



Shallow Water Mining

For Prelims: Deep-sea mining, Shallow Water Mining, Marine Ecosystem.

For Mains: Shallow Water Mining and its Implications.

Why in News?

Recently, a group of researchers has suggested that **Shallow Water Mining** is in direct conflict with **Biodiversity Conservation and [Sustainability Goals](#)**, as the activity poses **severe environmental risks**.

What is Shallow Water Mining?

- Shallow-water mining takes place **at depths less than 200 metres** and it has been touted as **less destructive than terrestrial mining** and less risky than mining in [Deep-Water Ecosystems](#).
- It is considered a relatively low-risk and low-cost option to satisfy the demand for metals and minerals. Also, technology for shallow-water mining already exists.
- Shallow-water mining projects are already underway in **Namibia and Indonesia**, and **projects have been proposed in Mexico, New Zealand, and Sweden**.

What are the Findings?

- **About:**
 - Shallow Water Mining is not a sustainable substitute for [Deep-Sea Mining](#).
 - The part of the ocean that lies **below a depth of 200 meters is defined as the deep sea**, and the process of extracting minerals from this area is known as deep-sea mining.
 - Mining metals from the shallow-water ocean floor **requires removing large amounts of sediment**.
 - **Removing these sediments, which takes** thousands of years to accumulate, **means jeopardizing** organisms that call it home.
- **Impact:**
 - As shallow-water ecosystems are already under stress due to pollution, and the impacts of [climate change](#), even seemingly small-scale mining activities **can drastically affect marine ecosystems, especially at local scales**.
 - Mineral mining alters habitats as well as causes **local biodiversity loss and changes in species communities**.
 - The indirect effects of mining, such as the **spread of seabed material and harmful substances released** from the seafloor and the **clouding of water, contribute to impairing the state of the marine environment**.
 - The overall environmental effects of shallow-water mining are similar to those of **operations where the seafloor is excavated**, such as dredging. This means that **it can take decades for the ecosystems to recover**.

What are the Suggestions?

- Shallow-water mining activities should not be considered the **“silver bullet to resolve the growing global need for metals”** until the environmental and socioeconomic impacts are thoroughly investigated.
- Without this information, one could not understand the potential risks of the mining activity for deep-ocean biodiversity, ecosystems and human well-being.
- The precautionary principle should be **applied to mining in shallow marine areas**. They believe **operations should not be permitted until their risks have been fully mapped**.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Consider the following statements:

1. The Global Ocean Commission grants licences for seabed exploration and mining in international waters.
2. India has received licences for seabed mineral exploration in international waters.
3. ‘Rare earth minerals’ are present on the seafloor in international waters.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (b)

Exp:

- The Global Ocean Commission was an international initiative between 2013 and 2016 to raise awareness and promote action to address the degradation of the ocean and help restore it to full health and productivity.
- **International Seabed Authority (ISA) is a UN body set up to regulate the exploration and exploitation of marine non-living resources of oceans in international waters.** It considers applications for exploration and exploitation of deep-sea resources from contractors, assesses environmental impact assessments and supervises mining activities. **Hence, statement 1 is not correct.**
- India was the first country to receive the status of a ‘Pioneer Investor’ in 1987 and was given an area of about 1.5 lakh sq. km in the Central Indian Ocean Basin (CIOB) for nodule exploration. **India’s exclusive rights to explore polymetallic nodules from seabed in the Central Indian Ocean Basin was extended in 2017 for five years. Hence, statement 2 is correct.**
- Rare earth minerals have unique magnetic, luminescent, and electrochemical properties and thus are used in many modern technologies, including consumer electronics, computers and networks, communications, health care, national defense, etc. They are called ‘rare earth’ because earlier it was difficult to extract them from their oxides forms technologically.
- **Rare earth minerals are present on the seafloor in international waters.** The sea floor of various oceans boasts one of the world’s largest untapped collections of rare-earth minerals. **Hence, statement 3 is correct.**
- **Therefore, option (b) is the correct answer.**

[Source: DTE](#)

