

INDIAN OCEAN RIM ASSOCIATION

Indian Ocean Region Workshop on “Exploration and Development of Seabed Minerals and Hydrocarbons: Current Capability and Emerging Science Needs” Bali, Indonesia 26 - 27 July 2015

CONCEPT PAPER

Introduction

The Indian Ocean is the world’s third largest ocean. It provides vital resources, ecosystem services and transport routes that are the cornerstones of the economies of bordering States. Future economic prosperity, food security and social wellbeing are inextricably linked to effective management and sustainable use of its resources.

In November 2013 the Ministerial Forum of the Indian Ocean Rim Association (IORA) developed the Perth Principles which built on the regional recognition of the importance of productive and sustainable use of the Indian Ocean and its resources. Furthermore, in 2014, the Council of Ministers adopted the Blue Economy as the top priority for generating employment through sustainable development and the First IORA Ministerial Blue Economy Conference will be held in Mauritius in September 2015. Mining seabed resources was identified as one of the potential pillars of the Indian Ocean Blue Economy.

Background

The seabed contains most of the same minerals that we find on land, often in enriched forms, as well as minerals unique to the deep ocean. The greatest interest for development is cobalt-rich ferromanganese crusts, polymetallic manganese nodules and polymetallic sulphides. The latter is a source of rare earth minerals important to new ICT hardware and renewable energy technologies. In nearshore and shallow seabed areas some mining operations already exist, including mining for diamonds in Namibia and tin in Indonesia.

Technological advances that provide access to the seabed below 200 metres, together with an increased demand for rare earth minerals are driving renewed interest in exploration of both shallow and deep sea resources. This is a rapidly developing opportunity for economic development in both the Exclusive Economic Zones of coastal nations and beyond the limits of national jurisdiction.

The Indian Ocean region includes seabed resources with high development potential. Although data is limited, the map of known deep sea minerals in the Indian Ocean produced by the International Seabed Authority (ISA) ¹ (Fig. 1) show deposits minerals that are the current focus of exploration activities.

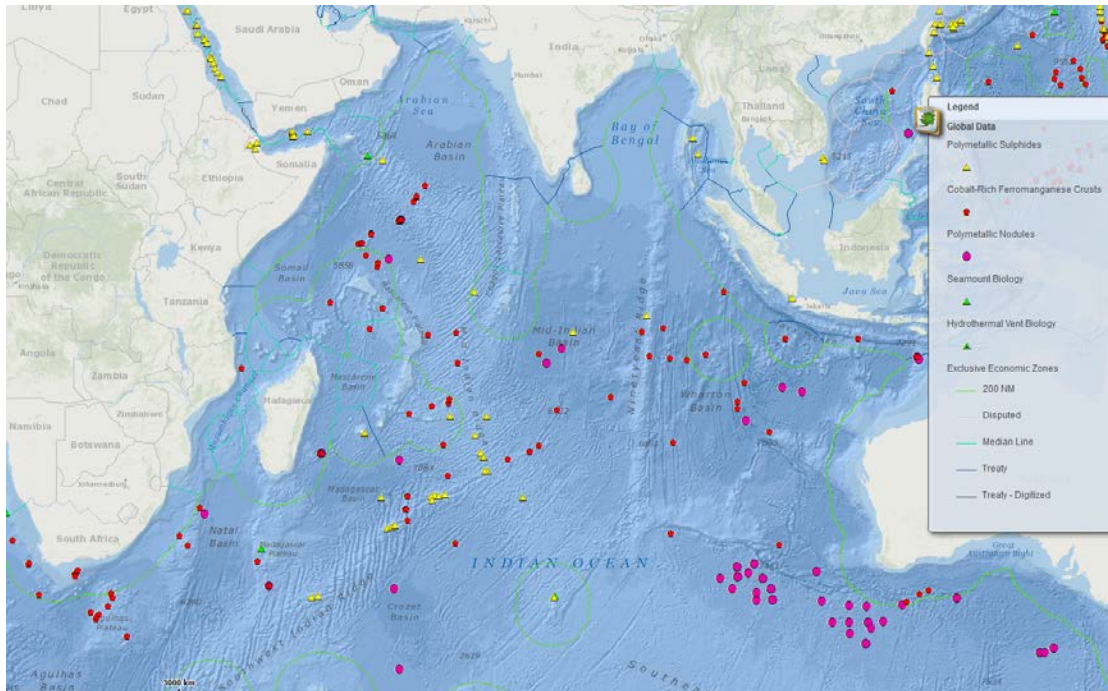


Figure 1. Known deep sea mineral deposits in the Indian Ocean. Source International Seabed Authority

Exploration for Deep Sea Mining (DSM) is rapidly advancing. The ISA has developed mining code regulations and has issued licenses for exploration in the Area. As at 1 June 2015, 22 contracts for exploration had entered into force across the Area (14 for exploration for polymetallic nodules, 5 for exploration for polymetallic sulphides and 2 for cobalt-rich ferromanganese crusts). In the Indian Ocean region the ISA has executed 3 exploration contracts for polymetallic sulphides (Table 1) and India has applied for a DSM exploration contract in the Indian Ocean Ridge. The location of the ISA leases is shown in Figure 2.

Table 1. ISA contracts for exploration for polymetallic sulphides.

| Contractor | Date of entry into force | Sponsoring State | General location of the exploration area | Date of expiry |
|--|--------------------------|------------------|--|------------------|
| China Ocean Mineral Resources Research and Development Assoc. | 18 November 2011 | China | South-west Indian Ridge | 17 November 2026 |
| Government of the Republic of Korea | 24 June 2014 | – | Central Indian Ocean | 23 June 2029 |
| Government of India | To be signed | – | Indian Ocean Ridge | – |
| Federal Institute for Geosciences and Natural Resources of Germany | 6 May 2015 | Germany | Central Indian Ridge and South-east Indian Ridge | 5 May 2030 |

¹ The International Seabed Authority’s main responsibility is to organise and control mineral exploration and exploitation of the international seabed and ocean floor and its subsoil beyond the limits of national jurisdiction (the “Area” – which has been declared by the United Nations as a “common heritage of mankind”)

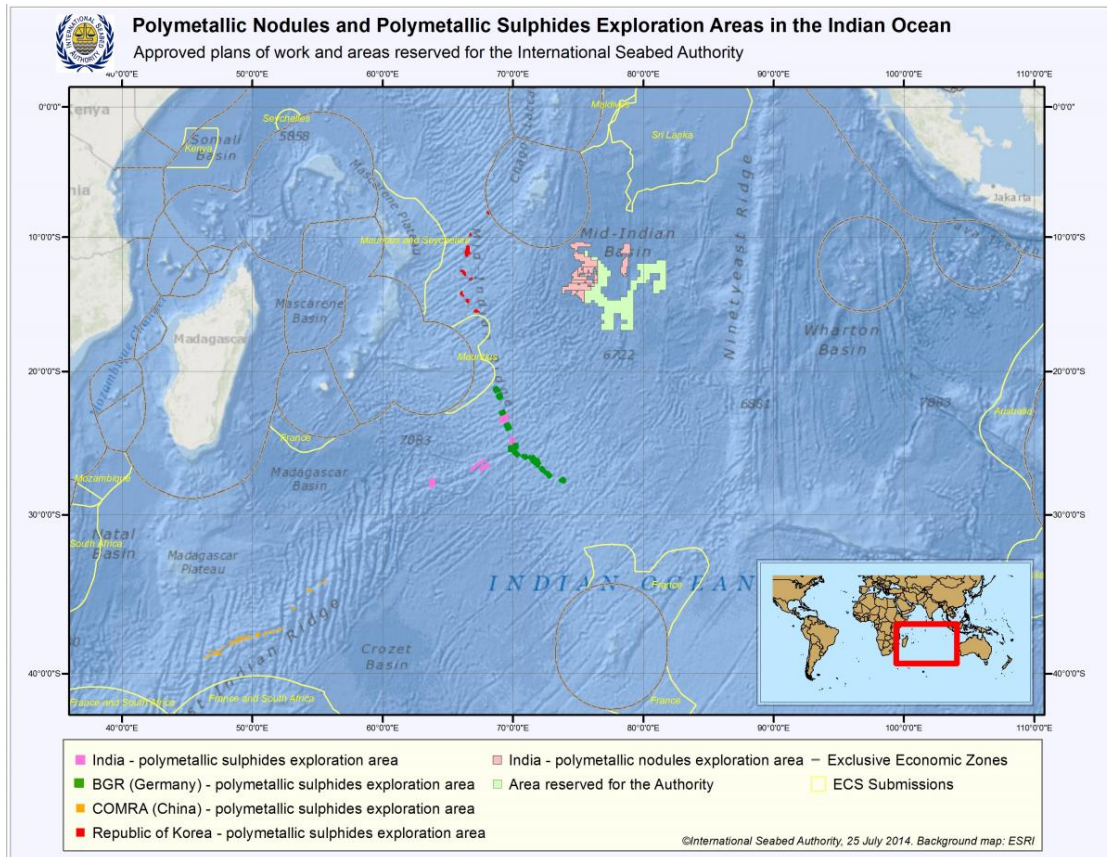


Figure 2. Exploration areas contracted by the International Seabed Authority in the Indian Ocean (as at July 2014)

The location and potential for DSM within the EEZ areas of Indian Ocean Rim nations is largely unknown. Some of the IORA nations have mapped seabed resources within their EEZs (e.g. Australia, Indonesia, India and South Africa) and their development is contributing to their economies. However, there is limited capacity in other nations to map their seabed resources. Improved information is needed to assess potential across the region.

Current exploitation activities both within and outside areas of national jurisdiction provide useful lessons to improve the preparedness of countries that are seeking to develop seabed resources. Building regional capacity to effectively engage in the opportunities provided by Indian Ocean seabed resources is urgent. Sustainable development will rely on improved science-based information, technology sharing and effective governance to regulate and monitor activities. The latter is becoming increasingly important not just for Governments but also for industry where governance and investment risk are intertwined². Good governance and appropriate legislation also positions countries to be a sponsoring State to the ISA for DSM in the Area.

² Michael Stanley (2014) Presentation to the ISA Workshop on Polymetallic Nodules Resource Classification, Goa India, October 13, 2014.

The offshore oil and gas industry recognized some years ago the value of a management approach that integrates environmental, social and financial performance and have used public-private partnerships to increase understanding of marine ecosystems over broad regional scales to support informed adaptive management strategies and obtain more cost effective industry operations.

Workshop Focus

This workshop will bring together representatives of IORA Member States with policy/regulatory responsibilities and scientific/technical expertise relevant to Exploration and Development of Seabed Minerals and Hydrocarbons. Complemented by invited experts, Member States and/or Dialogue Partner States will combine their experience, expertise and technical knowledge to consider IORA regional initiatives for sustainable development of seabed resources. This will be achieved by:

- Better understanding of existing and emerging opportunities from sustainable development of seabed resources in the Indian Ocean
- Increased awareness of the importance of robust governance to capture opportunities and attract investment for the development of seabed resources
- Increased knowledge in the seabed exploration sector through researcher exchanges, capacity building and skills development
- Identification of key knowledge gaps constraining informed decision making
- Assessing the need for public-private development partnerships for seabed exploration
- Increased awareness of the potential impacts of seabed exploration and mining on the marine environment
- Evaluating technology transfer relationships among IORA Member States
- Developing recommendations and priorities for consideration at the First IORA Ministerial Blue Economy Conference in Mauritius in September 2015