

Deep-sea mining: The case for a precautionary pause

What is a precautionary pause on deep-sea mining?

Deep-sea mining - the extraction of minerals from seabed areas beyond national jurisdiction (“the Area”) – falls under the remit of the **International Seabed Authority (ISA)** under the UN Convention on the Law of the Sea (UNCLOS). The governance and regulatory framework for mining remains incomplete, raising concerns about whether exploitation should begin at all.

Negotiations are underway at the ISA, where States are poised to determine what conditions and parameters would first have to be fulfilled, and which criteria and safeguards must be in place, before the commencement of mining (or exploitation) may be considered.

A **precautionary pause** is a temporary halt on the advancement of deep-sea mining activities in international waters until sufficient scientific, legal, and environmental safeguards are in place. Similar to a moratorium, but unlike a permanent ban, it does not preclude future mining but ensures that any decisions to proceed are based on sound science and robust frameworks.

As scientific uncertainty persists and global opposition grows, more governments are advocating for a precautionary pause on deep-sea mining to prevent irreversible harm to marine ecosystems and ensure exploitation activities do not commence until certain conditions are met.

Why is a precautionary pause necessary?

The case for a precautionary pause is rooted in scientific, legal, and governance concerns, as well as in conformity with international law.

1. The precautionary principle, scientific uncertainty and environmental risk

The deep sea is one of the least understood ecosystems on Earth, and mining could cause irreversible damage before its full consequences are even known. Scientists warn that:

- Sediment plumes from mining could smother marine life over vast areas.
- The removal of seabed habitats could disrupt ecosystems that have taken millions of years to form.
- Mining noise and light pollution could interfere with deep-sea species, many of which are uniquely adapted to darkness and quiet.

Without adequate **baseline data** on deep-sea biodiversity and ecosystem functions, there is no way to accurately predict or mitigate these risks.

The precautionary principle, enshrined in international law, mandates caution in decision-making in the face of scientific uncertainty and potential harm to the environment. In the context of **deep-sea**

mining, this principle is particularly relevant due to the largely unexplored and fragile ecosystems of the deep ocean.

The **ISA**, as the regulatory body overseeing mineral exploitation in areas beyond national jurisdiction, is **obligated under international law, including UNCLOS and related agreements**, to apply the precautionary principle. This requires the States to ensure **comprehensive environmental impact assessments, establish stringent regulations**, and, where risks are not well understood, **implement a precautionary pause** until sufficient scientific evidence can guarantee that mining activities will not cause significant or irreversible harm.

2. Legal, Economic, Equity and Procedural Risks

UNCLOS establishes that deep-sea resources are the “**common heritage of humankind**,” meaning they must be managed for the benefit of all, not just a handful of actors or private companies. However, current regulations remain **incomplete and insufficient** to ensure:

- The delivery of tangible economic benefits after the internalization of externalities.
- Fair and equitable sharing of benefits for developing countries.
- Strong environmental protections that prevent biodiversity loss.
- Clear enforcement mechanisms and liability rules for mining damage.

Compounding this risk is the “**two-year rule**,” a provision that allows a country to force ISA to fast-track mining regulations within two years or risk opening the door to unregulated exploitation. This rule was triggered in 2021, and while the ISA has not yet finalized mining regulations, companies are already preparing to submit applications for commercial exploitation in the absence of regulations.

A precautionary pause would allow states to **close legal gaps and ensure that deep-sea mining does not proceed in a rushed or unregulated manner**.

3. Alignment with global environmental commitments

Governments worldwide have pledged to protect marine biodiversity through:

- The **Kunming-Montreal Global Biodiversity Framework**, which commits to conserving 30% of the global ocean by 2030.
- The **UN Treaty on Biodiversity Beyond National Jurisdiction (BBNJ)**, which seeks to regulate activities in areas beyond national jurisdiction to prevent environmental harm.
- The **2030 Sustainable Development Goals (SDG 14: Life Below Water)**, which call for protecting marine ecosystems from degradation.

Allowing deep-sea mining to proceed before sufficient safeguards and protections are in place would directly contradict and potentially even undermine these commitments.

When should a precautionary pause be implemented?

A pause should be implemented **immediately** to prevent premature and unregulated mining. Governments must act now because:

- The first mining application could be submitted as early as **June 2025**.
- The **Authority's 30th session in 2025** will be a key moment when regulations—or the lack thereof—will determine the future of deep-sea mining.
- Some ISA member states are already pushing for mining to begin despite the absence of strong rules, creating urgency for others to advocate for precaution.

By acting before mining applications are submitted, governments can uphold their legal and environmental responsibilities without facing unnecessary political or financial liabilities. This also provides certainty to industry, as it would send a clear signal that they will have to wait.

Who supports a precautionary pause?

As of **February 2025**, at least **32 governments** have expressed explicit support for a precautionary pause, moratorium, or outright ban on deep-sea mining. These include both **small island nations** that rely on healthy oceans for their economies and **major industrialized countries** that recognize the need for science-based decision-making. Many other states take a similar stance – that commercial exploitation should not commence in the absence of robust regulations – but are yet to put a label to their positions.

Beyond national governments, skepticism towards deep-sea mining comes from:

- **Leading marine scientists** who warn that ecosystem damage could be large-scale and irreversible.
- **Indigenous groups and coastal communities** who depend on marine resources for their cultural and economic survival.
- **Other marine sectors** like the fisheries sector that are concerned about the potential impacts that could arise.
- **Companies and financial institutions** concerned about the reputational and liability risks associated with funding an untested industry.

Momentum is growing for responsible governance of the seabed rather than a rush for exploitation.

How can a precautionary pause be achieved?

Governments have multiple avenues to implement a precautionary pause within the ISA framework:

1. ISA Council and Assembly Decisions

- As a governing body of 169 member states, the **ISA Assembly** can adopt a formal decision not to authorize any commercial mining until key conditions are met.
- Any **ISA Council member** has the right to object to the adoption of mining regulations, effectively ensuring that exploitation does not proceed prematurely.

2. State-Led Initiatives

- **Regional agreements** among like-minded countries can reinforce a pause by establishing joint positions within the ISA.
- **Domestic policies** restricting the sponsorship of mining contractors can prevent companies from pursuing exploitation licenses.

3. International Advocacy and Legal Mechanisms

- Governments can align with **global biodiversity commitments** and ambitions declared through other processes (such as the upcoming UN Ocean Conference) to push for stronger ocean protections.
- The **International Tribunal for the Law of the Sea (ITLOS)** has reaffirmed that states bear direct responsibility for environmental harm caused by their sponsored mining contractors—providing a legal basis for delaying approvals until sufficient safeguards exist.

Conclusion: Why this moment matters

The world faces a pivotal decision on deep-sea mining: act with urgency now to ensure responsible ocean stewardship or risk irreversible environmental damage for the sake of short-term economic interests that will be channeled to a handful of actors and individuals.

A precautionary pause is the **only responsible choice** until the global community can answer fundamental questions:

- Can deep-sea mining be conducted **without causing significant and irreversible harm**?
- Will its economic benefits, if at all any, be **equitably shared**?
- Are there alternative ways to meet mineral demands **without threatening ocean ecosystems**?

The ISA's upcoming decisions will determine whether the deep sea remains a thriving, unexplored frontier or becomes yet another victim of resource exploitation.

What can governments do now?

- **Publicly support and advocate for the adoption of a precautionary pause at the ISA's 2025 session.**
- **Reject any mining applications** until science and regulations catch up.
- **Ensure that any future deep-sea mining aligns with – and not undermine – international commitments on ocean protection.**
- **Uphold the legal principle that seabed resources belong to all – not just private entities – and any potential mining activities must deliver for the benefit of humankind as a whole.**

The future of our shared ocean heritage depends on the choices we make today.

7 March 2025.