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(Submitted via email to mlodge@isa.org.jm)

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Re: The Two-Year Rule contained in section 1(15) of the Annex to the 1994 Implementing Agreement

The Deep-Ocean Stewardship Initiative (DOSI), an accredited Observer at the International Seabed Authority (ISA) since 2016, would like to express its concern over the recent triggering of the ISA's two-year rule pursuant to Section 1, paragraph 15 of the Annex to the 1994 Implementing Agreement by Nauru.

Based on current scientific understanding, deep-seabed mining will result in biodiversity loss and irreversible harm to deep-sea ecosystems. To manage this nascent industry effectively, decision-making must be based on robust science. Scientists have just begun to understand biodiversity, ecosystem function and resilience in the deep ocean, with many scientific campaigns undertaking research in regions of exploration contract areas. However, it is known that the deep ocean contains the largest suite of ecosystems on Earth and a vast reservoir of biodiversity found nowhere else, including at the habitats targeted for mining: ferromanganese-encrusted seamounts, polymetallic nodules in abyssal fields and polymetallic sulfides at hydrothermal vents.

The deep ocean plays an essential role in climate regulation, fisheries production, and global cycles of elements such as carbon, as well as acts as a reservoir for pollutants and carbon and other nutrients. Deep-sea life also contains marine genetic resources that can be used for biomedical applications including pharmaceuticals, industrial agents, and biomaterials. There are also non-material and/or cultural benefits that should not be underestimated: science and research, education and outreach, aesthetic value including the arts and humanities, entertainment, and importantly, spiritual significance associated with the origin of several cultures including Pacific peoples, as well as emotional and historical value.

Scientists are also only just beginning to understand the ecological impacts of deep-seabed mining: extraction of the seafloor and the production of plumes, noise and light will result in direct and indirect destruction of biodiversity, habitat and function. Many ecosystem functions depend directly on the mineral resources and biodiversity that inhabit them, which may be impacted on geological time scales. Furthermore, deep-seabed mining will act as a further stressor to ecosystems already impacted by pollution, bottom trawling, and climate change.

For most areas where deep-seabed mining exploration contracts have been granted, there is little known about what species live there, how long they live, when, how often and how much they reproduce, what they eat and what eats them. The ecological communities in these areas have not been fully characterized, including question remaining about whether organisms' numbers fluctuate from season to season or year to year, whether there are ecological connections through animal movement between different areas, and how ecosystems function. The international community is not in a position to reliably predict the extent and severity of expected impacts from commercial mining, including the plumes, contaminant release and toxicity, noise, vibration and light, how this would affect marine life including mammals, and any direct or indirect effects on commercially important fisheries. Available tools, such as scientific models that can help predict impact, require baseline data that are not yet fully available, and small-scale *in situ* tests to verify these models' accuracies only go so far. Scientific approaches such as these take time.

As a consequence of this lack of knowledge, it is, at present, possible only to develop plans that will afford protection to these ecosystems using rules of thumb from the very different coastal ecosystems. Rushing the regulations to meet a two-year goal would run counter to the precautionary approach, which requires Member States to err on the side of caution. For example, the ISA has yet to agree on overarching Strategic Environmental Goals and Objectives, define 'serious harm' and associated adverse change, as well as specific criteria to operationalize, measure and monitor it, and put in place effective regional environmental management plans.

Additionally, we believe that triggering the two-year rule will not allow much of the relevant scientific research currently underway to be completed, communicated, and taken into account, preventing critical scientifically informed decision making. Two years is not a sufficient period for acquisition of the necessary scientific research to inform best environmental practices. The UN Decade for Ocean Science (2021-2031) offers a timely opportunity to gather the resources and expertise required to fill some of the deep-sea science gaps outlined above.

Co-signed by:

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