protection of the environment with regard to all activities in the Area. Long-term benefits,

including long-term commercial benefits, are only possible within a framework that is environmentally sound and sustainable. This is the essence of the Ocean Panel's recommendations.

As deep seabed mining continues to evolve as an industry, we must ensure that everyone can benefit from these developments. No country should be left behind.

The International Seabed Authority was established in response to the groundbreaking notion that the deep-sea minerals in the Area constitute a common heritage of mankind. These valuable resources belong to all of us. Building capacity and sharing data and information are therefore central to our collective agenda to ensure that this wealth is indeed distributed equitably. Success in this endeavor will not only lead to a regime that ensures conservation and sustainable use of resources that should be shared by all for the benefit of all; it will also show the world that international cooperation based on mutual respect and benefit is possible.

The main purpose of the ADSR Project corresponds well with the mandate of ISA. It also corresponds with Norway's aim to cooperate with other states to make it possible to utilize rights and obligations under the United Nations Convention of the Law of the Sea (UNCLOS) to improve development. Norway is convinced that ISA's success is closely tied to the success of the UNCLOS and the institutional framework it established.

Cooperation and partnership between states that are in different stages of economic development and thus have unequal opportunities to thrive in this field need to be encouraged, both at the regional and global level. Sharing marine scientific research and data relating to seabed and minerals, engaging in collaborative research and training programmes and assisting countries to establish the necessary infrastructure are pivotal. It will also be critical to ensure that countries are capacitated to make use of the data, information and infrastructure available. Good capacity building strategies will therefore be key for this initiative. The project has already made it possible for young African experts to be seconded to ISA, to the joint benefit of both ISA and African states.

Finally, let me take this opportunity to confirm Norway's support to this initiative and to the ISA in general. Norway has been committed to the International Seabed Authority ever since its inception, something I also underlined in 2019 when I had the chance to take part in celebrating ISA's 25-year anniversary in Kingston. We are proud to have been part of an effort that has already achieved astonishing results. Norway will continue to assist in building capacity and competence in areas where Norway has particular expertise. I look forward to following the discussions over the next few days and wish you the best of luck.

Thank you.



## SESSION 1

# Governance structure and mandate of ISA

### PRESENTATIONS

#### Legal regime governing the exploitation of resources and preservation of the marine environment

*Mr. Vladimir Jares, Director, DOALOS*

#### The International Seabed Authority: structure and decision-making

*Mr. Yongsheng Cai, Senior Legal Officer, ISA*

#### The outer limit of the continental shelf in Africa: present situation and prospects

*Judge Maurice Kamga, ITLOS*

#### The mechanism of "reserved areas": overview and practical implications

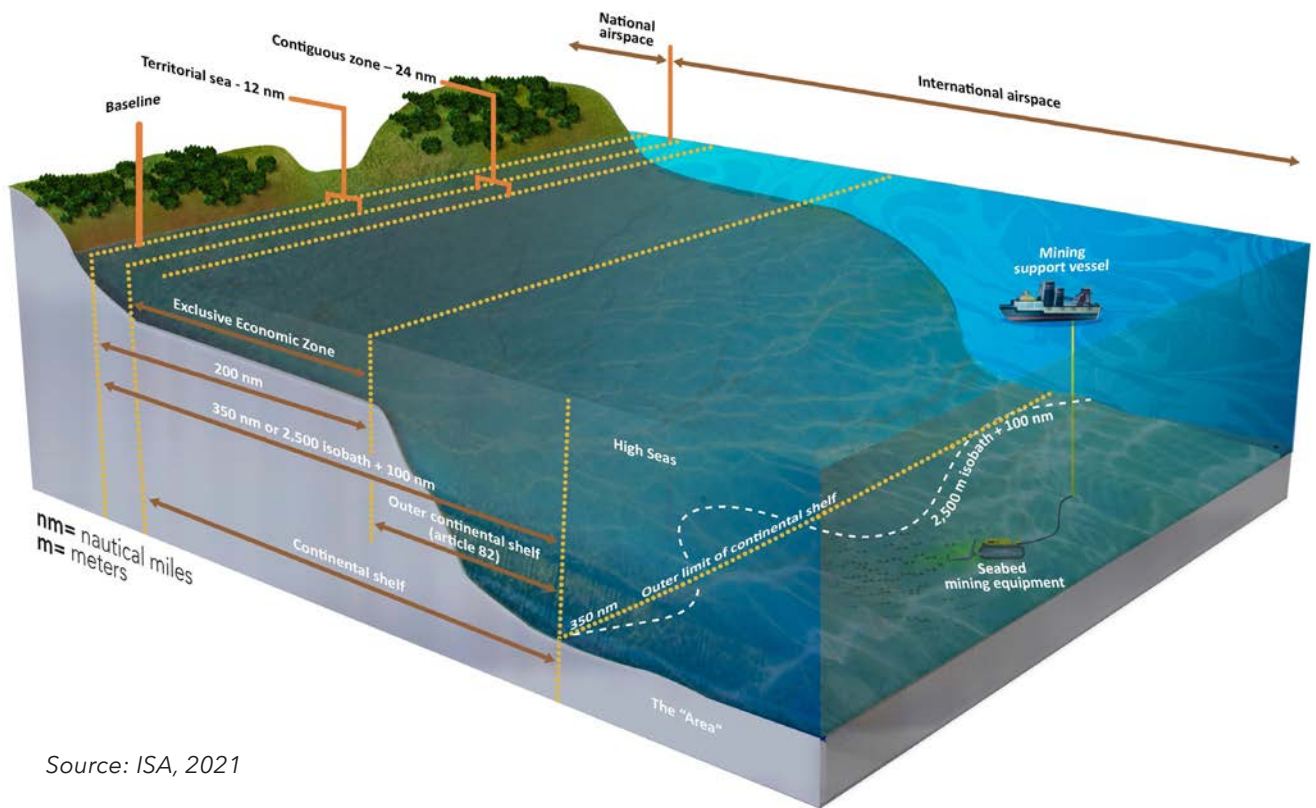
*Pr. Pedro Madureira, LTC, ISA, Portugal*

**Mr. Jares**, Director of DOALOS, presented on the legal regime governing the exploitation of resources and preservation of the marine environment. Mr. Jares provided an overview of States' different rights and obligations in various maritime zones and on the continental shelf. As to the exploitation of resources on the continental shelf, coastal States have exclusive sovereign rights both for the exploration of the continental shelf and the exploitation of their natural resources (**Figure 1**).

In cases where resources exploitation of the continental shelf takes place beyond 200 nm, UNCLOS provides for the payments and contributions to be equitably distributed among States Parties of UNCLOS through ISA. Recalling the provisions of UNCLOS in relation to the protection and preservation of the marine environment, Mr. Jares underscored that at the time of its adoption,

UNCLOS was considered as a fundamental international instrument establishing the most comprehensive and progressive international regime for the protection of the environment, being also the framework through which the concept of sustainable development has developed. Mr. Jares stressed that since then, UNCLOS has been complemented by several international instruments adopted at the global and regional levels. Mr. Jares also outlined the key principles confirmed and elaborated by the Advisory opinion issued by the Seabed Dispute Chamber of the International Tribunal of the Law of the Sea in 2011 (SDC, Advisory Opinion 2011) with a particular focus on the due diligence obligation of sponsoring States to ensure that activities carried in the Area comply with UNCLOS, the rules, regulations and procedures of ISA and the provisions of the contracts (**Figure 2**).


**Figure 1. Maritime zones under UNCLOS**




Source: ISA, 2021

**Figure 2. Due diligence obligation of sponsoring States**

**2011 Advisory Opinion of the Seabed Disputes Chamber**




Due diligence obligation of sponsoring States to ensure that activities in the Area are conducted in compliance with UNCLOS, the ISA's rules and regulations, and the exploration contract.



To perform the due diligence obligation, sponsoring States must apply or carry out:

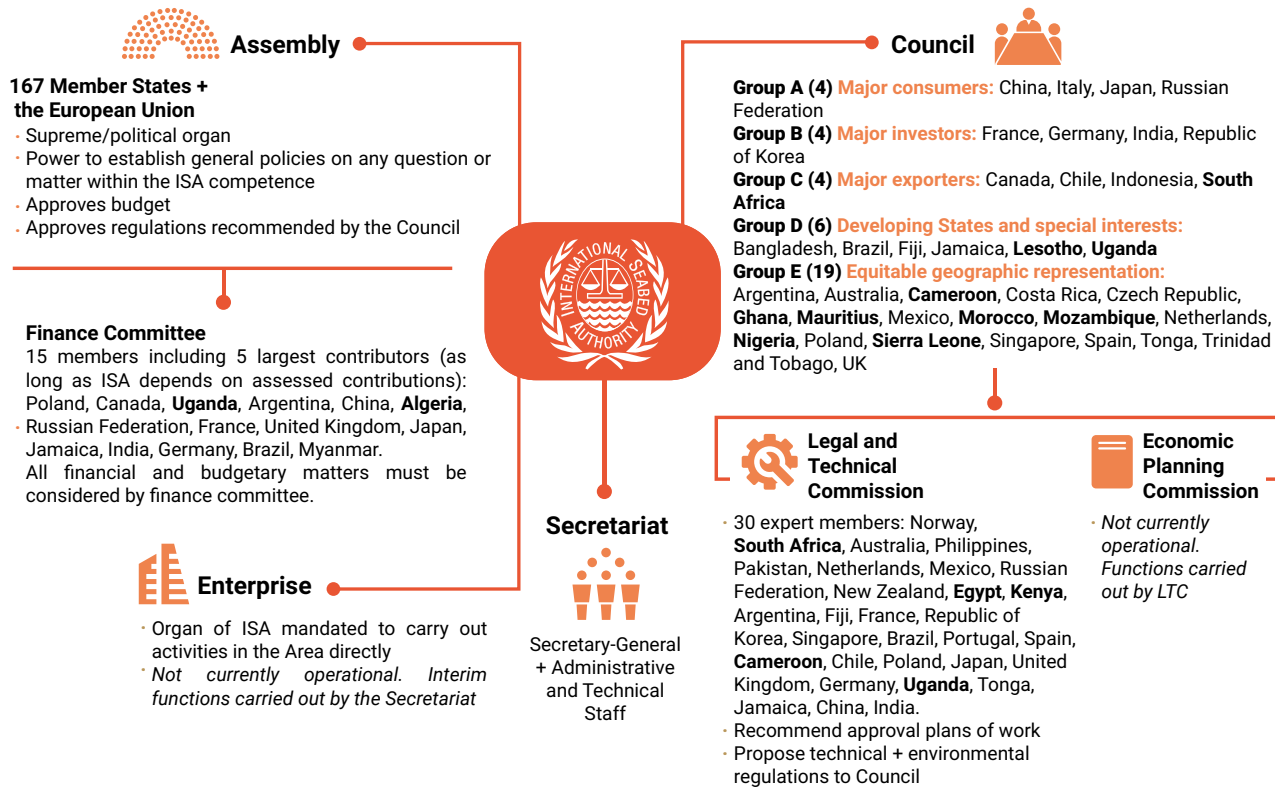
- The precautionary approach
- Best environmental practice
- Environmental Impact Assessment



Standard of due diligence not differentiated for developing sponsoring States

Source: ISA, 2021

Figure 3. ISA governance structure



Source: ISA, 2021

Mr. Jares concluded his presentation by bringing to the attention of participants the General Assembly resolution 72/249 of 24 December 2017, concerning the convening, under the auspices of the United Nations, of an Intergovernmental Conference to elaborate the text of an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, with a view to developing the instrument as soon as possible, and highlighting the package of issues under discussion in the context of that Conference.

**Mr. Cai**, Senior Legal Officer at ISA, presented on the structure of ISA and the decision-making procedure applicable to each organ of ISA (Figure 3).

Mr. Cai elaborated on three principal organs of ISA: the Assembly, the Council and the

Secretariat detailing their powers, roles and specificities in matters concerning the election of members, the approval of the budget and delivery of the rules, regulations and procedures relating to prospecting, exploration and exploitation in the Area, including their subsidiary organs. As a general rule, decision-making in the Assembly operates by consensus. This has been the practice of the Assembly since its first session. According to the Rules of Procedure of the Assembly, if all efforts to reach a decision by consensus have been exhausted, decision by voting in the Assembly on questions of procedure shall be taken by a majority of Members present and voting, and decision on questions of substance shall be taken by a two-thirds majority of Members present and voting. Mr. Cai then stressed the main features and responsibilities of the Council as the executive organ of ISA. Its primary

function is to supervise and coordinate the implementation of Part XI of UNCLOS on all matters within the competence of ISA. The Council is composed of 36 members elected by the Assembly, divided into five Groups (A, B, C, D and E)<sup>1</sup>. Mr. Cai explained that members are elected for a four-year term, with elections for one-half of them taking place every two years. As for the Assembly, as a general rule, decision-making in the Council operates by consensus, which has been the practice of the Council since its first session. For voting purpose, each Group A, B, or C shall be treated as a chamber, and the developing States under Groups D and E shall be treated as a single chamber. If all efforts to reach a decision by consensus have been exhausted, decision will be made by voting in the Council on questions of procedure shall be taken by a majority of members present and voting, and decisions on questions of substance, except where the Convention provides for decisions by consensus in the Council, shall be taken by a two-thirds majority of members present and voting provided that such decisions are not opposed by a majority in any one of the voting chambers. The presenter then highlighted the role and responsibility of the Secretariat headed by the Secretary-General. Mr. Cai also detailed the main functions of the existing subsidiary organs respectively, the Finance Committee as a subsidiary organ of the Assembly comprising 15 members (including two from Africa), and the Legal and Technical Commission (LTC) as a subsidiary organ of the Council comprising 30 elected members (including five members from Africa). The Finance Committee is responsible for drafting financial rules, regulations and procedures; assessing contributions of Members to the administrative budget of the Organization;

proposing and administration of budget; drafting rules, regulations and procedures on the equitable sharing of financial and other economic benefits derived from activities in the Area. The most important functions of the LTC include consideration of application for approval of plans of work, and make recommendations to the Council, formulating rules, regulations and procedures relating to prospecting, exploration and exploitation, and submitting to the Council for its consideration and adoption, issuing recommendations for the guidance of Contractors in relation to their activities, supervising activities in the Area, in particular by review of annual reports submitted by the Contractors, and providing advice to the Secretary-General regarding periodic reviews, assessing the environmental implications of activities in the Area and making recommendations to the Council on the protection of the marine environment, including establishment of regional environmental management plans (REMPs). The presenter reminded participants that until it becomes operational, the functions of the Enterprise are performed by the Secretariat. Similarly, the functions of the Economic Planning Commission is being performed by the LTC until the Council decides otherwise or until the approval of the first plan of work for exploitation.

**Judge Kamga** of ITLOS presented on status and prospects of the outer limit of the continental shelf in Africa through a brief overview of the different maritime zones and the continental shelf defined under UNCLOS with a specific focus on Article 76 which provides a complex series of formulae for establishing the outer limit of the continental shelf (**Box 1**).

<sup>1</sup> Group A consists of, four members representing largest consumers; Group B has, four members representing major investors; Group C has, four members representing land-based producers; Group D has, six members from among developing Member States representing special interests; and Group E has, 18 members elected according to the principle of ensuring an equitable geographical distribution of seats in the Council as a whole.



**Box 1: Article 76 of UNCLOS**

1. The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.
2. The continental shelf of a coastal State shall not extend beyond the limits provided for in paragraphs 4 to 6.
3. The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.
4. (a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:
  - (i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or
  - (ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.(b) In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.
5. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a) (i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.
6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.
7. The coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude.
8. Information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf set up under Annex II on the basis of equitable geographical representation. The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding.
9. The coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf. The Secretary-General shall give due publicity thereto.
10. The provisions of this article are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts.



Aerial view of Senya beraku in Ghana - Lapping.  
Photo: Pixabay.

Judge Kamga recalled that around 25 coastal States had made submissions for an ECS to the CLCS in the African continent highlighting the interest of the African continent in establishing the outer limit of the continental shelf despite the geographical constraints relating to the limited distance to the European coast in the Mediterranean Sea and the Asian coast in the Red Sea. Almost all African coastal States eligible for an ECS have made at least one relevant submission to the CLCS. Judge Kamga indicated that the CLCS had made recommendations on submissions by five African coastal states (Cote d'Ivoire, Ghana, Mauritius/Seychelles, Seychelles and mainland South Africa). The CLCS has generally endorsed the claims made by those States; 20 individual or joint submissions by African coastal States are still pending and it may take several years before the CLCS finalizes them. Although the full text of the CLCS recommendations is kept confidential, the summaries of recommendations are duly made available to the public. Summaries identify four key points examined by the CLCS: (i) ISA to consider the submission (ii) the geological

and geographical description of the region concerned (iii) the natural prolongation of the landmass of the coastal State (iv) the determination of the location of the foot of the continental slope, outer edge of the continental margin and the outer limits of the continental shelf. Following the finalization of the outer limit of their continental shelf, the African States will have to secure their extended continental shelves and the resources it contains. This can be done through the establishment of maritime boundaries in the areas of overlapping extended continental shelves, by diplomatic or judicial means, exploring the possibility of joint exploitation of their extended continental shelves, especially for those States which made joint submissions to the CLCS and the preparation to make potential payments and contributions concerning the exploitation of ECS in accordance with Article 82 of UNCLOS.

The first session ended with a presentation by **Pr. Pedro Madureira**, member of the LTC, who presented an overview on the mechanism and practical implications of the 'reserved areas' established in the Area pursuant to UNCLOS and the 1994 Agreement. In his introduction, Prof. Madureira recalled the influential role played by the Ambassador of Malta, Arvid Pardo, in 1967 before the General Assembly of the United Nations which subsequently led to the adoption of the Resolution 2749 (XXV) on the Declaration of Principles Governing the Seabed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction and through which the seabed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction, as well as its resources, were identified as the 'common heritage of mankind'. On this basis, the international community then agreed that the exploration that will take place in the Area and later the exploitation of its resources shall be carried out for the benefit of mankind as a whole, taking into particular consideration the inte-

rests and needs of the developing countries. The presenter also recalled that during UNCLOS III, different interests opposed industrialized and developing States. The latter favoured a system whereby, an international organization would have the exclusive right to exploit the resources of the Area. Conversely, the former considered that this right should be given to private entities. A third view, which envisaged the creation of the so-called 'parallel system,' was adopted as a way out of the deadlock represented by the other extreme positions. Under this compromise, activities in the Area could

be performed through the Enterprise (or in conjunction with developing States) and either individual (natural or juridical) or State enterprises. In such a case, when applying for a contract for exploration or exploitation in the Area, some States advocated that there should be the obligation to present to ISA two alternative areas with 'equal' estimated commercial value. One of them will be selected by ISA itself to conduct activities through the Enterprise or in association with developing States. The 'parallel system' was eventually reflected in UNCLOS (**Box 2**) notwithstanding the fact that important pro-

### **Box 2: System of exploration and exploitation in the Area - the "parallel system" (Article 153 of UNCLOS)**

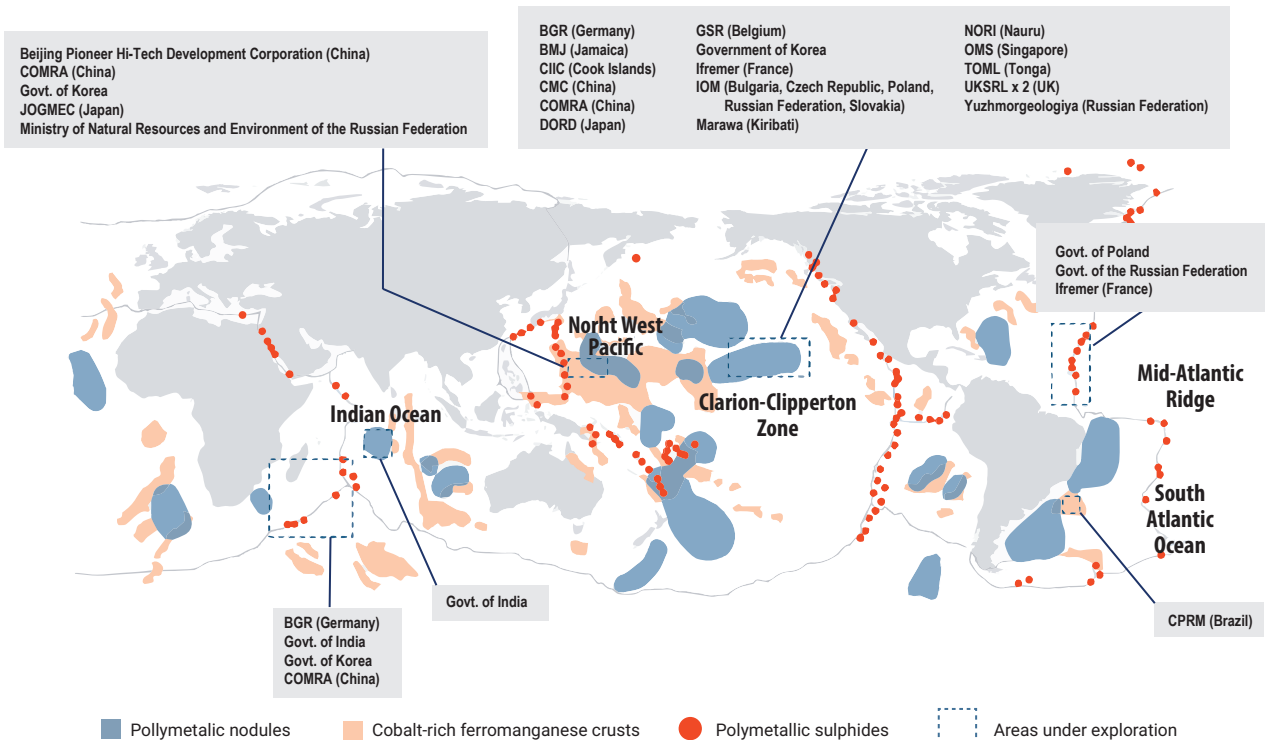
1. Activities in the Area shall be organized, carried out and controlled by ISA on behalf of mankind as a whole in accordance with this article as well as other relevant provisions of this Part and the relevant Annexes, and the rules, regulations and procedures of ISA.
2. Activities in the Area shall be carried out as prescribed in paragraph 3:
  - (a) by the Enterprise, and
  - (b) in association with ISA by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, when sponsored by such States, or any group of the foregoing which meets the requirements provided in this Part and in Annex III.
3. Activities in the Area shall be carried out in accordance with a formal written plan of work drawn up in accordance with Annex III and approved by the Council after review by the Legal and Technical Commission. In the case of activities in the Area carried out as authorized by ISA by the entities specified in paragraph 2(b), the plan of work shall, in accordance with Annex III, article 3, be in the form of a contract. Such contracts may provide for joint arrangements in accordance with Annex III, article 11.
4. ISA shall exercise such control over activities in the Area as is necessary for the purpose of securing compliance with the relevant provisions of this Part and the Annexes relating thereto, and the rules, regulations and procedures of ISA, and the plans of work approved in accordance with paragraph 3. States Parties shall assist ISA by taking all measures necessary to ensure such compliance in accordance with article 139.
5. ISA shall have the right to take at any time any measures provided for under this Part to ensure compliance with its provisions and the exercise of the functions of control and regulation assigned to it thereunder or under any contract. ISA shall have the right to inspect all installations in the Area used in connection with activities in the Area.
6. A contract under paragraph 3 shall provide for security of tenure. Accordingly, the contract shall not be revised, suspended or terminated except in accordance with Annex III, articles 18 and 19.

visions related to it, such as the Enterprise, the transfer of technology and the review conference, were downgraded by the 1994 Agreement.

As of June 2021, despite 31 contracts for exploration signed with ISA, none of the sponsoring States were from Africa (Figure 4). The presenter then stressed that for developing States, too often, this mechanism offered by the 'parallel system' was not effectively used. Such a system provides for the existence of reserved areas, which current ISA contractors have already surveyed to accomplish the preliminary estimation of its commercial value. The reserved areas contain seabed mineral resources for which commercial value has been preliminarily estimated and certified as being similar to an area currently under

exploration through a contract signed with ISA. ISA itself does this assessment. Section II of Annex II to the regulations on prospecting and exploration for mineral resources in the Area<sup>2</sup> requires the applicant to provide sufficient information to enable the Council to designate a reserved area, including, *inter alia*, data on the location, surveys and evaluation of the specific mineral resource in the areas, geological and physical properties, abundance (for polymetallic nodules), thickness (for polymetallic sulphides and cobalt crusts), tonnage, average grade, and used techniques. In conclusion, Prof. Madureira indicated that more than 810,000 km<sup>2</sup> available reserved area for Polymetallic Nodules and 3,000 km<sup>2</sup> for Cobalt crusts might provide an opportunity to promote the effective participation of members of the African group in the Area.

**Figure 4. Exploration contracts in the Area (June 2021)**



Source: ISA, 2021

<sup>2</sup> ISBA/19/C/17; ISBA/16/A/12 Rev. 1; ISBA/18/A/11



## SESSION 2

# Increased regional and international cooperation in support of the sustainable development of Africa's blue economy

**Africa Mining Vision and contribution of deep seabed exploration and exploitation to the development of Africa's blue economy**

*Dr. Frank Mugenyi, Interim Coordinator, AMDC, AU*

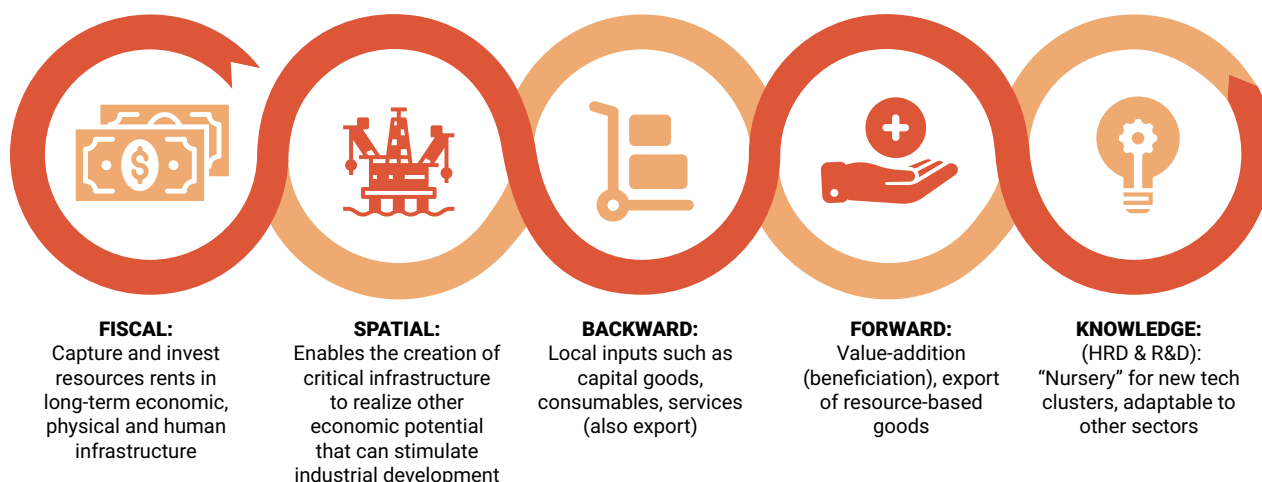
**Importance of deep seabed exploration to support the development of national blue economy: the case of Mauritius**

*Dr. Dass Bissessur (Director Hydrocarbon / Mineral Exploration Unit) and Dr. Beenesh Motah, (Director - Hydrocarbon/Mineral Production Unit) of the Department for Continental Shelf, Maritime Zones Administration and Exploration, Prime Minister's Office, Mauritius*

**Dr. Mugenyi**, the AMDC Interim Coordinator, focused on the Africa Mining Vision (AMV) and the contribution of deep seabed exploration and exploitation to the development of Africa's blue economy highlighting the positive contribution that the exploitation of minerals and other natural resources could have on economic growth if sustainably done. However, as of today Africa's abundant mineral resources are not contributing equitably and effectively towards improving the living conditions of its populations yet. Dr. Mugenyi recalled that the AMV aims to attain transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development. In 2009, the African Heads of State and Government adopted the AMV which was conceived as a means to facilitate a *"knowledge-driven African mining sector that catalyzes and contributes to the broad-based growth and development, and is fully integrated into, a single African market."* This could be done through (i) downstream linkages into

mineral beneficiation and manufacturing (ii), upstream linkages into mining capital goods, consumables and service industries, (iii) side-stream linkages into infrastructure (power, logistics, communications, water) and skills and technology development (human resource and research and development), (iv) mutually beneficial partnerships between the States, the private sector, civil society, local communities and other stakeholders and (v) a comprehensive knowledge of mineral endowment. The AMV was intrinsically based on the notion that Africa's mineral comparative advantage would build competitive advantages and unleash structural economic transformation towards knowledge-driven economies. Anchored in the understanding that mineral resources are part of the stock of natural capital that can spur Africa's development, the AMV thrives on creating the enabling condition for the African continent to transform transient mineral wealth into other forms of lasting capital which outlive the currency of mining (**Figure 5**).

**Figure 5. Africa's opportunities based on the maximization of the five resources linkages**

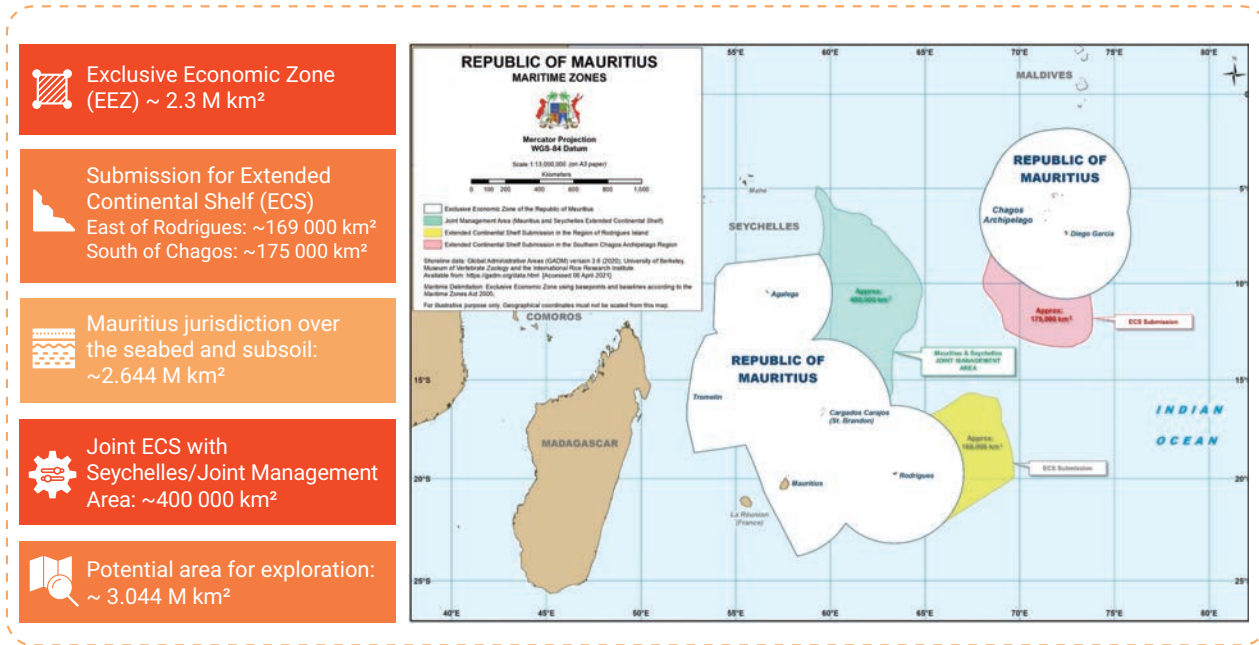


Source: FM, 2021

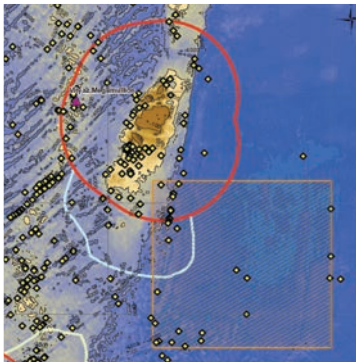
In 2013, AU members established the AMDC as a specialized agency to operationalize this vision. It was formalized in January 2016, when the AU Heads of State formally adopted the statutes of AMDC. In July 2018, they selected the Republic of Guinea as the host country of the AMDC Secretariat and signed the Host Agreement on 27 May 2021. As per the 2050 AIMS, the 2016 Lomé Charter, the AU Agenda 2063, the Africa We Want and the Africa Blue Economy Strategy, the African continent's aquatic and marine resources, including oceans, seas, rivers and lakes are considered as fundamental for the development of the blue economy. Coupled with the identification of deep seabed mining as an important driver for this transformation, the AMDC will increase its activities towards several strategic objectives, including: (i) the development of deep seabed and seawater mining production to meet demand and achieve economic prosperity, (ii) the creation of conducive regulatory frameworks for deep-sea exploration and (iii) the development of capacity-building and technology transfer mechanisms.

**Dr. Bissessur** and **Dr. Motah** provided an overview of the work undertaken by Mauritius in relation to the exploration of its seabed mineral resources in support of the development of the national blue economy. Mauritius was giving vital importance to the development of its ocean economy and identified, as an emerging economic driver, opportunities offered by the sustainable development of its marine natural resources, including the deep-sea mineral sector. Mauritius's EEZ covers 2.3 million km<sup>2</sup> potentially covering an area of 3,044 million km<sup>2</sup> with an ECS area. High-quality polymetallic nodules (PMN) had been identified within the Mauritius EEZ and ECS which indicates an overlap with the Indian Ocean nodule field in the Chagos area (central Indian Ocean basin south of the Chagos Archipelago). In the west of Chagos Archipelago, an active hydrothermal vent has also been identified, leading to seafloor massive sulfide deposits (SMS) within the Mauritius EEZ also identified within the Mauritian EEZ and potential continental shelf in the Rodrigues region along the Central Indian Ridge. Although seamounts were identified across all regions,

**Figure 6. Mineral deposits within Mauritius EEZ (Nath and ShyamPrasad (1991), Mukhopadhyay et al. (2003), Bissessur et al., (2012))**

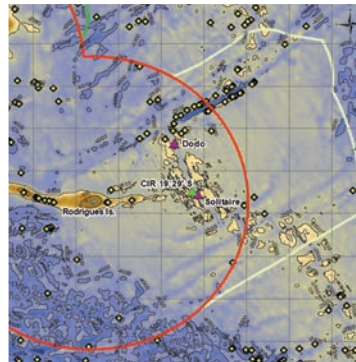


**Mineral deposits sites in the Chagos Area**



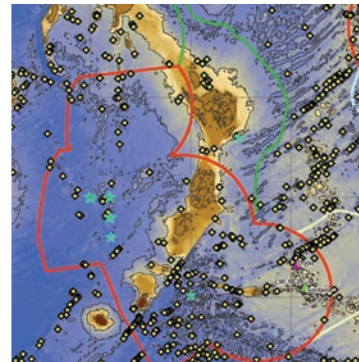
- Presence of PMN in Indian Ocean Nodules Field (IONF), South of Chagos Archipelago (within EEZ and ECS)
- Presence of SMS deposits at hydrothermal vent field (Vityaz Megamullion), West of Chagos along the Central Indian Ridge (CIR) within EEZ
- Possible presence of CFC on seamounts

**Mineral deposits sites in the Rodrigues Area**

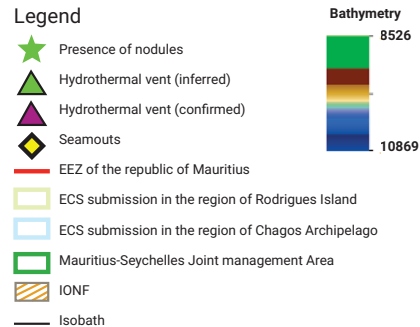


- Presence of SMS at two hydrothermal vent fields discovered east of Rodrigues Island along the CIR (within EEZ): Dodo Vent field and Solitaire Vent field.
- Presence of SMS at more hydrothermal vent fields along the CIR (outside of EEZ)
- Possible presence of CFC on seamounts

**Mineral deposits sites in the Mascarene Basin**



- Presence of PMN confirmed
- Possible presence of CFC on seamounts



Source: DM & BM, 2021





the potential presence of cobalt crust (CFC) is yet to be determined (Figure 6).

Considering the existing and potential mineral resources under Mauritius' maritime jurisdiction and immediate areas located beyond the Area, there is a possibility of an emerging seabed minerals sector in the region. It is critically important to develop a strong legal framework, sound technical knowledge/skills and important financial investment as necessary pre-requirements. Mauritius was engaged in developing new administrative and legal frameworks that will include the process for conducting prospection, exploration and eventually extraction of seabed minerals. The

Government of Mauritius, in collaboration with the Commonwealth Secretariat, has developed two separate Seabed Minerals Bills to provide for management of seabed mineral activities within the maritime zones of Mauritius and in the Area (Figure 7).

As to the challenges faced by Mauritius, there is a need for financial capacity to support mineral activities and the safeguard of the marine environment, expertise, technology and research vessel to undertake deep-sea marine resource surveys, evaluation of mineral prospect in national waters and the need to strengthen national institutional capacity associated with the implementation of recommended regulatory regime.

**Figure 7. Exploration contracts in the Area of the Indian Ocean**

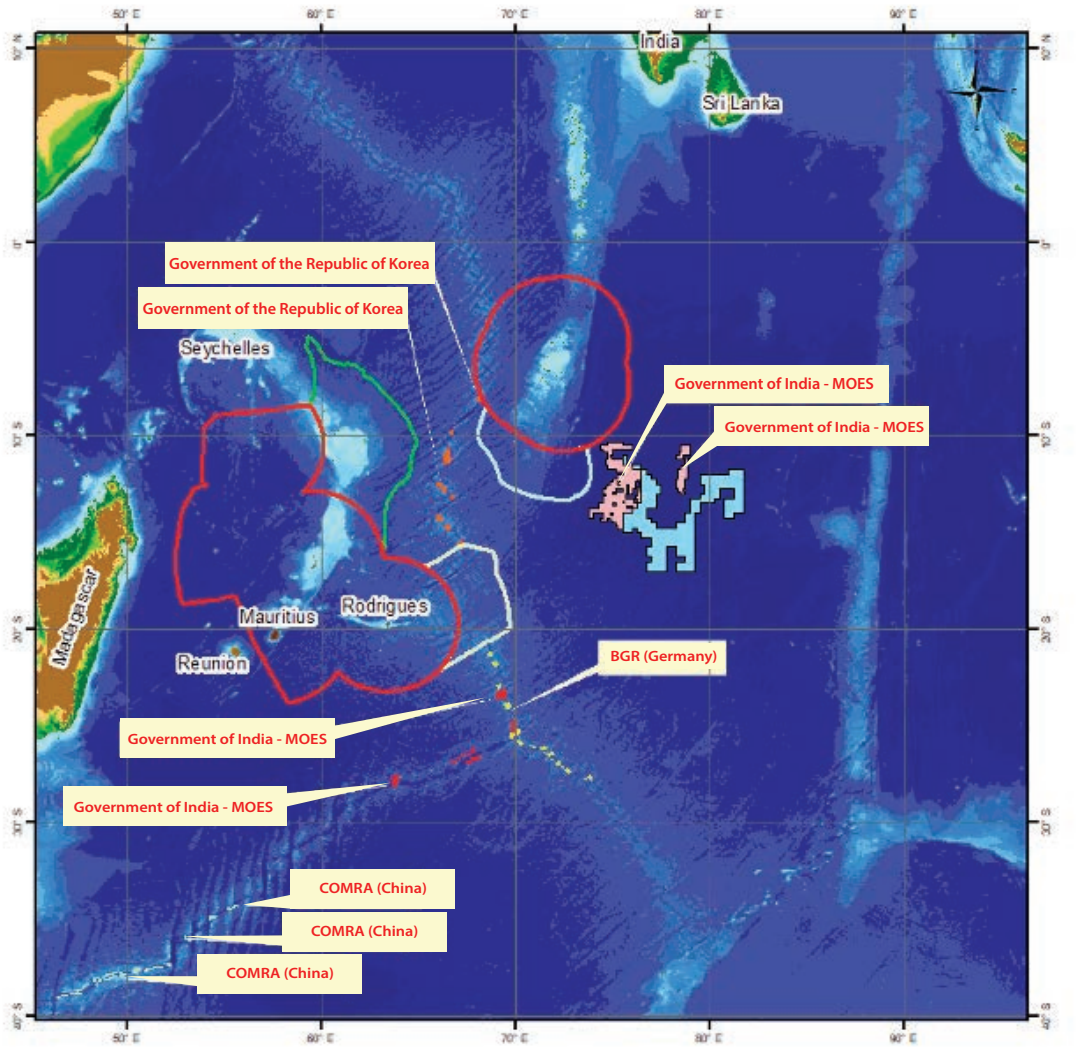
Minerals		
Country	PMN	SMS
 China		South West Indian Ridge
 Germany		Central Indian Ridge and South East Indian Ridge
 India	Central Indian Basin	Central Indian Ridge and South West Indian Ridge
 Korea		Central Indian Ridge













Source: DB & BM, 2021





**Figure 7. Exploration contracts in the Area of the Indian Ocean (continued)**



- |   |   |   |  |
|---|---|---|--|
|  | Exploration Areas for Polymetallic Nodules  |  | Exclusive Economic Zone of the Republic of Mauritius |
|  | Polymetallic Nodules Reserved Areas         |  | Mauritius-Seychelles Joint Management Area           |
|  | Exploration Area for Polymetallic Sulphides |  | ECS submission in the region of Rodrigues Island     |
|  | Contractor                                  |  | ECS submission in the region of Chagos Archipelago   |
|  | BGR (Germany)                               |   |  |
|  | COMRA (China)                               |   |  |
|  | Government of India - MOES                  |   |  |
|  | Government of the Republic of Korea         |   |  |

Data source:  
 Background grid - GEBCO Compilation Group (2020)  
 GEBCO 2020 Grid (doi: 10.5285/a29c5465-b138-234d-e053-6c86-abc040b9); Esri, Digital/Globe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA,USGS, AeroGRID, IGN and the GIS User Community  
 Exploration areas - International Seabed Authority, 2020 - <https://www.isa.org.jm/minerals/maps> (Accessed on 24 May 2021)

Source: DB & BM, 2021

## SESSION 3

# Prospection, exploration and exploitation on continental shelves and in the Area

### PRESENTATIONS

**Exploration of mineral resources in national jurisdiction: a case study about Norway**

*Dr. Sissel Eriksen, Senior Geologist, Norwegian Petroleum Directorate, Norway*

**Mineral resources of the Area and current status of marine mineral technology**

*Dr. Harald Brekke, Chair of the LTC, ISA, Norway*

**Role and responsibilities of sponsoring States**

*Mr. Thembile Joyini, Vice-Chair of the LTC, ISA, South Africa*

**The legal framework for activities in the Area: transitioning from exploration to exploitation**

*Mr. Nathan Eastwood, Legal Officer, ISA*

**Role of ISA in ensuring the equitable sharing of financial and other economic benefits from DSM**

*H.E. Mr. Michael Lodge, Secretary-General, ISA*

**Independent operation of the Enterprise: perspectives and challenges**

*Mr. Eden Charles, Special Representative of the ISA Secretary-General for the Enterprise*

**Dr. Eriksen** presented on exploration of mineral resources within the national jurisdiction of Norway. In 2019, the Norwegian Parliament enacted the Norwegian Seabed Minerals Act, which provides the regulatory framework to carry out activities in the EEZ, making mandatory to undertake an opening process before exploration putting the Norwegian Ministry of Petroleum and Energy in charge. The opening process itself consists of two elements: impact assessment and resource assessment; the program for the impact assessment was published in 2021. The Norwegian Petroleum Directorate (NPD), a technical expert body of the Norwegian Ministry of Petroleum and

Energy, is tasked with the impact assessment on environmental, industrial, economic and social impacts of mineral activities and resource assessment, including through mapping and resource estimations. Different parts of the opening process and the data acquisition from the last three NPD cruises have also been discussed. In 2018 and 2019, the focus was on geophysical data-collection using autonomous underwater vehicles (AUVs). Cruises undertaken in 2019 and 2020 pioneered the use of certain technologies to collect data; presentation was concluded with an overview of the preliminary results (**Figure 8**).

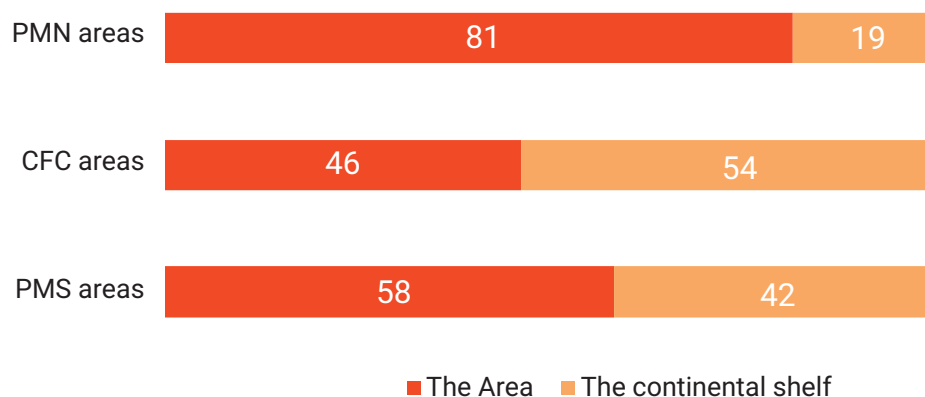
**Figure 8. Use of AUVs during the NPD cruise in 2019**

**Dr. Brekke**, current Chair of the LTC, focused on the mineral resources of the Area and the current status of marine mineral technology. The implementation of UNCLOS led to the development of claims on continental shelves by coastal States over covering approximately 45% of the total seabed of the world ocean; the remaining 55% constitutes the Area managed by ISA. Studies indicate that approximately 80% of the nodule resources, 46% of the crust resources and 60% of the sulphide resources lie within the Area (**Figure 9**).

The interest in marine scientific research (MSR) and exploration for these seabed minerals could be traced to the 1970s,

before UNCLOS was adopted. Since then, exploration technology has seen substantial improvements. Bathymetry and geophysical data that were acquired from surface vessels (ships) in the past are now increasingly acquired by underwater robots (remotely operated vehicles and AUVs) equipped with a suite of sensors. A sampling of rocks and minerals from the seabed, traditionally done by grabbing and dredging, is increasingly performed by robots and modern drilling technology. Whereas there had been no exploitation of seabed minerals anywhere in the world, the development and testing of exploitation technology have been under development for many years as some pilot technology was tested in different locations.

**Figure 9. Percentage of favorable mineral areas in the Area and the continental shelf**



Source: HB, 2021

The exploitation regulations are nearing completion and therefore it is expected that the development of exploitation technology will keep its momentum.

**Mr. Joyini**, Vice-Chair of the LTC, provided an overview of the role and responsibilities of sponsoring States. UNCLOS provides the enabling conditions for private entities to engage in activities in the Area provided that a State Party sponsors them to UNCLOS. This 'sponsorship' is important because it is the medium through which any sponsoring State exercises control over the contractor by requiring it to comply with the provisions of UNCLOS. Most elements about the sponsoring State's responsibilities, the extent of its liability and the measures the sponsoring State take to fulfill its obligations in light of the particular requirement for sponsorship were clarified by the ITLOS SDC Advisory Opinion of 2011. The Chamber's findings on State responsibility and the precautionary approach present significant additions to the opinio juris of international environmental law following the verdict of the International Court of Justice in the Pulp Mills case. The damage caused by the sponsored contractor would not automatically result in the liability of a sponsoring State. Its liability for failure

to comply to its due diligence obligations requires the establishment of a causal link between such a failure and such a damage. Measures taken by a State to fulfill its responsibilities must include laws to ensure environmental due diligence.

**Mr. Eastwood**, Legal Officer at ISA, focused on key elements of the existing and the developing legal framework to regulate activities in the Area and enable future exploitation of seabed mineral resources in the Area. Mr. Eastwood recalled the fundamental principles of the legal regime of the Area contained in UNCLOS (**Box 3**) and detailed different components of the ISA's Mining Code and provided an overview of the main components of the exploration regulations and the current status of the draft exploitation regulations<sup>3</sup> (**Figure 10**).

Participants were recalled that the draft regulations on exploitation were issued by the LTC to the Council in March 2019 and then opened for stakeholder consultation in December 2019. The draft exploitation regulations were then revised, considering the various comments received from the stakeholders.<sup>4</sup> Mr. Eastwood noted that three key thematic issues emerged from

<sup>3</sup> ISBA/19/C/17, ISBA/16/A/12 Rev. 1, ISBA/18/A/11.

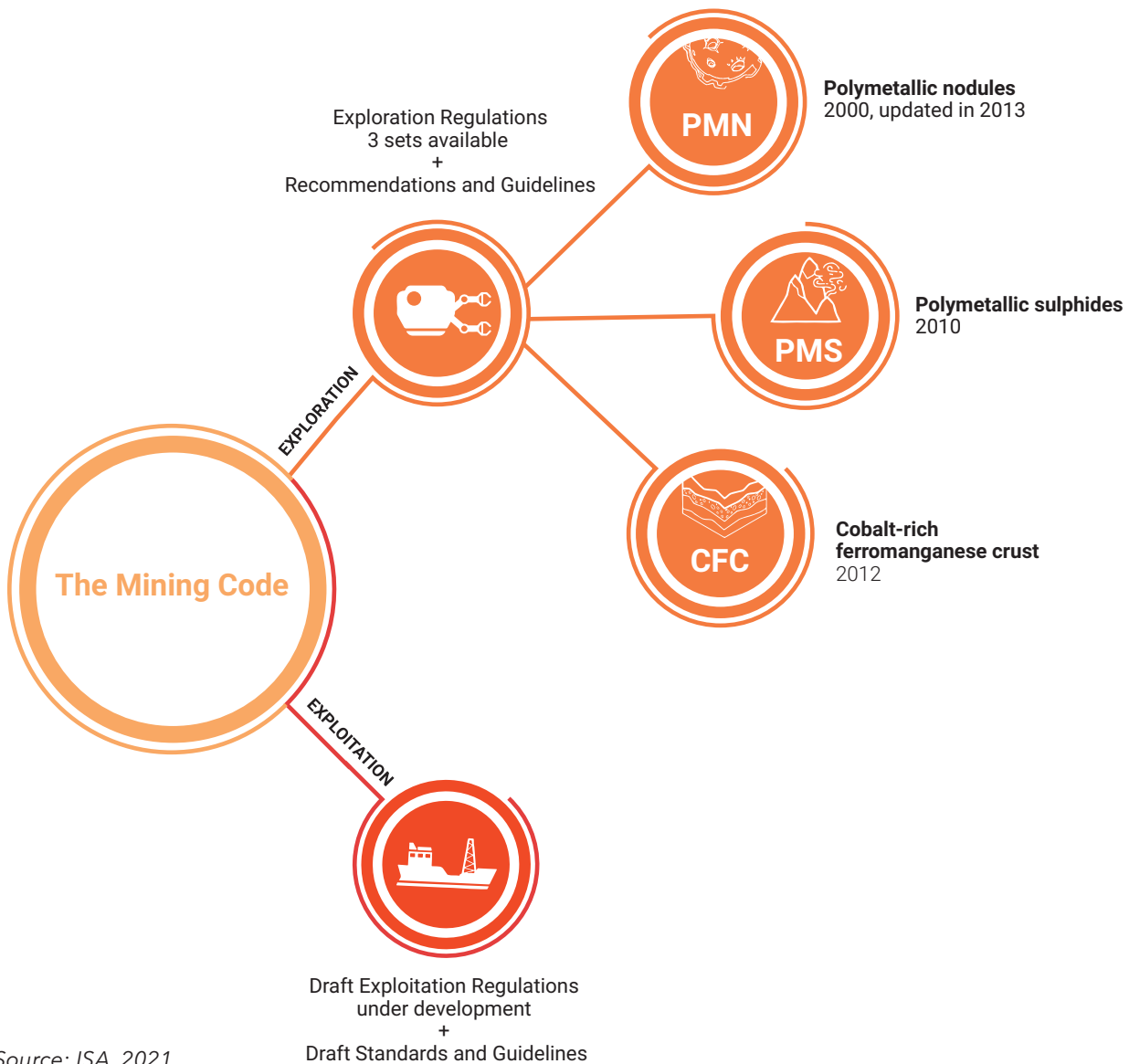
<sup>4</sup> ISBA/25/C/WP.1.



### Box 3: Fundamental Principles of UNCLOS

- Article 136** The Area and its resources are the common heritage of mankind
- Article 137** No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources. All rights in the resources of the Area are vested in mankind as a whole (represented by the ISA) and no State or natural or juridical person shall exercise mineral rights except in accordance with Part XI
- Article 140** Activities in the Area shall be carried out for the benefit of mankind as a whole
- Article 141** The Area shall be open to use exclusively for peaceful purposes by all States

**Figure 10. ISA Mining Code**



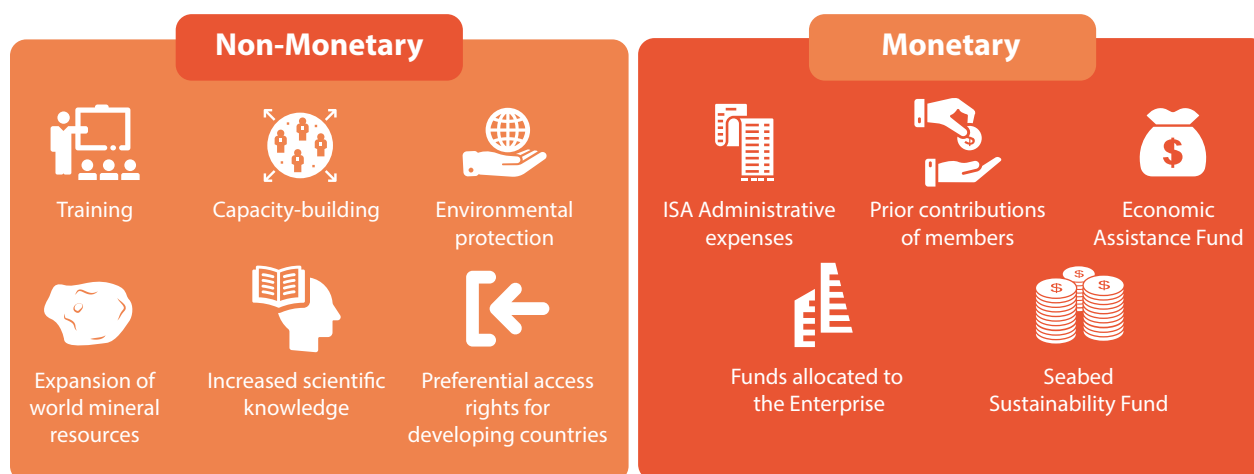
Source: ISA, 2021

stakeholder consultations: (i) protection and preservation of the marine environment, (ii) inspection, compliance and enforcement and (iii) responsibility and liability.<sup>5</sup> The Council decided to establish three informal working groups to progress discussions and negotiations in these areas. An open-ended working group has been selected to develop and negotiate the financial terms of an exploitation contract. The exploitation regulations would be supplemented by standards and guidelines currently developed in the following three phases: Phase 1: the standards and guidelines to be in place by the adoption of the draft exploitation regulations; Phase 2: the standards and guidelines to be in place prior the receipt of an application for a plan of work for exploitation and Phase 3: standards and guidelines in place before mining activities commence. Some key features of the draft exploitation regulations and Phase 1 on standards and guidelines were elaborated, including the fundamental policies and principles under UNCLOS: (i) the development of resources in the Area for all mankind and the protection of the marine environment, (ii) the robust application and assessment process, including external stakeholder participation and consultation,

(iii) transparency of information and the duty to exchange information, (iv) requirement for environmental impact assessments (EIAs), environmental monitoring and management plans, environmental performance guarantees, insurance and contributions to an Environmental Compensation Fund, (v) financial terms of an exploitation contract, including the payment of royalties, fees and penalties, (vi) safety, labor and health standards, (vii) the inspection, compliance and enforcement regime and (viii) dispute settlement provisions.

**H.E. Mr. Michael W. Lodge**, Secretary-General of ISA, then delivered a presentation on the role of ISA in ensuring the equitable sharing of *financial and other economic benefits* derived from deep sea mining-related activities in the Area. Mr. Lodge recalled the status of deep sea mineral resources in the Area as "the common heritage of mankind" under UNCLOS, which implies that they must be exploited for the benefit of mankind as a whole. The presenter further highlighted that UNCLOS (Art.140) refers to "financial and other economic benefits" and that UNCLOS already recognized various forms of non-monetary benefits that may be derived

**Figure 11: Monetary and non-monetary benefits recognized in Part XI of UNCLOS**



Source: ISA, 2019

<sup>5</sup> ISBA/26/C/2.



from activities in the Area (**Figure 11**). These include mandatory training for personnel from developing countries, capacity development, protection and preservation of the marine environment, increased marine scientific knowledge in the exploration phase and preferential access to mining sites for developing countries through the reserved area system. Mr. Lodge explained that some of these are already being derived and shared directly through the programs of ISA. The presenter explained that a payment regime for the monetary benefits that will flow in the form of payments made by contractors once exploitation begins is currently being developed by the Council, noting the limited guidance provided in the UNCLOS in relation to the use of these funds. Although UNCLOS indicated that a portion will be used to meet the administrative expenses of ISA and that a further portion will be allocated to an economic assistance fund, the presenter highlighted the lack of clarification needed on the modalities. Mr. Lodge also highlighted the requirement of the remaining funds to be shared between States Parties according to "equitable sharing criteria". The importance of the principle of "equitable sharing" and the complexity in its formulation was highlighted. Mr. Lodge underscored that this principle was strongly shaped by cultural values, precedent, and the specific types of goods and burdens being distributed. Therefore, to be fully understood, attention to contextual details is needed. In the context of activities undertaken in the Area, several issues will need to be addressed, such as (i) the principles to be used in determining the 'claims' that different entities or groups (current or future) will have on the pool of resources that are generated, and (ii) the mechanisms to be used for distributing available funds, including whether distribution should be in the form of direct payments to States or, for example, through the establishment of a global fund used to address deficiencies in the provision of global public goods. Mr. Lodge indicated that in determining equitable sharing criteria, UNCLOS (Art. 140) requires

that the interests and needs of developing States should be prioritized, which implies that the objective is to redistribute income or wealth from wealthier States to poorer States. This suggests that shares should be distributed based on some indicator of a State's priority in the redistribution goal. The work is currently underway to define the formula for equitable sharing following existing economic theories and ethics with some indicative considerations, such as (i) proportional sharing based on ownership rights or progressive sharing to redistribute wealth and remedy inequity (ii) developing progressive formula based on average Gross National Income per capita and share of a population adjusted by social distribution weight or alternatively (iii) establishing a Seabed Sustainability Fund. UNCLOS, Article 82 (4) provides for a system of revenue sharing to be established between coastal States and developing States particularly, "*the least developed and land-locked among them*" in respect of the exploitation of the non-living resources of Area. The equitable benefit-sharing rules must be approved by the ISA Assembly on the recommendation of the Council but also must also take into account the recommendations of the Finance Committee.

**Mr. Eden Charles**, Special Representative of the ISA Secretary-General for the Enterprise, provided a historical background of this unique component of the governance of the Area. In his preliminary remarks, he recalled the importance of the 1971 Paper from the 13 members of the Group of Latin American and Caribbean Countries which introduced the idea of the Enterprise to give effect to the principle of the "common heritage of mankind". Mr. Charles then highlighted that the Enterprise, as an organ of the ISA, was assigned with a specific mandate under Part XI of UNCLOS and the 1994 Agreement and that States Parties have an obligation to ensure the effective implementation pertaining to it before mining commences. Participants were reminded that the ISA Secretariat was tasked

to perform the functions of the Enterprise until it begins to operate independently. Mr. Charles developed some of the key functions of the Enterprise that include among others: (i) assessment of the results of the conduct of marine scientific research with respect to activities in the Area, with particular emphasis on research related to the environmental impact of activities in the Area, (ii) assessment of technological developments relevant to activities in the Area, in particular technology relating to the protection and preservation of the marine environment and (iii) assessment of approaches to joint-venture operations for it to conduct its initial deep seabed mining operations. Given the workload and capacity constraints of the Secretariat to fully perform the assigned functions related to the Enterprise prior to its operationalization,

the Secretary-General has appointed a Special Representative for the Enterprise with a limited mandate based on a decision of the Council. Mr. Charles highlighted that based on a study related to the issues on the operationalization of the Enterprise, issued in March 2020, the LTC adopted some clear recommendations. Amongst them was the recognition of the need, in line with the concept of “evolutionary approach” recognized in UNCLOS and the 1994 Agreement, to ensure the operationalization of the Enterprise through a step-by-step approach. The presenter also underscored the disadvantages arising from the delay of the operationalization of the Enterprise and the fundamental importance to ensure it can be operational before mining starts.



Aerial view of Port Louis. Photo: Sharon Ang / Pixabay.





## SESSION 4

# Environmental management of deep seabed mineral resources

### PRESENTATIONS

#### Protection and preservation of the marine environment from activities in the Area

*Dr. Wanfei Qiu, Programme Manager (Environment), ISA*

#### Environmental obligations in DSM context: the perspective of a contractor

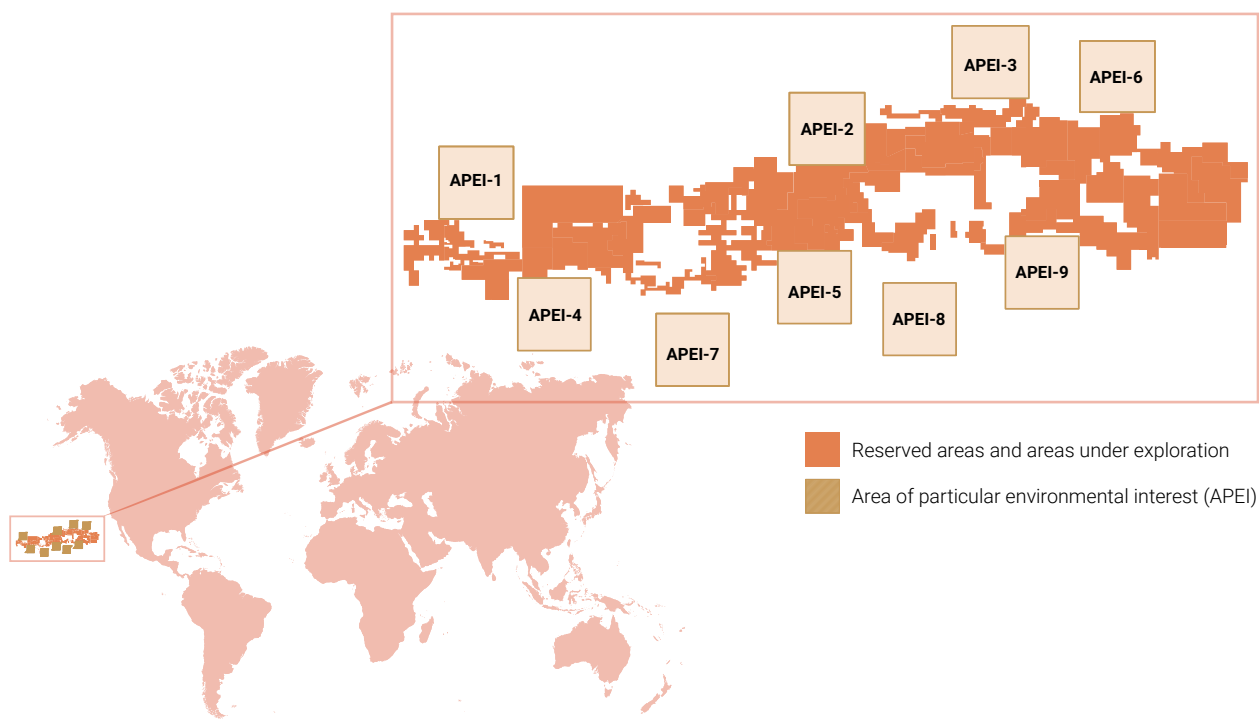
*Dr. Thomas Kuhn, Marine Resource Exploration, BGR*

**Dr. Qiu** presented on the work of ISA in relation to the protection of the marine environment in the Area recalling that Article 145 of UNCLOS requires ISA to take necessary measures with respect to activities in the Area to ensure the effective protection of the marine environment from harmful effects that may arise from such activities by adopting appropriate rules, regulations and procedures. This important work is reflected in ISA Strategic Plan for 2019-2023, Strategic Direction 3 (*Protect the marine environment*) which identifies efforts needed for the development and implementation of REMPs, EIA and risk assessment. REMPs are developed to provide relevant organs of ISA, contractors and sponsoring States with proactive measures and tools to support informed decision-making processes. The first REMP was adopted by the Council for the Clarion-Clipperton Zone (CCZ) in 2012. It comprised a network of nine areas of particular environmental interest (APEIs) which are protected from future exploitation of mineral resources. The nine APEIs cover over 1.4 million km<sup>2</sup> of the seabed area and a wide range of habitats known to occur in the CCZ (**Figure 12**).

The ISA LTC is formulating recommendations on additional APEIs to further improve the representativity and connectivity of the APEI network. Progress has been made in developing REMPs in other priority regions where exploration is taking place, including in the northern Mid-Atlantic Ridge and Northwest Pacific (see **Figure 4** for areas with exploration contracts).

EIA is an important tool available for protecting the marine environment at the scale of contract areas. Under ISA's exploration regulations, contractors are required to gather environmental baseline data to assess the potential impacts of their activities. To guide the preparation of an EIA, the LTC has issued sets of recommendations, including collecting data, exploration activities that would require a prior EIA and the review process.<sup>6</sup> Environmental data collected as part of the environmental baseline studies and monitoring during the exploration phase are primary inputs to an EIA for future exploitation activities and an important contribution to an improved understanding of the marine environment and biodiversity in the Area.

<sup>6</sup> ISBA/19/C/17, ISBA/16/12/Rev. 1, ISBA/18/A/11.

**Figure 12. Network of nine APEIs in CCZ environmental management plan**

Source: ISA, 2021

**Dr. Kuhn**, BGR, Germany presented on environmental obligations of contractors during exploration of seabed minerals in the international seabed area. BGR, Germany had held a contract for exploration of massive seafloor sulphides in the Indian Ocean close to the Rodriguez Triple Junction since 2015. As a contractor, BGR follows ISA recommendations concerning the EIAs arising from exploration for marine minerals in the Area.<sup>7</sup> Environmental surveys that need to be carried out by a contractor include the study of physical, chemical, geological, (micro)biological and ecological parameters in the entire

water column, the benthic boundary layer and within and outside active and inactive hydrothermal fields (**Figure 13**). Dr. Kuhn underscored that the overall objective of all these studies is to identify and document the status of the environment before any mining activity can start. Dr. Kuhn recalled that BGR has, since the start of its contract in 2015, conducted six exploration cruises to its contract area and dedicated about half of the shipping time and the financial budget to environmental baseline studies and plans to carry out technological tests and the accompanying EIA during the third five-year period of its license contract.

<sup>7</sup>ISBA/25/LTC/6/Rev. 1.



**Figure 13. Collection of environmental baseline data in contract area by BGR**



Source: TK, 2021

## SESSION 5

# Management and dissemination of geological, mineral and environmental information

### PRESENTATIONS

#### The legal regime governing the conduct of marine scientific research in the Area

*Mr. Elie Jarmache, LTC, ISA, France*

#### Geological, mineral and environmental data as a critical tool to inform decision-making processes, investments and governance of mineral activities in the Area

*Pr. Theophile Ndougsa Mbarga, LTC, ISA, Cameroon*

#### Available data and role of ISA in sharing environmental information

*Mr. Sheldon Carter, Database Manager, ISA*

**Mr. Jarmache**, a member of the LTC, elaborated on the provision for MSR under UNCLOS in general and specifically in relation to Part XI of UNCLOS. The MSR in the Area became of key importance at the Third Conference on the Law of the Sea. Part XIII of UNCLOS is entirely dedicated to MSR and contains governance principles and precise rules. MSR is generally articulated around the consent by coastal States or the freedom of conduct depending on the marine space (national or international) where it is supposed to be taking place. Article 143 of UNCLOS describes the legal regime of MSR in the Area. Two main stakeholders for the conduct of MSR in the Area are ISA and States parties to UNCLOS. Since UNCLOS was silent on the definition of MSR, the role of ISA in the Area became even more prominent, particularly under its mandate to “*organize and control activities in the Area*”. The interlinked relationship between ISA and States parties

can have different but complementary roles to play in MSR (**Box 4**).

**Pr. Ndougsa-Mbarga**, a member of the LTC, highlighted that geological, mineral and environmental data is a critical tool to inform decision-making processes, investments and governance of mineral activities in the Area. In order to explore seabed mineral resources in the Area, a contractor is obliged to provide specific environmental data and information and to report annually to the ISA Secretary-General. A contractor is also obliged to submit and provide all relevant geological, geophysical, geochemical and environmental data and information, including all technical, economic and environmental reports, and related financial information, and estimates of exploitable sectors upon the expiry or termination of a contract. This is to be done even before the request for approval of a plan of work for the exploitation.<sup>8</sup> The

<sup>8</sup> ISBA/19/C/17, Annex IV, Art.11.

#### Box 4: Article 143 of UNCLOS

1. Marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole, in accordance with Part XIII.
2. ISA may carry out marine scientific research concerning the Area and its resources, and may enter into contracts for that purpose. ISA shall promote and encourage the conduct of marine scientific research in the Area, and shall coordinate and disseminate the results of such research and analysis when available.
3. States Parties may carry out marine scientific research in the Area. States Parties shall promote international cooperation in marine scientific research in the Area by:
  - (a) participating in international programmes and encouraging cooperation in marine scientific research by personnel of different countries and of ISA;
  - (b) ensuring that programmes are developed through ISA or other international organizations as appropriate for the benefit of developing States and technologically less developed States with a view to:
    - (i) strengthening their research capabilities;
    - (ii) training their personnel and the personnel of ISA in the techniques and applications of research;
    - (iii) fostering the employment of their qualified personnel in research in the Area;
  - (c) effectively disseminating the results of research and analysis when available, through ISA or other international channels when appropriate.

geoscientific and environmental data and information collected is critical for good governance and sustainable management of mining-related activities because it sets the basis for the decision to proceed with designation of reserved areas, conservation of marine ecosystems, and the inventory of data and information to be provided for the protection of the environment by the Contractor.<sup>9</sup> ISA and the sponsoring States apply the precautionary approach and the best environmental practices by effectively conducting evaluations to protect the marine environment. It is important to create necessary mechanisms for collecting geoscientific, mining, and environmental data and information in the context of the efforts invested in the African continent. It was recommended that the pooling efforts

of several African countries could do this. In so doing, the African countries could create the enabling conditions to stimulate private investment for data collection and to establish mineral resource database systems. In turn, this could then constitute the foundation for the development of centers of excellence and associated expertise in Africa in collecting of geoscientific, mining and environmental data and information.

**Mr. Carter** provided an overview of available data and the role of ISA in sharing environmental information recalling the role of ISA to promote and encourage MSR and coordinate the dissemination of the results of such research and analysis mandated under UNCLOS. The ISA Strategic Plan for 2019-2023 identifies two specific strategic directions:

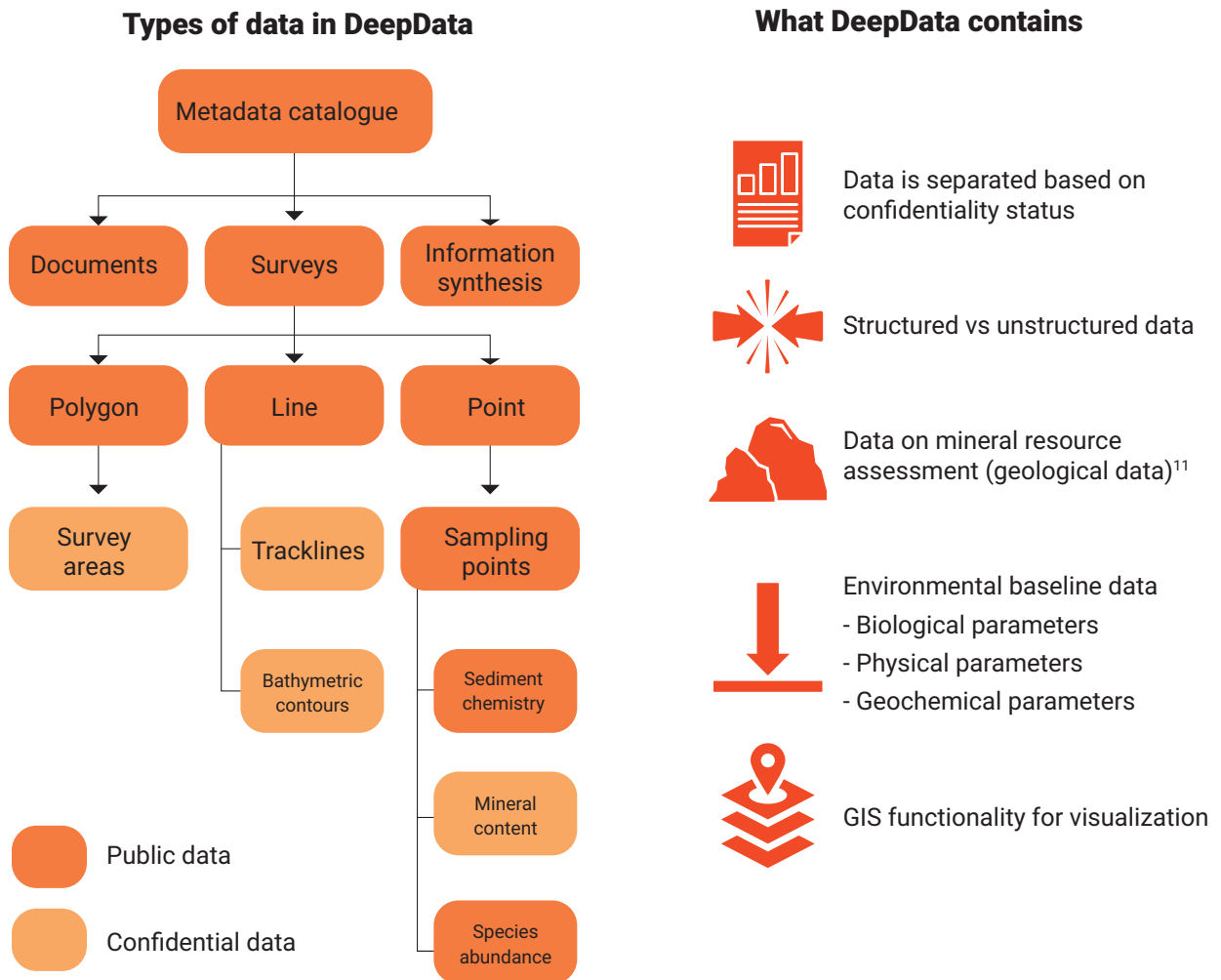
<sup>9</sup> ISBA/19/C/17, Arts.18 b, c and d, 31.

Strategic Direction 4.3 on sharing data openly and transparently and Strategic Direction 4.4 on promoting non-confidential information and data access. The ISA DeepData database established in 2019 was born out of an LTC request for data management strategy issued in 2015.<sup>10</sup> DeepData is a third-generation ISA database building on the foundation set by its predecessors and developed as a unifying system that merged several previously disjointed data segments. It is a key component of ISA data management strategy.

Its main function is to host deep sea related activity data, particularly data collected by contractors during exploration activities and any other relevant environmental resource data in the Area (Figure 14).

DeepData has a standardized reporting formats (maps, tables, workshop results) including relevant metadata for ease of reference. DeepData is listed based on confidentiality status (Figure 15).

**Figure 14. Types of data in DeepData**



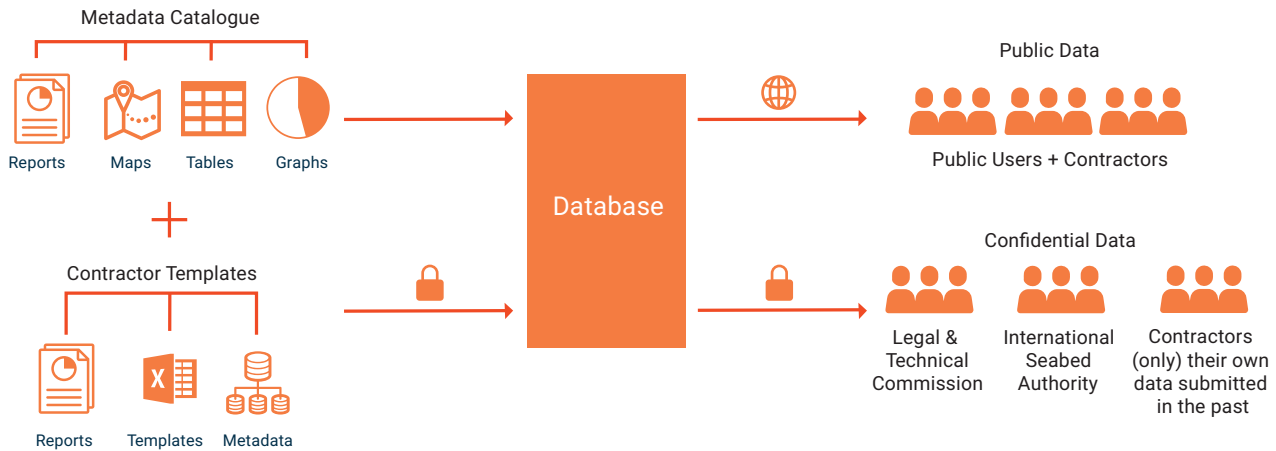
Source: ISA, 2021

<sup>10</sup> See <https://data.isa.org.jm/isa/map/>.

<sup>11</sup> ISBA/19/A/9, ISBA/19/C/17, ISBA/16/A/12/Rev.1, and ISBA/18/A/11



**Figure 15. Content of DeepData**



Source: ISA, 2021

DeepData contains environmental baseline data on biological, physical and geochemical parameters and geographic information system components on visualization of contract areas, sample locations, APEIs, etc. accessible to the public. The primary user group includes members of the public and scientific community, contractors and LTC who review the contractor’s performance by reviewing annual reports, including digital data submission. The following benefits of

DeepData were highlighted: (i) promotion of scientific knowledge for humankind, (ii) facilitating regulation of prospecting, exploration and exploitation of deep seabed mineral resources, (iii) aiding in the protection of the marine environment, (iv) aiding in the evaluation of applications, (v) enabling data gap analysis to guide contractors, (vi) assessing changes in the marine environment and (vii) increasing knowledge in MSR for the scientific community and general public.



Photo: BGR

## SESSION 6

# Enabling conditions for capacity-building opportunities for the African States

### PRESENTATIONS

#### The contribution of ISA in building the capacity of African States

*Dr. Marie Bourrel-McKinnon, Senior Policy Officer and Special Assistant to Secretary-General, ISA and Dr. Sonakshi Mishra, Programme Management Officer, ISA*

#### The perspective of ISA trainees

*Dr. Girish Beedessee (Mauritius)*

*Ms. Judith A Owusu (Ghana)*

*Mr. Abdulqadir Omar Ziyad (Somalia)*

**Dr. Bourrel-McKinnon** and **Dr. Mishra** jointly presented on the contribution of ISA in building the capacity of African States highlighting the role and mandate of ISA in relation to capacity-building under UNCLOS. First, in relation to MSR, participants were recalled that Article 143 of UNCLOS requires that scientific research in the Area be carried out for the benefit of mankind as a whole (**Box 4**). To that end, States parties are required to promote international cooperation in MSR in the Area by participating in international scientific programs and encouraging cooperation in MSR by personnel of different countries and ISA and ensuring that programs are developed through ISA or other international organizations as appropriate, for the benefit of developing States and technologically-less advanced States. The presenters also noted that Article 244 of UNCLOS further indicates that capacity-building could be done by strengthening MSR capabilities through education and training.

Second, in relation to transfer of technology, it was recalled that Article 144 of UNCLOS lays down the main requirements for the transfer of technology concerning activities in the Area. The presenters underscored that ISA has the duty to take measures to acquire technology and scientific knowledge and encourage transfer to develop states of such technology and scientific knowledge. This is further complemented by Article 266 of UNCLOS (**Box 5**). Third, in relation to developing States' participation, Article 148 of UNCLOS provides specific requirements. Fourth, Article 202 of UNCLOS specifically provides for, *inter alia*, scientific, educational, technical and other assistance to developing States for the protection and preservation of the marine environment and the prevention, reduction and control of marine pollution. Then, the presenters highlighted the six main avenues through which ISA is currently implementing its mandate on capacity-building and which include: the Contractor



## Box 5: Article 266 of UNCLOS

### Promotion of the development and transfer of marine technology

1. States, directly or through competent international organizations, shall cooperate in accordance with their capabilities to promote actively the development and transfer of marine science and marine technology on fair and reasonable terms and conditions.
2. States shall promote the development of the marine scientific and technological capacity of States which may need and request technical assistance in this field, particularly developing States, including land-locked and geographically disadvantaged States, with regard to the exploration, exploitation, conservation and management of marine resources, the protection and preservation of the marine environment, marine scientific research and other activities in the marine environment compatible with this Convention, with a view to accelerating the social and economic development of the developing States.
3. States shall endeavour to foster favourable economic and legal conditions for the transfer of marine technology for the benefit of all parties concerned on an equitable basis.

Training Programme,<sup>12</sup> the Endowment Fund for MSR,<sup>13</sup> the internship programme,<sup>14</sup> information workshops,<sup>15</sup> ISA Voluntary Commitments in support of the achievement of SDG14<sup>16</sup> and Joint Training Centres.<sup>17</sup> A review of ISA's capacity-building programs and initiatives between 1994 and 2019 had been commissioned in 2020. It showed that more than 500 individuals from developing States benefitted from one or more of ISA capacity-building initiatives. It is noteworthy that 37% of the total trainees were from Africa, whilst the internship programme did not have any participants from Africa (**Figure 16**).

A survey on the capacity priority needs of developing States, members of ISA was conducted by the Secretariat in 2020. The purpose of this survey was to allow the Members of ISA, particularly developing States, to identify their priority capacity-building and capacity development needs related to the role and mandate given to ISA

under UNCLOS and the 1994 Agreement. It received 47 responses from 33 countries. The largest number of responses received were from the African region, followed by Asia and the Pacific, Latin America and the Caribbean, Western Europe and Eastern Europe (**Figure 17**).

**Dr. Beedessee** (Mauritius) is currently working as a scientist at the University of Cambridge, United Kingdom. He was a recipient of ISA's Endowment Fund for Marine Scientific Research (EFMSR).

Dr. Beedessee had joined the Mauritius Oceanography Institute (MOI) as an associate research scientist. Under the EFMSR, Dr. Beedessee had the opportunity to join a collaborative cruise between scientists from the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) and MOI. During this exploration cruise, Dr. Beedessee used the Shinkai 6500 submersible to explore the vents of the Central Indian Ridge. Dr.

<sup>12</sup> See <https://www.isa.org.jm/training/contractor-training>.

<sup>13</sup> See <https://www.isa.org.jm/training/endowment>.

<sup>14</sup> See <https://www.isa.org.jm/index.php/training/internships>.

<sup>15</sup> See <https://www.isa.org.jm/events/workshops>.

<sup>16</sup> See <https://www.isa.org.jm/index.php/isa-voluntary-commitments>.

<sup>17</sup> See <https://www.isa.org.jm/training/JTRC>.

**Figure 16. Capacity-building and trainee overview (1994-2021)**



Source: ISA, 2021

Beedessee applied for an InterRidge-ISA fellowship the following year and continued his research in the lab of Dr. Ken Takai of JAMSTEC on several tools to confirm the novelty of deep-sea vent animals. Dr. Beedessee presented his research results at the 13<sup>th</sup> Deep-sea Biology Symposium in Wellington, New Zealand. Dr. Beedessee's research under the EFMSR has resulted in

several publications and remains highly cited within the deep-sea scientific community.<sup>18</sup>

**Ms. Owusu** (Ghana) is currently working as a Geochemist at the Ghana National Petroleum Corporation. She was deployed to ISA Secretariat under the National Experts Programme of the ADSR project. Due to the deployment, Ms. Owusu expanded

<sup>18</sup> Beedessee, G., Watanabe, H., Ogura, T., Nemoto, S., Yahagi, T., Nakagawa, S., Nakamura, K., Takai, K., Koonjul, M. and Marie, D.E., 2013. High connectivity of animal populations in deep-sea hydrothermal vent fields in the Central Indian Ridge relevant to its geological setting. Plos one, 8(12), p.e81570.  
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 Watanabe, H. and Beedessee, G., 2015. Vent fauna on the Central Indian Ridge. In Subseafloor Biosphere Linked to Hydrothermal Systems (pp. 205-212). Springer, Tokyo.  
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Ms. Judith Owusu during her deployment to the ISA Secretariat under the ADSR Expert Programme.

her knowledge on deep seabed related matters and the role of the ISA interacting with international experts, diplomats and the LTC members where she learned how complex matters are deliberated before recommendations are made to the ISA Council and the Assembly. Her practical experiences included conducting a resource estimation under the supervision of the Office of Environmental Management and Mineral Resources of ISA Secretariat. Ms. Owusu now successfully leads a team at the Ghana National Petroleum Corporation working on resource estimation assessment of the Tano offshore Basin.

**Mr. Ziyad** (Somalia) is currently the Head of Marine Science Department at the Faculty of

Science at the Somalia National University. He received a two-month on-land training under the ISA's Contractor Training Programme on the exploration of deep sea minerals at several research institutions under the Ministry of Earth Sciences of the Government of India. Mr. Ziyad shared the training was important for his professional growth and prospects but also exceptional and well-rounded in terms of deep sea exploration and exploitation of oceanic resources. Rotation across several institutions exposed Mr. Ziyad to different laboratories and research facilities and enabled smooth knowledge-sharing. The training helped Mr. Ziyad learn about the non-living component of the oceans and the oceanic resources, such as polymetallic nodules, massive sulphide deposits, gas hydrates, and natural oil and gas.

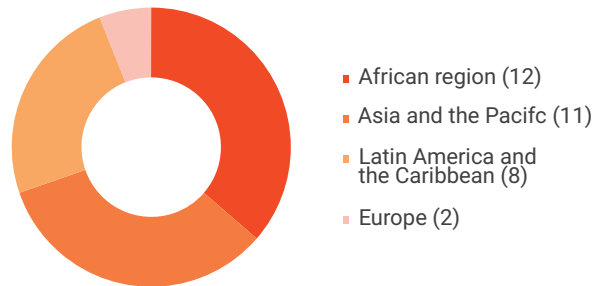
**Figure 17. Results of survey on the identification of priority capacity-development needs by ISA Members**



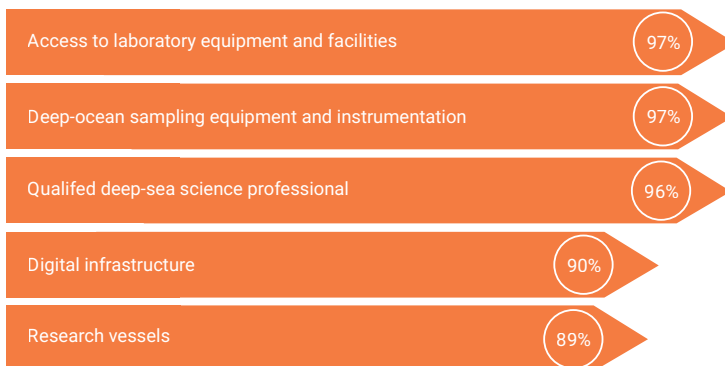
**Survey – April/June 2020**

**47 responses from 33 countries**  
 Including Algeria, Cote d'Ivoire, Ghana, Guinea, Kenya, Mauritius, Morocco, Nigeria, Seychelles, Sierra Leone, South Africa, Zambia.

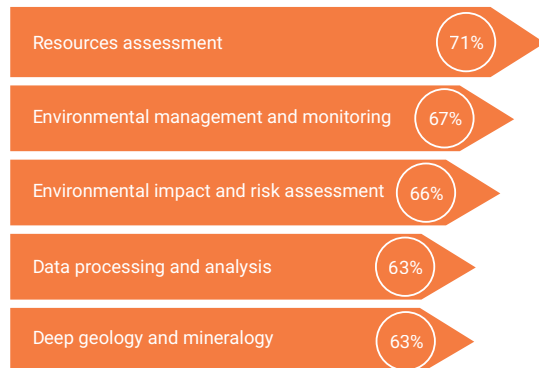
**Number of respondents to the survey by region**



**Number of respondents to the survey by region**



**5 most important capacity development needs**



**Tools identified**



Source: ISA, 2021



# Final group discussions and synthesis of recommendations

The objective of the three breakout sessions was to answer the following three key questions with a view of capturing the issues and recommendations identified for each.

## 1. How can exploration and exploitation activities undertaken in the Area contribute to Africa's blue economy?

Facilitator: Dr. Marie Bourrel-McKinnon, ISA

Rapporteur: Ms. Talatu Akindolire, ISA

### Potential opportunities

- Expand the resource base and economic growth while incentivizing participation (investment) from the private sector;
- Reinforce the importance of the rule of law (UNCLOS) through increased knowledge about the development of the equitable sharing formula for benefit sharing (international level) and calls for a renewed vision of ownership of natural resources (national levels);
- Support for the development of new sectors of the economy while opening new fields of research relevant for the blue economy;
- Sponsoring States (in the Area) could leverage the relationship with sponsoring entities to advance knowledge and expertise at the national level (EEZ);
- Anticipate future job creation requirements to ensure future generations of African nationals can fully benefit from the emerging DSM sector;
- Build on the existing expertise and knowledge of coastal African States engaged in oil and gas exploration/exploitation;
- Strengthen regional and international cooperation and foster strategic partnerships to promote best practices (governance, equitable sharing, protection of the marine environment etc.);
- Engage AU (including to ensure interests of landlocked developed countries) and developing strategic roadmap and guidelines to assist decision-makers (cross-cutting and inclusive) of African States;
- Develop strong regulatory and policy frameworks for sustainable development and management of deep seabed mineral sector;
- Expand opportunities for non-monetary benefits;
- "Africanize" science and develop a clear vision for deep sea research at the scale of the continent while increasing the visibility of African skilled/trained scientists;
- Develop further regional discussion on sustainable approach for ocean industry for Africa;
- Invest proceeds back into the African maritime domain.

## Challenges

- Lack of awareness among decision-makers and the general public about the potential benefits of the deep seabed mineral sector in the African continent;
- Lack of long-term vision for emerging new industries and opportunities;
- Lack of specific capacity needs, such as lack of long-term education strategy for developing deep-sea skills;
- Lack of sensitivity for new sectors and industries by the industrial strategies and policies at the national level.

## 2. What are the capacity-building needs of African States?

Facilitator: Mr. Joshua T. Tuhumwire, LTC, ISA

Rapporteur: Dr. Sonakshi Mishra, ISA

### Opportunities

- Regionalization of capacity-building plans through the engagement of AU and establishment of shared regional research facilities for the African continent;
- Leveraging the existing expertise of African States in land-based mining and oil and gas sector to translate and build the deep sea sector capacity;
- Develop dedicated curricula for higher education in technical, environmental and legal deep-sea related subjects, including options for diversification and specialization in deep sea related fields to develop a pool of professionals who can work on ocean and land-based sectors (mining, oil and gas) to: (i) safeguard both immediate and long-term job safety without losing out on the opportunity to build the African capacity for emerging sectors and; (ii) enable landlocked countries that do not have marine-specific educational programs to participate and build their capacity in a deep sea related sectors;
- Increase engagement of landlocked countries through awareness and capacity-building;
- Engage scientific, legal and technical experts in designing capacity-building programs for the African States in the deep-sea mineral sector;
- Specific training needs assessment at regional, sub-regional and national level focusing on relevant fields (marine ecology, marine biology/mammals/seabirds, marine pollution and toxicology, legal background);
- Establishment of the regional-level resource pool of African experts in deep sea related fields;
- Develop the capacity of EIA practitioners and those involved in monitoring and inspecting deep-sea mineral-related activities as well as science-policy and multidisciplinary practitioners to ensure sustainable development and management of the deep-sea mineral industry for Africa;
- Address the specific capacity needs to support active engagement in the deep-sea mineral-related activities in the Area such as: (i) liability and risk assessment particularly focusing on SIDS; (ii) legal and policy framework and issues, including contract agreements and role of sponsoring States; (iii) geological and geochemical technical and resource assessment; (iv) exploration techniques and (v) monitoring and compliance;
- Capacity-building at the decision-making level to create awareness on the importance of sustainable development, management of seabed resources and development of socio-economic and environmental policies;
- Role model to encourage the youth to take up science and technology related to marine/deep-sea science.

## Challenges

- Capacity-building needs in terms of human resources and scientific and technical infrastructure (research vessels, laboratories and equipment). Limitations in financial, technical and infrastructure resources to support the deep-sea research sector may inhibit overall capacity development;
- Ensuring absorption of new capacities in the job market for the deep sea sector;
- Lack of skill sets and educational opportunities in the marine science sector in many African States;
- Lack of awareness and motivation among youth to take up marine science and technology;
- Linking academics and practitioners to create jobs in relevant fields;
- Lack of awareness among public, policymakers and decision-makers on potentials and challenges of seabed mineral sector;
- Lack of a strong socio-economic and environmental regulatory framework to create the enabling conditions for the DSM sector;
- Lack of awareness among African countries about the potential of deep sea mineral-related activities in the Area and UNCLOS provisions directed at LDCs, LLDCs and SIDS;
- Lack of capacity and skillsets in departments and ministries working on EIA review of development projects to assess, review and provide mitigation measures for seabed mining-related exploration and exploitation activities.

### 3. How can participation of African States be increased in activities undertaken in the Area?

Facilitator: Mr. John Youhanes Magok, AU

Rapporteur: Ms. Kayon Wray, ISA

## Opportunities

- Strong cooperation and establishment of a network of professionals/experts;
- Increase number of institutions that could provide training on deep seabed related matters including research;
- Build on ISA Strategic plan for 2019-2023 as a baseline to develop a roadmap to increase activities in the Area;
- Leverage access to information and address gaps in information and communication;
- Increase the level of awareness of African countries through sensitization workshops within continents; form alliances and partnerships among African countries and other countries and practitioners already engaged to establish joint ventures (developing solid contracts with solid guarantees) - technology transfer; environmental safeguarding;
- Pan-African and regional institutions should take the lead in bringing the seabed related activities to the forefront (Common Market for Eastern and Southern Africa, East African Community, Intergovernmental Authority on Development);
- Operationalization of the 2019 Blue Economy Strategy by the AU Member States;
- Financing of project, institutional framework and develop simplified guidelines for policymakers to take advantage of and increase participation;
- Expanding African partnerships that aim to enable the African domain to attract private/ public sectors in the new economy (global partnership);
- Change in the governance system to promote activities within the Area and involvement of policymakers.

## Challenges

- Lack of awareness and access to information related to deep sea related activities in the Area;
- Lack of technical and financial resources required for deep sea related activities in the Area;
- Lack of political awareness and engagement at regional and national levels to ensure participation of African industry and experts in the development of DSM sector;
- Differing priorities, issues and levels of expertise in countries which can prevent a regional and collaborative approach for deep sea related activities in the Area;
- General security- and piracy-related problems in regions that compete for maritime-related resources;
- Lack of systematic information and understanding of the non-engagement of the African continent in deep sea related activities in the Area;
- Lack of adequate environmental safeguards and standard systems to develop deep sea related activities and capacities;
- Lack of technical institutions at the national and regional level and related job opportunities that could absorb the skills acquired internationally by African States in deep sea related activities.





## Concluding remarks

### **Closing Address from Dr. Rezah Badal, Director General, Prime Minister's Office, Department for Continental Shelf, Maritime Zones Administration and Exploration, Mauritius**

Excellencies,  
Friends and colleagues,  
Fellow Participants  
Ladies and Gentlemen,

I am honored today to address you this closing remark on behalf of the Government of Mauritius and the Department for Continental Shelf, Maritime Zones Administration and Exploration. It is indeed with great satisfaction that we have been associated with the International Seabed Authority and the Norwegian Agency for Development Cooperation to support this Workshop to promote Sustainable Development of Africa's Seabed Resources (ASDR), its Ocean/Blue Economy.

As you have been apprised, the ASDR project is implemented by the ISA and the African Union. The project builds on ISA's and the African Mineral Development Centre of UNECA's commitment to foster international and regional cooperation for the Sustainable Development of Africa's Blue Economy. It aims at raising awareness among the African States on the subject of sustainable development of the Continental Shelf and, more precisely, on the challenges for seabed minerals in the Area.

Another key component of the ASDR project concerns the secondment of national experts from the African States to be based at the ISA Secretariat. This initiative which is certainly most welcome, shall build on the existing platform to impart technical skills on deep sea matters to our nationals. As we understood, this was to occur in 2020, but unfortunately world COVID pandemic came as unpredicted and subsequently delayed the process. We hope the world health situation will improve to permit such exchange.

Ladies and Gentlemen,

This workshop, as you understood, is the third of a series of five that brought together key stakeholders and experts in the field. We were privileged to have representatives from our neighboring friends, namely Comoros, Kenya, Madagascar, Rwanda, Tanzania, Seychelles and Somalia. We were also happy to have representatives from all walks, including governments official and international, regional and national bodies. On Day 1, we were immersed in the complexity of issues pertinent to Seabed Mineral Mining. However, I must say that the topics were well-calibrated and perfectly scheduled, which took us gradually to the Deep.

At the very beginning, we have seen and listened to the provision of a governance structure for seabed minerals in the Area. The Law of Sea Convention provides for a three-tiered structure or organs to establish the ISA. The roles and powers of these organs of the ISA have been defined and provide a clear mechanism for member states to partake in the seabed mineral activities in the Area. Indeed, today's workshop is one among these numerous activities.

We heard about Africa's mining vision and its contribution to deep sea mineral exploration. My colleagues from the Department for Continental Shelf share with you the case of Mauritius. Indeed, I must admit that Mauritius has had a very prudent approach to seabed mineral activities. I recall my first acquaintance with ISA some years, or at least a decade ago. We had the privilege to be introduced to the growing activities of ISA by none other than his Excellency Mr. Michael Lodge. This has led us to undertake our capacity building and initiate our work on developing an appropriate legal and institutional framework for Seabed Mineral Activities.

Ladies and Gentlemen,

As explained earlier, Mauritius is now finalizing two bills for the Seabed Mineral Exploration and Exploitation: one for its EEZ and another one for the ABNJ. I must say that Mauritius still has a lot to undertake to kick start activities pertaining to the Exploration of Seabed minerals. As it is realized, Deep Sea Mineral Exploration is a matter of high technical complexity and involves multi-disciplinary fields of expertise.

We also realized that Mauritius, as every member State, will have to scrupulously adhere to international obligations as provided under the UNCLOS and ISA regulations. We delved into the issues pertinent to making due diligence and the questions concerning state liabilities. These matters have to be judiciously considered and addressed by each party. Fortunately, much work has been carried out into these aspects and certainly contained vital elements in decision-making. We are also aware of the tedious efforts and research that have been made in matters pertinent to Environment Impact Assessment. I had, personally, the privilege to participate in ISA's work on the development of Regional Environmental Management Plans (REMPs). As we heard yesterday, I understand a first REMP is now in

place for the CCZ region. Undoubtedly, ISA is continuing its efforts to educate all concerned stakeholders concerning all the fronts, be it in terms of Environmental Impact assessments, its process and access to deep data that have been set up either through historic surveys or planned Marine Scientific Research.

However, as we understood, such undertaking is two-fold: The Exploration and the Exploitation phase. The framework for Exploration of the Area has been established through the various conventions, codes, rules, and regulations. We shall now ascertain that a similar equitable framework is in place for the Exploitation phase.

Ladies and Gentlemen,

I would like to conclude here with a small African saying: "Masuwa ekufaka libongo etikalaka" (in Lingala, Congo), which translates as "A boat will always have its destination as long as the port is there". We are all embarked on the same boat, and our port is for humankind to reap this benefit as a whole. In these difficult days, as COVID is dictating a new norm, we can only support each other in our undertaking. Seabed Mineral Exploration is one such journey we all have to take together and come up with the least injury.

I am confident that ISA and its important partners will lead us cautiously on this way.

Ladies and Gentlemen,  
My Friends and Colleagues,

Finally, let me convey my deepest gratitude and thanks to all of you who have made this workshop a success and contributed to raising awareness for the Africa Deep Sea Resources project in supporting the Sustainable Development of our Ocean Economy. Again, I would like to thank everyone: Excellences, our Ambassador in New York, Respected Officials, Friends and colleagues, our dear Norwegian friend, Harald, my staff and last



but not least, Excellency Michael Lodge and all his wonderful staff.

Thank you until next time, Insha Allah.

## **Closing Remarks from H.E. Mr. Michael W. Lodge, Secretary-General of the International Seabed Authority**

In my closing remarks, I would like to again congratulate Mauritius for its election to the Council of ISA. I look forward to your participation and continuing to support Mauritius in this journey. I would like to thank Dr. Rezah Badal for reminding everyone that it has been quite a few years since the engagement of Mauritius in the work of ISA and seabed exploration and since the idea of a workshop was discussed. I am fascinated by the highly commendable work that Mauritius has been doing on the continental shelf, which we heard about in the last few days.

This workshop is not only for Mauritius but also for other partners and colleagues from the African group. And I thank you all for your participation, and it has been great to see you all, even though remotely. Despite the challenges related to a virtual workshop, I am very pleased with the level of participation of over 160 participants and the quality of the debate, which was very productive and useful. I found the discussion in this workshop vibrant, fascinating and constructive. So,

this virtual format can be seen as a very inclusive format as securing a high level of participation in an in-person workshop can be challenging due to constraints related to logistics and expenses. However, it is also not the best substitute for an in-person workshop which allows for more personal and in-depth engagement and connections. Let's hope we can return to the simple format in due course and maybe even look at hybrid formats of such workshops in the future.

In closing, I would like to reiterate my thanks and appreciation to our partners in this workshop. In particular, I would like to thank Mr. Rezah Badal and his team in Mauritius and Ambassador Jagdish D. Koonjul and his staff in New York for their most support in organizing this workshop. I would like to thank our partners from Norway again for supporting this project and the African Union. I reiterate my commitment to the African group on behalf of ISA and look forward to the visit to the headquarters of the African Union and to engage on the critical issues, including that of political engagement that has also been raised in this workshop. My thanks go to all the facilitators of the working groups, all the experts, including Judge Maurice K Kamga, partners from the Legal and Technical for their commitment and support to this issue. I would like to thank all the former ISA trainees and future fellows selected under the ADSR secondment program who will come to Jamaica soon. Lastly, I would like to thank all ISA staff for organizing the workshop.

# List of boxes and figures

## Boxes

1	Article 76 of UNCLOS
2	System of exploration and exploitation in the Area - the 'parallel system' (Article 153 of UNCLOS)
3	Key principles of the legal regime of the Area
4	Article 143 of UNCLOS
5	Article 266 of UNCLOS

## Figures

1	Maritime zones under UNCLOS
2	Due diligence obligation of sponsoring States
3	ISA governance structure
4	Exploration contracts in the Area (June 2021)
5	Africa's opportunities based on the maximization of the five resources linkages
6	Mineral deposits within Mauritius EEZ (Nath and ShyamPrasad (1991), Mukhopadhyay et al. (2003), Bissessur et al., (2012))
7	Exploration contracts signed in the Area of the Indian Ocean
8	Use of AUVs during the NPD cruise in 2019
9	Percentage of favorable mineral areas in the Area and the continental shelves
10	ISA Mining Code
11	Network of nine APEIs in CCZ Environmental Management Plan
12	Collection of environmental baseline in contract area by BGR
13	Types of data in DeepData
14	Content of DeepData
15	Capacity-building and trainee overview (1994-2021)
16	Results of survey on the identification of priority capacity-development needs by ISA Members



# Agenda

1 to 3 June 2021  
15:00 - 19:00 (Mauritius)

1 to 3 June 2021  
6:00 - 10:00 (Kingston)

Tuesday 1 June 2021	
15:00 – 15:20 6:00 – 6:20	<b>Opening statements</b> <ul style="list-style-type: none"> <li>• <i>H.E. Mr. Michael W. Lodge, Secretary-General, ISA</i></li> <li>• <i>H.E. Mr. Jagdish D. Koonjul, G.C.S.K, G.O.S.K, Permanent Representative of the Republic of Mauritius to the United Nations</i></li> <li>• <i>H.E. Mr. Albert Muchanga, Commissioner for Economic Development, Trade, Industry and Mining (ETIM), AUC</i></li> <li>• <i>Mr. Jens Frølich Holte, State Secretary, Ministry of Foreign Affairs, Norway</i></li> </ul>
<b>Session I</b>	<b>Governance structure and mandate of ISA</b>
15:20 – 15:25 6:20 – 6:25	<i>"ADSR Project" Video</i>
15:25 – 15:45 6:25 – 6:45	<b>The legal regime governing the exploitation of resources and preservation of the marine environment</b> <i>Mr. Vladimir Jares, Director, DOALOS</i>
15:45 – 16:05 6:45 – 7:05	<b>The ISA: structure and decision-making</b> <i>Mr. Yongsheng Cai, Senior Legal Officer, ISA</i>
16:05 – 16:25 7:05 – 7:25	<b>The outer limit of the continental shelf in Africa: present situation and prospects</b> <i>Judge Maurice Kamga, ITLOS</i>
16:25 – 16:45 7:25 – 7:45	<b>The mechanism of 'reserved areas': overview and practical implications</b> <i>Prof. Pedro Madureira, LTC, ISA, Portugal</i>
16:45 – 17:00 7:45 – 8:00	General discussion – Coffee break

<b>Session II</b>	<b>Increased regional and international cooperation in support of the sustainable development of Africa's blue economy</b>
17:00 – 17:20 8:00 – 8:20	<b>Africa Mining Vision and contribution of deep seabed exploration and exploitation to the development of Africa's blue economy</b> <i>Dr. Frank Mugenyi, Interim Coordinator, African Minerals Development Center, AU</i>
17:20 – 17:40 8:20 – 8:40	<b>Importance of deep seabed exploration to support the development of national blue economy: the case of Mauritius</b> <i>Dr. Dass Bissessur (Director Hydrocarbon / Mineral Exploration Unit) and Dr. Beenesh Motah (Director - Hydrocarbon/Mineral Production Unit) of the Department for Continental Shelf, Maritime Zones Administration and Exploration, Prime Minister's Office, Mauritius</i>
17:40 – 17:55 8:40 – 8:55	General discussion
<b>Session III</b>	<b>Prospection, exploration and exploitation on continental shelves and in the Area</b>
17:55 – 18:15 8:55 – 9:15	<b>Exploration of mineral resources in national jurisdiction: a case study about Norway</b> <i>Dr. Sissel Eriksen, Senior Geologist, Norwegian Petroleum Directorate, Norway</i>
18:15 – 18:35 9:15 – 9:35	<b>Mineral resources of the Area and current status of marine mineral technology</b> <i>Dr. Harald Brekke, Chair of the LTC, ISA, Norway</i>
18:35 – 18:55 9:55 – 9:55	<b>Role and responsibilities of sponsoring States</b> <i>Mr. Thembile Joyini, Vice-Chair of the LTC, ISA, South Africa</i>
18:55 – 19:10 9:55 – 10:10	General discussion – End of Day 1
<b>DAY 2</b>	<b>Wednesday, 2 June 2021</b>
<b>Session III</b>	<b>Prospection, exploration and exploitation on continental shelves and in the Area (continued)</b>
15:00 – 15:05 6:00 – 6:05	"ISA at 25" Video
15:05 – 15:25 6:05 – 6:25	<b>The legal framework for activities in the Area: transitioning from exploration to exploitation</b> <i>Mr. Nathan Eastwood, Legal Officer, ISA</i>
15:25 – 15:45 6:25 – 6:45	<b>Role of ISA in ensuring the equitable sharing of financial and other economic benefits from DSM</b> <i>H.E. Mr. Michael Lodge, Secretary-General, ISA</i>



15:45 – 16:05 6:45 – 7:05	<b>Independent operation of the Enterprise: perspectives and challenges</b> <i>Mr. Eden Charles, Special Representative of the ISA Secretary-General for the Enterprise</i>
16:05 – 16:15 7:05 – 7:15	General discussion – Coffee break
<b>Session IV</b>	<b>Environmental Management of deep seabed mineral resources</b>
16:15 – 16:35 7:15 – 7:35	<b>Effective protection of the marine environment from activities in the Area</b> <i>Dr. Wanfei Qiu, Programme Manager (Environnement), ISA</i>
16:35 – 16:55 7:35 – 7:55	<b>Environmental obligations in DSM context: the perspective of a contractor</b> <i>Dr. Thomas Kuhn, Marine Resource Exploration, BGR</i>
<b>Session V</b>	<b>Management and dissemination of geological, mineral and environmental information</b>
16:55 – 17:15 7:45 – 8:15	<b>The legal regime governing the conduct of MSR in the Area</b> <i>Mr. Elie Jarmache, LTC, ISA, France</i>
17:15 – 17:25 8:15 – 8:25	General discussion – Coffee break
17:25 – 17:45 8:25 – 8:45	<b>Geological, mineral and environmental data as a critical tool to inform decision-making processes, investments and governance of mineral activities in the Area</b> <i>Pr. Theophile Ndougsa Mbarga, LTC, ISA, Cameroon</i>
17:45 – 18:05 8:45 – 9:05	<b>Available data and role of ISA in sharing environmental information</b> <i>Mr. Sheldon Carter, Database Manager, ISA</i>
18:05 – 18:15 9:05 – 9:15	General discussion – end of Day 2
<b>DAY 3</b>	<b>Thursday, 3 June 2021</b>
<b>Session VI</b>	<b>Enabling conditions for capacity-building opportunities for the African States</b>
15:00 – 15:20 6:00 – 6:20	<b>The contribution of ISA in building the capacity of African States</b> <i>Dr. Marie Bourrel-McKinnon, Senior Policy Officer and Special Assistant to the Secretary-General, ISA and Dr. Sonakshi Mishra, Programme Management Officer, ISA</i>
15:20 – 15:40 6:20 – 6:40	<b>The perspective of an ISA trainee</b> <i>Dr. Girish Beedessee (Mauritius) Ms. Judith A Owusu (Ghana) Mr. Adbulqadir Omar Ziyad (Somalia)</i>
15:40 – 15:50 6:40 – 6:50	General discussion

Breakout sessions	Group Discussion 1 How can exploration and exploitation activities undertaken in the Area contribute to Africa's blue economy?	Group Discussion 2 What are the capacity-building needs of African States?	Group Discussion 3 How can African States' participation be increased in activities undertaken in the Area?
		Facilitator: <i>Dr. Marie Bourrel-McKinnon, ISA</i> Rapporteur: <i>Ms. Talatu Akindolire, ISA</i>	Facilitator: <i>Mr. Joshua T. Tuhumwire, LTC, ISA</i> Rapporteur: <i>Dr. Sonakshi Mishra, ISA</i>
15:50 – 16:20 6:50 – 7:20	Group A	Group B	Group C
16:20 – 17:00 7:20 – 8:00	Group C	Group A	Group B
17:00 – 17:40 8:00 – 8:40	Group B	Group C	Group A
17:40 – 18:50 8:40 – 9:50	Coffee Break		
17:50 – 18:05 8:50 – 9:05	Synthesis and Recommendations		
<b>Closing remarks</b>			
18:05 – 18:20 9:05 – 9:20	<ul style="list-style-type: none"> <li>• <i>Dr. Rezah Badal, Director General, Prime Minister's Office, Department for Continental Shelf, Maritime Zones Administration and Exploration, Mauritius</i></li> <li>• <i>H.E. Mr. Michael W. Lodge, Secretary-General, ISA</i></li> <li>• <i>Group photo</i></li> </ul>		





# List of participants

	Participating countries	Name	Position
1	<b>Kenya</b>	Charles Magori	Kenya Marine and Fisheries Research Institute
2		Robert Kibiwot, O.G.W.	Deputy Director, Maritime, Kenya International Boundaries Office
3		Sheila Mammet	Senior State Counsel, Office of the Attorney General & Department of Justice
4		Mwaka Mupe	State Counsel, Office of the Attorney General & Department of Justice
5	<b>Madagascar</b>	Andoniaina Sylvia Rabotovao	Desk Officer of the Ocean Governance Support, Ministry of Agriculture, Livestock and Fisheries
6		Andriantsilavo Jean Michel Rabary	Desk Officer of the Management and Planning of the Maritime area, Ministry of Agriculture, Livestock and Fisheries
7	<b>Mauritius</b>	Hugues Vitry	President, Marine Megafauna Conservation Organisation
8		Francois Rogers	Executive President, Reef Conservation
9		Shiu Ching Young Kim Fat	Minister Counsellor, Prime Minister's Office
10		Daniel Marie	Officer-in-Charge, Mauritius Oceanography Institute
11		Manvendra Singh	Ag. Principal Research Scientist, Mauritius Oceanography Institute
12		Rushaa Banu Badaloo	Analyst, Mauritius Chamber of Commerce and Industry
13		Maheshwar S. P Oodit	Manager, Economic Development Board
14		Deujen Mungur	Manager, Economic Development Board
15		Dooshala Ramjutun-Ramlaul	Lead Professional, Economic Development Board
16		Archana Rati Audit	Lead Professional, Economic Development Board
17		Nawshin Mahadoo	Economic Development Board
18		Ravi Shanker Mungra	Chief Inspector of Police, National Disaster Risk Reduction and Management centre
19		Denis Paul	Police Officer, National Disaster Risk Reduction and Management centre
20		Ajay Agundhoo	Police Officer, National Disaster Risk Reduction and Management centre
21		Koushul Narrain	Researcher, Mauritius Research and Innovation Council
22	Kiran Tatoree	Researcher, Mauritius Research and Innovation Council	
23	Vikash Tatayah	Conservation Director, Mauritian Wildlife Foundation	

24	<b>Mauritius</b>	Luvna Caussy	Technical Officer, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping
25		Nivedita Hosanee	Registrar of ships, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
26		Parvatee Sohatee-Tulloo	Maritime Officer, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
27		Meenaksi Bhirugnath-Bhookhun	Senior Maritime Officer, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
28		Anoushka Bhirugnath-Bhookhun	Superintendent of Shipping, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
29		Bhavnah Komul Kalidin	Marine Scientist, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
30		Deepak Ramjeeawon	Ag. Scientific Officer, National Parks and Conservation Service
31		Rishy Bukoree	Second Secretary, Ministry of Foreign Affairs, Regional Integration and International Trade
32		Prateema Kutwoaroo	Senior Analyst, Ministry of Foreign Affairs, Regional Integration and International Trade
33		Hirikeshsing Unnuth	Second Secretary, Ministry of Foreign Affairs, Regional Integration and International Trade
34		Adam Koodoruth	First Secretary, Ministry of Foreign Affairs, Regional Integration and International Trade
35		Disha Ragoonath Ragnuth	Second Secretary, Ministry of Foreign Affairs, Regional Integration and International Trade
36		Jayrhan Heeramun	Maritime Officer, Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Shipping Division)
37		Kevin Ramkaloan	CEO, Business Mauritius
38		Afzal Yearoo	Lead Analyst, Ministry of Finance, Economic Planning and Development
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40		V Bhoyroo	University of Mauritius
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