CRITICAL RAW MATERIALS REGULATION: OPENING THE EU DOOR TO MATERIALS EXPLOITED FROM THE DEEP SEA?

Briefing

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The Environmental Justice Foundation (EJF) exists to protect the natural world and defend our basic human right to a secure environment. EJF works internationally to inform policy and drive systemic, durable reforms to protect our environment and defend human rights. We investigate and expose abuses and support environmental defenders, Indigenous peoples, communities, and independent journalists on the frontlines of environmental injustice. Our campaigns aim to secure peaceful, equitable and sustainable futures.

Summary

On 16 March 2023, the European Commission published its proposal for a Critical Raw Materials Regulation[1], which aims to ensure a secure and sustainable supply of critical raw materials for the EU, to reduce its dependence on third countries and to increase the EU's capacity to extract, process and recycle critical raw materials. Some of these valuable metals and minerals, such as nickel, cobalt, copper, and manganese, can be found in the deep sea, making it of interest to mineral extraction ventures who would like to begin mining the deep seabed. At present little is known about fragile deep-sea ecosystems[2]. However, research suggests that mining this pristine environment for these materials could have devastating environmental impacts[3] including: biodiversity loss and habitat destruction; disruption of the oceanic carbon cycle; and the loss of livelihoods and food sources[4].

This new EU law must not inadvertently or by design open the door to commercial deep-sea mining. Consistent with the precautionary principle, the Critical Raw Materials Regulation should prevent the extraction, processing and import of critical raw materials exploited from the deep sea, unless the available scientific evidence establishes that deep-sea mining does not risk harming biodiversity and marine ecosystems or disrupting the oceanic carbon cycle.

1 The challenge of deep-sea mining

Critical raw materials (CRMs) are raw materials which are economically and strategically important for the European economy, but have a high risk associated with their supply. While these materials are currently sourced mainly from terrestrial mining, several of the raw materials considered strategic and critical under the Critical Raw Materials Regulation (CRM Reg.), such as manganese, copper, cobalt, and nickel, are also found in the deep sea[5].

The deep sea covers 65% of the Earth's surface and makes more than 95% of the Earth's living space; it harbours an enormous variety of organisms, comparable to the high biodiversity of tropical rainforests[6]. It is the last almost entirely untouched wilderness on Earth, key for the functioning of ocean ecosystem services, oceanic food webs and global climate regulation. Yet, while the available science clearly demonstrates the uniqueness and relevance of this environment, we know almost nothing about its biodiversity or the functioning of its ecosystems[7].

The deep sea, however, is of interest to mineral extraction ventures, as it is estimated that it provides vast amounts of valuable metals and minerals[8]. To extract mineral resources out from the deep sea, companies are looking to scrape, dredge and cut out portions of the seabed and pump up ore and slurry to specialised processing ships. This process is referred to as deep-sea mining (DSM).

Environmental impacts of deep-sea mining

DSM companies have not proven they can mine safely[9], and we lack sufficient scientific knowledge of deep-sea ecosystems, their biodiversity, and their role in regulating climate to allow for a comprehensive assessment of the impacts of DSM.

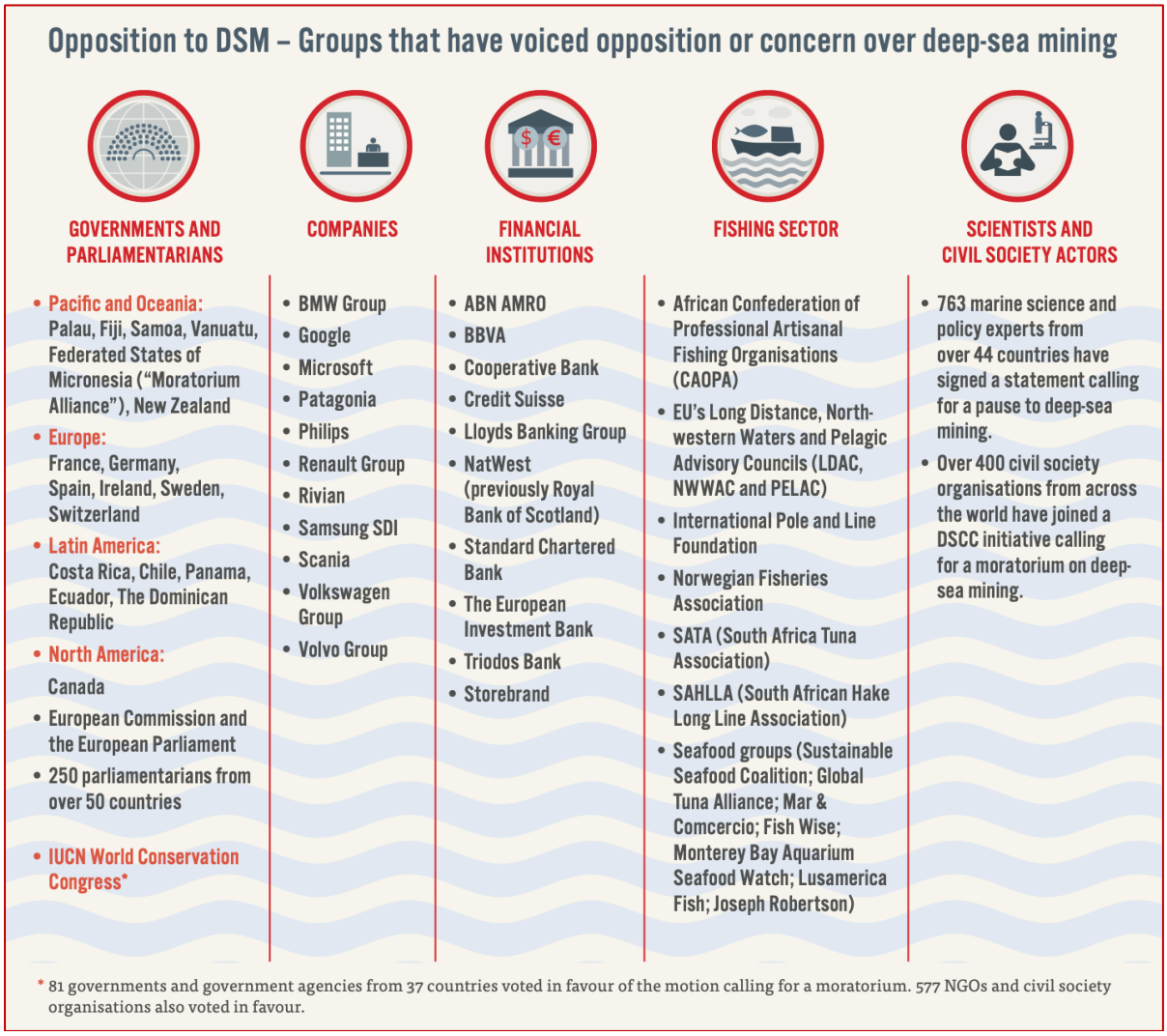
However, what we do know is that deep-sea ecosystems are highly vulnerable to disturbance, and all scientific evidence gathered so far indicates that DSM could have severe negative impacts, including:

1. **Biodiversity Loss.** DSM operations will result in the loss of biodiversity in the affected areas[10]. Mining equipment and sediment plumes can displace or harm marine organisms, causing the loss of unique species and disrupting the intricate food webs that support marine life. DSM directly destroys habitats[11], and noise and light pollution from mining activities can affect the behaviour of many marine organisms[12]. The release of sediment plumes and toxic compounds can severely damage marine fauna, extending far beyond the mined sites.
2. **Disruption of ecosystem functions.** DSM involves extracting minerals from the ocean floor, which destroys unique and fragile ecosystems that have developed over millions of years. This disruption risks transforming ecological communities, impacting food webs and critical functions performed by deep-sea ecosystems for all marine life[13].
3. **Impact on fisheries.** DSM's effects on food webs, pollution from sediment plumes and light pollution can potentially reduce fish populations and deplete prey for commercially relevant species, like tuna and snappers. This can have severe economic consequences for small island nations and large maritime powers, including EU Member States[14].
4. **Disruption of the carbon cycle.** The deep sea contains carbon accumulated over tens of thousands of years and will lock it safely away for generations to come if left undisturbed, helping mitigate climate change. DSM stirs up seafloor sediments, releasing carbon into the ocean and contributing to ocean acidification and climate change[15].

The long-term impacts of DSM on deep-sea ecosystems are uncertain, but these ecosystems have slow growth rates and limited ability to recover[16]. The effects of DSM can persist for decades or even centuries, hindering ecosystem regeneration and ecological functions[17].

In charge of the protection of the deep sea at the international level is the International Seabed Authority (ISA), which was established under the UN Convention on the Law of the Sea to organise, regulate and control all mineral-related activities in waters outside national jurisdictions for the benefit of humankind[18]. The regulatory framework for commercial mining of the international seabed is still under development[19]. The exploitation of minerals in international waters is therefore currently not allowed and DSM on a commercial scale cannot yet take place. However, in July 2021, Nauru invoked the so-called '2-year rule' which gave the ISA two years to finalise the rules and regulations for DSM (referred to as the Mining Code[20]). Although there is disagreement on the implications of the '2-year rule' in case the Mining Code is not finalised, we could see the process of approving commercial mining applications starting as early as mid-2023 (even in the absence of the regulatory framework)[21].

The push for DSM is led by only a small number of mining companies and governments with vested interests in and connections to the DSM industry[22], with fierce opposition from many scientists[23], businesses[24], the seafood industry[25], civil society actors[26], indigenous communities[27], and an increasing number of states[28] who see the harm and advocate for a stop to any potential DSM activities.



2 The Critical Raw Materials Regulation: Are critical raw materials from the deep sea even needed?

Given the likely negative consequences for the ocean's ecosystems and biodiversity as well as the oceanic carbon cycle, and in line with the EU's role as a champion for a green future and its climate targets, CRMs sourced from the deep sea have no place in the EU. It must be ensured that the new CRM Reg. provides the necessary environmental and social safeguards to prevent, in line with the precautionary principle, the exploitation of the deep sea for these materials while scientific uncertainty persists.

Importantly, it is not necessary to exploit the deep sea and destroy its unique ecosystems in order to achieve the goals and benchmarks of the CRM Reg.. Future demand for critical minerals is highly uncertain[29] and will be strongly impacted by innovations in battery technology[30], which are advancing rapidly[31], and developments in recycling[32]. Moreover, the green transition is about more than batteries, and a much wider suite of minerals will be required than those found in the deep sea[33]. Studies have

shown that a transition towards a 100% renewable energy supply can take place without DSM, even with very high projected growth in demand under the most ambitious energy scenarios[34].

Materials exploited from the deep sea will not contribute to the digital transition as major companies such as BMW, Volvo, VW, Samsung and Google have already taken a stand against DSM and committed not to use metals produced from DSM until the environmental risks are comprehensively understood[35].

The importance of a circular economy

Instead of adopting new environmentally destructive practices like DSM, our priority should be reducing the demand for virgin metals and establishing a circular economy. Research indicates that by improving recycling capacity, developing new technology and embracing a circular economy approach[36], we could reduce the cumulative demand for critical minerals, metals and rare earth elements by 58% compared to the scenario outlined by the International Energy Agency for achieving net zero emissions by 2050[37].

Recycling plays a crucial role in meeting this demand, and all stakeholders should be incentivised to retain the value of materials throughout the entire lifecycle, from raw material extraction to end-of-life stages[38]. To transition towards a circular economy, we should focus on increasing opportunities for urban mining and e-waste recovery, improving recycling processes, extending the lifespan of products, reducing individual consumption, and investing in research and development of substitution technologies.

Although some primary extraction is still necessary for the clean energy transition, there is no justification for initiating DSM operations. The short-term demand for minerals can be met by existing terrestrial mineral reserves[39]. However, any mining activities should be undertaken with utmost caution and adherence to strictly enforced environmental, social and governance (ESG) safeguards.

3 Taking a stand against deep-sea mining: An opportunity for the EU

The primary objective of the CRM Reg. is to ensure a secure of supply of CRMs for the EU in the face of predicted exponential increase in demand, by increasing the EU's capacity to extract, process, and recycle CRMs, and by diversifying the imports of CRMs. While the Regulation aims to achieve 'a high level of environmental protection'[40], it includes loopholes to circumvent this and any environmental and social safeguards specified in the Regulation. It further fails to account for cases where not enough knowledge exists regarding potential environmental impacts of CRM extraction and processing, or where agreed frameworks for assessment of such impacts are not in place. The argument of mining companies and governments advocating for DSM, that it could provide vast amounts of critical minerals from a new source with lower environmental and social impacts (despite the inaccuracy of this claim), coupled with the objective of the CRM Reg. to secure and diversify EU's supply of CRMs, and the current lack of adequate environmental and social safeguards in the proposed Regulation, could lead to the Regulation promoting DSM as an attractive prospect and to Strategic Projects on DSM and Strategic Partnerships with third countries engaged in DSM.

The CRM Reg. needs to ensure that the EU door to materials exploited from the deep sea is closed. EU Member States and EU institutions should strongly stand against DSM and ensure that projects related to DSM are not endorsed by the EU and that CRMs from the deep sea do not enter the EU market.

DSM does not fit the EU's goal for a green transition. To protect the deep sea, and in line with the precautionary principle, the CRM Reg. should not approve Strategic Projects for CRMs if there is credible scientific evidence suggesting potential environmental harm, including aggravating climate change and biodiversity loss, even if the evidence is not conclusive. EU Strategic Partnerships involving third countries should only be permitted if those countries have a regulatory framework that guarantees effective environmental protection. In addition, CRMs exploited from the deep sea should not be imported into the EU or be made available on the EU market.

By incorporating the precautionary principle as a key criteria for the Strategic Projects and Strategic Partnerships in this legislation, the endorsement of DSM-related projects would be prevented, given the current limited scientific understanding of the deep sea. Additionally, explicitly referencing this crucial principle of EU environmental law will enhance the overall environmental protection within the Regulation.

Key policy asks:

- **The EU Critical Raw Materials Regulation (CRM Reg.) should prevent the extraction, processing and import of critical raw materials exploited from the deep sea.** Consistent with the precautionary principle, the CRM Reg. must not allow Strategic Projects or Partnerships and entry of critical raw materials to the EU market, in cases where the available scientific evidence establishes a plausible risk of environmental harm or of disrupting the oceanic carbon cycle, even if the evidence is inconclusive. Concretely this includes:
    - A new recital should be introduced highlighting the **importance of preserving the ocean from deep-sea mining**, in line with the precautionary principle and a high level of environmental protection.
    - The **criteria for approval of Strategic Projects and Partnerships** should ensure that projects involving the extraction or processing of materials from the deep sea cannot be approved under the Regulation.
    - The **rules on free movement** should ensure that no materials exploited from the deep sea can be made available on the market or put into service.

- **Increased focus should be placed on reducing the Union's demand for critical raw materials and advancing the circular economy model.** The EU's priority needs to shift from economic growth to meeting people's needs, while staying within the Earth's ecological limits.

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