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# RB-IOS 2026: Deep-Sea Mining, Ocean Governance, and India's Blue Economy

18 January 2026

**SUBJECTS COVERED**

ENVIRONMENT

IR

ECONOMY

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# RB-IOS 2026: Deep-Sea Mining, Ocean Governance, and India's Blue Economy

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## WHY IN NEWS

The Responsible Business for Inclusive Oceans Symposium (RB-IOS 2026) opened in Chennai on January 18, 2026, co-organised by the International Seabed Authority (ISA) and India's Ministry of Earth Sciences, focusing on equitable governance of deep-sea mineral resources and the integration of developing nations into ocean economy decision-making.

## THE OCEAN AS A RESOURCE FRONTIER

The Earth's oceans cover 71% of the planet's surface and contain resources that are increasingly critical to 21st-century technology:

**Polymetallic nodules:** potato-sized rocks on the deep ocean floor, rich in manganese, nickel, copper, and cobalt — metals essential for electric vehicle batteries and electronics

**Seafloor massive sulphides (SMS):** mineral deposits around hydrothermal vents containing copper, zinc, gold, and silver

**Cobalt-rich ferromanganese crusts:** on the flanks of seamounts; high cobalt concentrations critical for battery cathodes

**Rare Earth Elements (REE):** found in deep-sea muds in the Pacific; crucial for permanent magnets in wind turbines and electric motors

The surge in demand for these critical minerals — driven by the energy transition — has made the deep ocean economically attractive. **Deep-sea mining (DSM)** is the extraction of these resources from depths of 200–6,000 metres.

## INTERNATIONAL SEABED AUTHORITY (ISA)

### Legal Basis

The **International Seabed Authority** was established under **Part XI and Annex VI of UNCLOS (United Nations Convention on the Law of the Sea)**, which was adopted in 1982 and entered into force in 1994. UNCLOS divides the ocean into zones:

Zone	Governance
Territorial Sea (0–12 nm)	Coastal state sovereignty
Contiguous Zone (12–24 nm)	Coastal state enforcement jurisdiction
Exclusive Economic Zone (0–200 nm)	Coastal state sovereign rights over resources
Continental Shelf (up to 350 nm)	Coastal state rights over seabed resources
High Seas	Open to all; no sovereignty
The Area	International seabed beyond national jurisdiction — governed by ISA

**The Area** — the seabed, ocean floor, and subsoil beyond national jurisdiction — is designated as the **“Common Heritage of Mankind”** under UNCLOS Article 136. This means no state or individual can claim sovereignty over it; its resources must be exploited for the benefit of all humanity, with particular attention to the needs of developing countries.

## ISA’s Role and Structure

ISA regulates all mineral-related activities in the Area through:

**Exploration contracts:** allowing states and private companies to explore (but not yet exploit) mineral deposits

**Mining Code:** the regulatory framework governing extraction (currently being finalised)

**Enterprise:** ISA’s own commercial arm (not yet operational), intended to conduct mining on behalf of developing countries

**Headquarters:** Kingston, Jamaica **Members:** 168 member states + the European Union **India’s**

**relationship:** India was one of the first countries to receive an ISA exploration licence in 1987 — one of the “Pioneer Investors”

## The “Two-Year Rule” Trigger

In 2021, Nauru (a Pacific small island state) triggered the UNCLOS “two-year rule” on behalf of a sponsored company (The Metals Company, TMC) — notifying ISA that it would submit a plan of work for exploitation within two years. This obligated ISA to complete the Mining Code by July 2023, whether ready or not. The deadline was missed, and the legal status of exploitation requests remains contested — a major controversy at RB-IOIS 2026.

## INDIA'S DEEP-SEA INTERESTS

### Exploration Licences

India holds ISA exploration contracts through the **Ministry of Earth Sciences (MoES)** for:

#### Central Indian Ocean Basin (CIOB) — Polymetallic Nodules:

First-ever ISA exploration licence: 1987 (Pioneer Investor)

Area: ~150,000 km<sup>2</sup> in the CIOB

Resources: polymetallic nodules (manganese, nickel, cobalt, copper)

Indian operator: National Institute of Ocean Technology (NIOT) and India

#### Indian Ocean — Polymetallic Sulphides (Hydrothermal Vents):

Exploration area: Carlsberg Ridge and Rodrigues Triple Junction

Resources: copper, zinc, silver, gold from seafloor sulphide deposits

### Deep Ocean Mission

**Deep Ocean Mission (DOM)** — launched 2021 by MoES — is India's Rs 4,077 crore initiative to develop:

**Matsya 6000**: a crewed deep-sea submersible capable of diving to 6,000 m (National Institute of Ocean Technology, NIOT, Chennai)

Technologies for deep-sea mining and exploration

Marine biodiversity documentation at depth

Seabed mapping and resource assessment

## KEY ISSUES AT RB-IOS 2026

### 1. Environmental Governance Gap

Deep-sea ecosystems are among the least understood on Earth. Hydrothermal vents host chemosynthesis-based food chains (not dependent on sunlight) with entirely unique species — some found nowhere else. Polymetallic nodule fields are habitats for slow-growing fauna; disturbing them generates sediment plumes that can travel hundreds of kilometres.

**Key concern:** ISA's environmental regulations are being developed in parallel with exploitation pressure — the precautionary principle has not been formally adopted into the Mining Code.

## 2. Benefit-Sharing for Developing Countries

UNCLOS mandates that the exploitation of the Area’s resources must benefit all humanity – but especially developing countries. The **Enterprise** (ISA’s commercial arm) was designed to ensure this, but has never become operational. Sponsoring states (like Nauru, Tonga) are being used by multinational companies to access ISA licences without genuine benefit flowing to the island states.

India at RB-IOI 2026 advocated for:

- Operationalising the Enterprise
- Mandatory technology transfer to developing country operators
- Transparent and fair royalty and revenue-sharing structures

## 3. Moratorium Debate

Multiple Pacific island states, environmental NGOs (led by the Deep Sea Conservation Coalition), and some European governments have called for a moratorium on DSM until environmental baselines are established and robust regulations are in place. The International Union for Conservation of Nature (IUCN) passed a moratorium resolution in 2021.

Proponents of mining (particularly sponsoring states and mining companies) argue that land-based mining of the same critical minerals (cobalt from Congo, nickel from Indonesia) causes far greater environmental and social damage.

## INDIA’S BLUE ECONOMY VISION

The term “**Blue Economy**” encompasses the sustainable use of ocean resources for economic growth, improved livelihoods, and ocean ecosystem health. Key components for India:

Sector	Status / Target
Fisheries and Aquaculture	\$14B sector; 28M jobs; 2nd globally
Coastal and Marine Tourism	Growing; Blue Flag beach certifications
Offshore Energy (oil, gas, wind)	ONGC offshore production; 1 GW offshore wind by 2030 (MNRE)
Marine Biotechnology	Pharmaceutical compounds from marine organisms
Ports and Shipping	Sagarmala Programme; 12 major ports; Shipping Ministry
Deep-Sea Mining	Exploration stage; DOM underway
Desalination	Expanding; MoES has National Desalination Plant

India aims for the Blue Economy to contribute **\$1 trillion to GDP by 2030** — roughly 10× the current contribution.

## UPSC RELEVANCE

### Prelims:

ISA: established under UNCLOS 1982; Kingston, Jamaica; Common Heritage of Mankind (Article 136)

CIOB: Central Indian Ocean Basin; India's exploration licence since 1987 (Pioneer Investor)

Deep Ocean Mission: Rs 4,077 crore; Matsya 6000 submersible; NIOT Chennai

NIOT: National Institute of Ocean Technology; under MoES

The Area: seabed beyond national jurisdiction; Common Heritage of Mankind

Moratorium on DSM: IUCN 2021 resolution

**Mains GS-2:** International ocean governance; UNCLOS; ISA; India's multilateral interests **Mains GS-3:** Blue Economy; deep-sea mining; energy transition minerals; environmental governance; India's ocean resources

## ★ FACTS CORNER — KNOWLEDGE PEDIA

### INTERNATIONAL SEABED AUTHORITY (ISA):

Established: UNCLOS 1982 (entered force 1994); Part XI

HQ: Kingston, Jamaica

Membership: 168 states + EU

Mandate: regulate mineral activities in “the Area”

“Common Heritage of Mankind”: UNCLOS Article 136

### INDIA’S ISA EXPLORATION LICENCES:

CIOB (polymetallic nodules): 1987 (Pioneer Investor); ~150,000 km<sup>2</sup>

Carlsberg Ridge + Rodrigues Triple Junction (polymetallic sulphides): separate licence

Indian operator: Ministry of Earth Sciences / NIOT

### DEEP OCEAN MISSION (DOM):

Launch: 2021; Ministry of Earth Sciences (MoES)

Budget: Rs 4,077 crore

Key deliverable: Matsya 6000 (crewed submersible, 6,000 m depth)

Operator: National Institute of Ocean Technology (NIOT), Chennai

### UNCLOS ZONES — QUICK REFERENCE:

Territorial Sea: 0–12 nautical miles (nm); full sovereignty

Contiguous Zone: 12–24 nm; enforcement

EEZ: 0–200 nm; sovereign rights over resources

Continental Shelf: up to 350 nm; seabed resource rights

High Seas: beyond EEZ; open access

The Area: beyond continental shelf; ISA jurisdiction

### DEEP-SEA MINERALS:

Polymetallic nodules: Mn, Ni, Cu, Co; depth 4,000–6,000 m; Pacific/Indian Ocean floor

Seafloor massive sulphides: Cu, Zn, Au, Ag; around hydrothermal vents

Cobalt-rich crusts: seamount flanks; high cobalt; Pacific

REE muds: rare earth elements; Pacific seabed

### RB-IOS 2026:

Full form: Responsible Business for Inclusive Oceans Symposium

Host city: Chennai; co-organiser: MoES + ISA

Key issues: DSM moratorium debate, benefit-sharing, ISA Enterprise, environmental baselines

### OTHER RELEVANT FACTS:

Nauru “two-year rule” trigger: 2021; obligated ISA to complete Mining Code by July 2023

IUCN moratorium resolution on DSM: 2021 World Conservation Congress, Marseille

Blue Economy target (India): \$1 trillion contribution to GDP by 2030

India’s Blue Flag beaches: 10 (as of 2025) — international certification for clean beaches

Sagarmala Programme: port-led development; Ministry of Ports, Shipping and Waterways

Sources: ISA, Ministry of Earth Sciences, The Hindu

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