Deep Ocean Mission

Why in News

Recently, the **Cabinet Committee on Economic Affairs** has approved the proposal of the Ministry of Earth Sciences (MoES) on the **Deep Ocean Mission (DOM).**

- The **blueprint of the DOM** to explore the deep recesses of the ocean was unveiled in 2018. Earlier, MoES had also rolled out the **draft Blue Economy Policy.**

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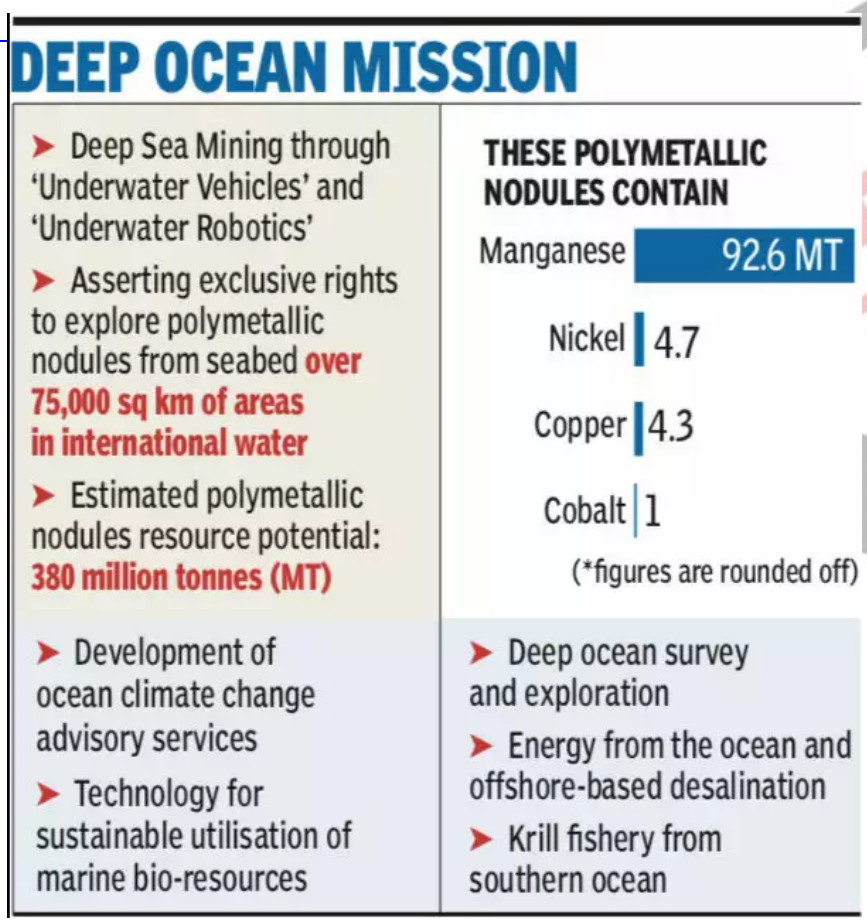

Key Points

- **About:**
  - The cost of the Mission has been estimated at Rs. 4,077 crore **over a five-year period** and will be **implemented in phases. MoES** will be the **nodal ministry** implementing this multi-institutional ambitious mission.
  - It will be a **mission mode project to support the** Blue Economy **Initiatives** of the Government of India.

        - **Blue Economy** is the **sustainable use of ocean resources** for economic growth, improved livelihoods and jobs, and ocean ecosystem health.
    - The **technology and expertise** needed in such missions is now available with only five countries - US, Russia, France, Japan and China.
        - **India will now be the sixth country to have it.**
- **Major Components:**
    - **Development of Technologies for Deep Sea Mining, and Manned Submersible:**
        - A **manned submersible will be developed to carry three people** to a depth of 6,000 metres in the ocean with a **suite of scientific sensors and tools.**
        - An **Integrated Mining System** will be also developed for mining **polymetallic nodules** at those depths in the central Indian Ocean.
            - **Polymetallic nodules** are rocks scattered on the seabed containing iron, manganese, nickel and cobalt.
        - The exploration studies of minerals **will pave the way for commercial exploitation in the near future,** as and when commercial exploitation code is evolved by the **International Seabed Authority**, an **United Nations (UN)** organisation.
    - **Development of Ocean Climate Change Advisory Services:**
        - It entails developing a suite of observations and models **to understand and provide future projections of important climate variables** on seasonal to decadal time scales.
    - **Technological Innovations for Exploration and Conservation of Deep-sea Biodiversity:**
        - **Bio-prospecting of deep sea flora and fauna** including microbes and studies on sustainable utilization of deep sea bio-resources will be the main focus.
    - **Deep Ocean Survey and Exploration:**
        - It will explore and identify **potential sites of multi-metal Hydrothermal Sulphides mineralization** along the Indian Ocean mid-oceanic ridges.
    - **Energy and Freshwater from the Ocean:**
        - Studies and detailed engineering design for offshore **Ocean Thermal Energy Conversion (OTEC)** powered **desalination plants** are envisaged in this proof of concept proposal.
            - OTEC is a technology which **uses ocean temperature differences** from the surface to depths lower than 1,000 meters, **to extract energy.**
    - **Advanced Marine Station for Ocean Biology:**
        - It is aimed at the development of human capacity and enterprise in ocean biology and engineering.
        - It will translate research into **industrial application and product development** through on-site business incubator facilities.
- **Significance:**
    - **Oceans,** which cover **70% of the globe,** remain a key part of our life. About **95% of the Deep Ocean remains unexplored.**
    - **Three sides of India are surrounded by the oceans** and around **30% of the country's population living in coastal areas,** the ocean is a major economic factor supporting fisheries and aquaculture, tourism, livelihoods and blue trade.
        - India has a unique maritime position. Its **7517 km long coastline is home to**

nine coastal states and 1382 islands.

- The Government of India's **Vision of New India by 2030** announced in February 2019 highlighted the Blue Economy as one of the ten core dimensions of growth.

- Oceans are also a **storehouse of food, energy, minerals, medicines, modulator of weather and climate and underpin life on Earth.**

- Considering the importance of the oceans on sustainability, the UN has declared the decade, **2021-2030 as the** Decade of Ocean Science for Sustainable Development.

- **Other Blue Economy Initiatives:**

- India-Norway Task Force on Blue Economy for Sustainable Development **:**

- It was inaugurated jointly by both the countries in 2020 to develop and follow up joint initiatives between the two countries.

- **Sagarmala Project:**

- The **Sagarmala project** is the strategic initiative for port-led development through the extensive use of IT enabled services for modernization of ports.

- **O-SMART:**

- India has an umbrella scheme by the name of **O-SMART** which aims at regulated use of oceans, marine resources for sustainable development.

- **Integrated Coastal Zone Management**:

- It focuses on conservation of coastal and marine resources, and improving livelihood opportunities for coastal communities etc.

- **National Fisheries Policy :**

- India has a National Fisheries policy for promoting 'Blue Growth Initiative' which focuses on sustainable utilization of fisheries wealth from marine and other aquatic resources.

Source:PIB