deepsea conservationcoalition

Deep-sea mining: who stands to benefit?

It is vital that before mining of the international seabed is given the green light, a fundamental question is considered: could it be that we – humankind – stand to lose far more than we could gain if the member nations of the ISA permit deep-seabed mining?

Unless and until it can be proven that mining of the international seabed will provide global net benefit, and equitably support the world's poorest and most vulnerable populations, it should not be permitted to proceed.

UNCLOS and the International Seabed Authority

The International Seabed Authority (ISA) was established by the United Nations Convention on the Law of the Sea (UNCLOS) to manage seabed mineral activities in the international area of the deep ocean "for the benefit of [hu] mankind as a whole ... taking into consideration in particular the interests and needs of developing states".[1] UNCLOS also calls for the "equitable sharing of the financial benefits" of deep seabed mining among the 167 ISA member countries, plus the European Union.[2]

No ISA member country is allowed to mine in the international area of the seabed without ISA permission. They are in the process of negotiating regulations that will enable such commercial-scale extraction of minerals. Any country or company that is granted permission to mine by the ISA must 'share the wealth' with all member countries. At the same time, in granting any permits to mine, the ISA must "ensure effective protection for the marine environment from harmful effects" of seabed mining activities, as required under UNCLOS.[3]

Below: a newly discovered worm species from APEI 4, CCZ.

Potential revenue from deep-sea mining

A key element of the ISA's regulations, yet to be agreed, is how financial benefits of deep seabed mining will be shared. ISA member States are currently discussing a royalty regime through which companies or other contractors (for example, state-owned enterprises) issued with mining contracts by the ISA would pay a fee to the ISA, which would be shared equitably among member countries.

To aid negotiations, the ISA Secretariat contracted a team from the Massachusetts Institute of Technology (MIT) to assess the economics of deep seabed mining for polymetallic nodules in the Clarion Clipperton Zone (CCZ). The CCZ is an area of the eastern Pacific Ocean where the ISA has to date, approved 17 contracts to explore for minerals across some 1.3 million square kilometers of the seabed. MIT estimated that the annual operating costs of a nodule mining operation in the CCZ, including refining the nodule ores, would be between US$0.6 and US$1.1 billion, and that the annual gross revenue from the operation would be around US$2.3 billion per year at today's prices,[4] meaning that revenues would exceed costs by US$1.2-1.7 billion.[5]

In June 2019, MIT recommended several options for the royalty regime based on the economics of nodule mining, the corporate tax a company would be likely to have to pay its sponsoring State, and to allow for a sufficient profit incentive for a company to seek an ISA contract to mine. MIT concluded that the annual amount that would be received by the ISA in royalties for each CCZ mining operation under their recommended scenarios would range from approximately US$80-176 million per year.[6] This would equate to a net present value of between US$285-660 million over 30 years in today's dollars, or approximately US$60,000

to US$130,000 per year to each ISA member country in royalty payments.[7] This figure drops further, as the royalty payments would be first used to cover ISA administrative costs before funds were distributed to member countries.[8] In these scenarios, MIT assumes that sponsoring States would, on average, levy a 25% corporate tax on profits from the mining company – a rate at which the sponsoring State would receive almost as much revenue from taxing a company's mining operation as the ISA would receive in royalties from the same operation.[9] This is a highly debatable assumption, as at least one sponsoring state (Nauru) has contractually agreed not to levy any corporate tax on its contractor at all.[10]

The African Group of ISA member countries reached a similar conclusion in a joint statement to the Council of the ISA in February 2019. It said:

"In net present value terms the total compensation to mankind with a 2% and then 6% royalty would be $490 million. This represents just $2.93 million for each of the ISA's 167 members (excluding the EU) over the 30-year life of the exploitation contract. This means that each of these ISA members would receive on average in net present value terms, approximately $97.8 thousand per year. The African Group does not consider that this is fair compensation to mankind."[11]

Indeed, almost $100 thousand per country per year does not sound like fair compensation to humankind for the loss of our and future generations' common heritage and would contribute very little to achieve the "overall development of all countries" – the aim of UNCLOS' seabed mining regime.[12]

The ISA would have to hand out contracts for between 45–100 nodule mining operations to generate annual royalty payments ($US7.7 billion) equivalent to US$1 per year for each person on Earth today. To reach the equivalent of US$1 per person per year over the next 30 years, on the basis of the net present value used by MIT, the ISA would have to hand out several hundred mining contracts for nodules. A fraction of this number of mining operations would impact hundreds of thousands to millions of square kilometers of seabed, cause widespread damage, potentially flood the market for at least some of the metals found in the nodules (cobalt, copper, nickel, manganese) and depress prices. This would result in even lower royalty payments to the ISA, and bring negative impacts on the countries currently dependent on land-based mining. The sums do not add up to the "benefit to [hu]mankind as a whole" called for by UNCLOS.

Value of the common heritage of humankind

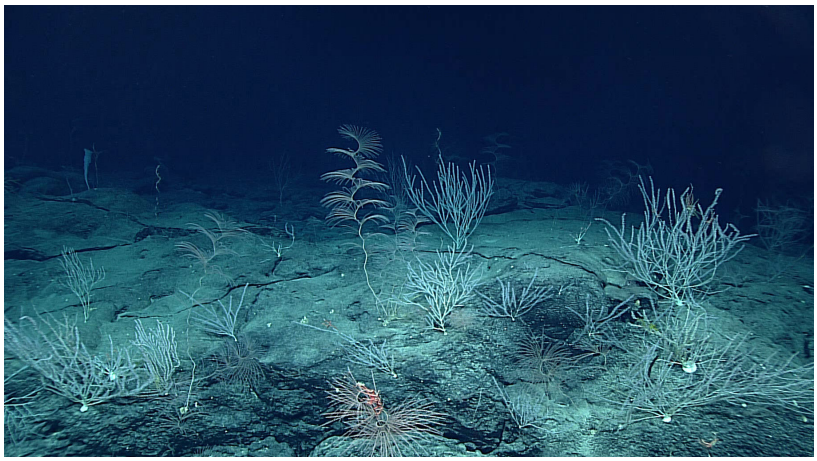
It is important to consider whether the royalty payments to the ISA would provide sufficient compensation for the loss of biodiversity, destruction and degradation of deep- sea ecosystems, and impacts on the broader marine environment given the diversity and vulnerability of species in areas where the ISA would permit mining.

The UN's 1st World Ocean Assessment stated that the deep sea "constitutes the largest source of species and ecosystem diversity on Earth… and supports the diverse ecosystem processes and functions necessary for the Earth's natural systems to function".[13] Yet, we still know very little about the deep ocean and the vulnerability of its ecosystems to human stressors.

Multiple factors make it difficult – if not impossible – to calculate the value of the international deep-sea and associated ecosystems and species, including:

- The economic value of the species and biodiversity that may be affected by seabed mining;
- The role of the deep sea in regulating planetary systems, including global climate and CO2 sequestration;
- The potential for discoveries of new species and ecosystems that may expand our understanding of life on Earth;
- The potential to derive benefits from the genetic material of deep-dwelling organisms (extremophiles) for medicines and other purposes;
- The interconnection between deep ocean marine life and ecosystems throughout the water column on which humans already depend.

We currently have neither the knowledge nor the data required to assess whether humankind stands to lose more than we could gain if the



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Below: a high-density field of corals, including the spiraling Iridogorgia magnispiralis (center), which can grow as long as 5 meters.

ISA opens the deep ocean to industrial mining. Beyond this, biodiversity has intrinsic value as life on this planet, irrespective of any monetary value humankind could potentially assign it. This was recognized by the UN General Assembly in its Resolution 61/105, adopted in 2006, committing States to take urgent action to protect vulnerable deep-sea ecosystems on the high seas "from destructive fishing practices, recognizing the immense importance and value of deep-sea ecosystems and the biodiversity they contain."[14]

Cost of deep-sea mining to humankind

The MIT study showed that deep-sea mining for polymetallic nodules would provide little in the way of compensation, either to ISA member countries or as a "benefit to humankind as a whole" in the form of royalty payments. However, deep-sea mining licensed by the ISA could be highly profitable to individual companies or state-owned enterprises.[15] Where an ISA contractor is a state-owned company or government agency, the country would keep the profits. Where a contractor is a private sector company, financial benefits may also flow to individual countries if they can effectively tax these companies- though as noted above, at least one sponsoring State has agreed not to tax its sponsored contractor at all – its only revenue would be from royalties.

Sponsoring States

Under UNCLOS, a company must be sponsored by an ISA member country – the sponsoring State – to obtain a contract from the ISA to mine. The main financial benefit to the sponsoring State in theory is that it can tax the mining company directly on its profits, rather than only getting 1/167th of the revenue paid into the ISA royalty regime. Under the rules of the ISA, a State can sponsor more than one company, or the same company for more than one ISA contract, or can itself obtain multiple contracts from the ISA.

There are currently 21 sponsoring States in total, including six who jointly sponsor one contract. MIT estimates that sponsoring States might be able to make over US$3 billion in corporate taxes (at a 25% corporate tax rate), and that a profit of US$9-11 billion could be made by the company over a 30-year mining operation. However, this national State tax "take" will not be achieved if there are lower tax rates, tax exemptions, transfer pricing arrangements, or other tax avoidance mechanisms in place. In that scenario, the beneficiaries of the excess profits are the mining company owners, not the ISA or its developing State members.

There is also a lack of transparency in some of the current arrangements for ISA contracts. In a number of cases it is unclear whether the State sponsoring the ISA contract is in fact the same country in which significant tax will be paid and who the ultimate beneficiaries will be. A potential legal disconnect between who bears the legal risk and who stands to benefit could further exacerbate global inequity between developed and developing States.

Making the rich richer?

In 2011, the ISA started to award contracts to private sector companies, owned by shareholders and parent companies located in developed nations. If those companies are permitted to mine the international seabed, the vast majority of profits will flow to the high-net worth individuals and multi-billion dollar investment companies or corporate conglomerates who own the companies' shares. UNCLOS was based on principles of equitable benefit-sharing and prioritizing the needs of developing countries. Under the current system, the ISA's awarding of contracts, particularly for areas reserved for developing countries, combined with structuring and contractual arrangements would contradict these fundamental principles.

Of the 31 exploration contracts the ISA has issued to date, at least eighteen are held by only seven countries – China, France, Germany, India, Japan, Russia and South Korea – through their state- owned companies or government agencies and ministries. Another seven

contracts are effectively in the hands of private companies: The Metals Company (formerly DeepGreen), a Canadian company listed on the NASDAQ stock exchange, Seabed Resources, a subsidiary of US based Lockheed Martin; and Global Sea Mineral Resources, a subsidiary of the Belgian company DEME Group.

Under Article 140 of UNCLOS, Activities in the Area shall be carried out for the benefit of humankind as a whole and that he ISA shall provide for the equitable sharing of financial and other economic benefits derived from activities in the Area through any appropriate mechanism on a non-discriminatory basis, in accordance with Article 160, Paragraph 2 (f) (i). However, that mechanism and the accompanying rules, regulations and procedures are far from being agreed. The financial mechanism for the distribution of benefits must reflect the risks to the deep-sea, be inclusive of stakeholder interests and deliver optimal returns to all humankind.[16]

How to say 'no'?

Once the ISA starts awarding mining contracts, and if the initial mining companies turn a profit, more companies and sponsoring States would be prompted to apply. Given the institutional challenges the ISA faces as a regulatory body, and the UNCLOS enshrined 'non-discrimination' principle, it may prove difficult for the authority to deny further applications for mining. The economics of this industry are likely to be the main driver of its development and could lead to a 'gold rush' of mining in the deep sea.

Recommendations

Unless and until it can be proven that mining of the international seabed will provide global net benefit, and equitably support the world's poorest and most vulnerable populations, it should not be permitted to proceed. This is a core principle of the UN 2030 Agenda, as well as UNCLOS. Valuation of the deep sea and of the damage caused to it is fundamental to this assessment.

In order to understand the trade-offs involved, the ISA should prioritize scientific research of deep-ocean biodiversity and ecosystems and their role in the ecology and climate of our planet. This information will be useful in filling data gaps on the economic value of the living resources of the international deep seabed in its undisturbed state as well as the true cost of mining (including pollution, carbon footprint, impacts on commercial, recreational and subsistence fisheries, the opportunity costs of alternative uses and the question of intergenerational equity).

The ISA should shift its notion that mining is inevitable, stop awarding new exploration contracts and manage the expectations of its existing exploration contractors. There should be a moratorium on any mining of the deep seabed until scientific and economic understanding is significantly improved and used to inform a transparent and inclusive policy debate, and the detrimental effects of mining are prevented.

Enhanced scientific understanding and societal debate around equity and consumption issues would be more beneficial to humankind than a payout to a select few at the cost of permanent damage to deep-sea ecosystems and the life they support.

About the DSCC

The Deep Sea Conservation Coalition (DSCC) was founded in 2004 to address the need to prevent damage to deep-sea ecosystems and the depletion of deep-sea species on the high seas from bottom trawling and other forms of deep-sea fishing. The DSCC is made up of over 90 non-governmental organizations (NGOs), fishers organizations and law and policy institutes, all committed to protecting the deep sea.

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Endnotes

1. UNCLOS Article 148
2. UNCLOS Article 140
3. UNCLOS Article 145
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