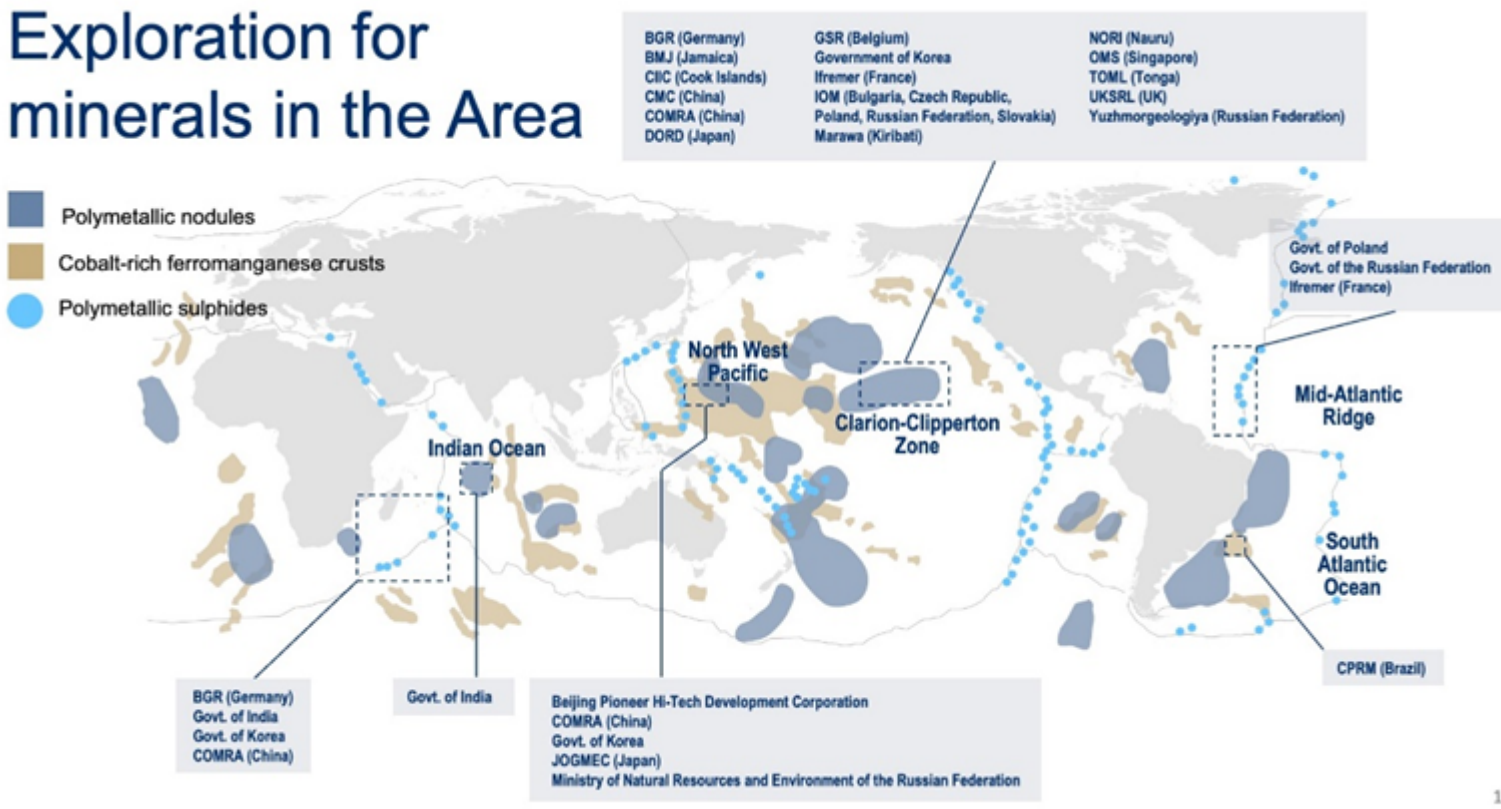
UN to start allowing deep sea mining operation

Published On: 03-04-2023

UN to start allowing deep sea mining operation

Why is in news? The International Seabed Authority has recently decided that it will start taking permit applications in July from companies that want to mine the ocean's floor

What is meant Deep seabed mining?



The deep seabed is the seabed at ocean depths greater than 200m, and covers about two-thirds of the total seafloor.

Deep seabed mining (DSM) is a potential commercial industry that is attempting to mine mineral deposits from the seafloor, in the hopes of extracting commercially valuable minerals such as manganese, copper, cobalt, zinc, and rare earth metals.

The seafloor contains an extensive array of geological features. These include abyssal plains 3,500–6,500m below the sea surface, volcanic underwater mountains known as seamounts, hydrothermal vents with bursting water heated by volcanic activity, and deep trenches such as the Mariana Trench.

These remote places support species that are uniquely adapted to harsh conditions, such as lack of sunlight and high pressure

The mineral deposits of interest are found in three habitats located on the seafloor: the abyssal plains, seamounts, and hydrothermal vents.

Abyssal plains are vast expanses of the deep seabed floor covered in sediment and mineral deposits, also called polymetallic nodules.

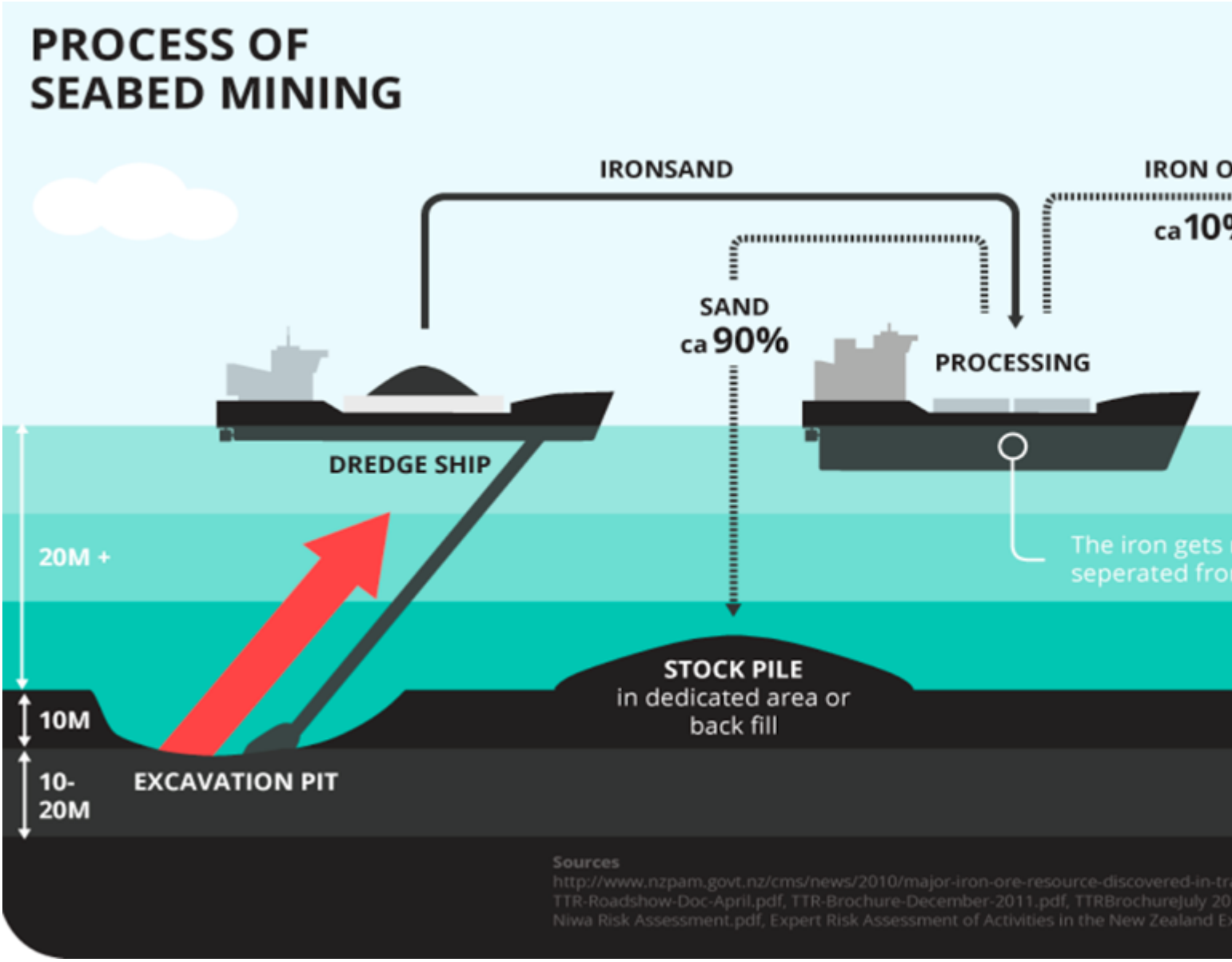
These are the current primary target of DSM, with attention focused on the Clarion Clipperton Zone (CCZ): a region of abyssal plains as wide as the continental United States, located in international waters and spanning from the west coast of Mexico to the middle of the Pacific Ocean, just south of the Hawaiian Islands.

Commercial DSM has not started, but various companies are trying to make it a reality.

Process of Seabed mining

Seabed mining involves a suction pump that pulls sand up from the seabed to a dredger ship above.

The sand will often then be sorted while still at sea, with the valuable minerals or metals extracted and exported offshore, while whatever's left is dumped back into the water causing a 'sediment plume.'



Regulation of Deep seabed mining

By May 2022, the International Seabed Authority (ISA), which regulates activities in the seabed beyond national jurisdiction (‘the Area’), had issued 31 contracts to explore deep-sea mineral deposits.

More than 1.5 million km2 of international seabed, roughly the size of Mongolia, has been set aside for mineral exploration.

To date, the ISA has only issued exploration contracts, but is developing regulations to govern the transition to exploitation.

In the absence of a mining code, which has been under discussion for nearly 10 years, the 36-member council is uncertain about the process it should adopt for reviewing applications for mining contracts.

In June 2021, the Government of Nauru notified the ISA of their intention to start deep-sea mining, triggering a rush to finalise the ISA regulations.

Mining in international waters could commence as soon as 2026; even though vital research and work to adopt the required regulations, standards and guidelines to manage deep-sea mining sustainably is far from complete.

Concerns with seabed mining

Deep-sea mining would go beyond harming the seabed and have a wider impact on fish populations, marine mammals, and the essential function of the deep-sea ecosystems in regulating the climate

There many environmental problems created by deep ocean mines, which level the ocean floor to extract materials.

The most direct impacts at mining sites are destruction of natural land forms and the wildlife they host, compaction of the sea floor, and creation of sediment plumes that disrupt aquatic life.

Nearby impacts include noise, electromagnetic effects, disruption of the larval supply, contamination and fluid flow changes.

Scientists also fear deep-water mining will alter the geochemical underpinnings of ocean life, cause the loss of important genetic resources, and disrupt the connectivity between deep oceans and surrounding oceans, potentially hindering the flow of nutrients.

Any environmental effects would also be worsened by the cumulative impacts of multiple mining operations. The difficult of deep-sea mining operations also make accidents, pollution and contamination likely