SDG 14

The role of transnational corporations and extractive industries in seabed mining, and the impacts on oceans health and food security

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You reap what you sow.
Moana (sea). Rich! Moana (sea)
But now mind got mines.

Haiku by Tekura Moekaá, 2014

Despite the importance of a healthy Pacific Ocean, evidence is mounting that this unique ecosystem is in real danger from anthropogenic threats such as overfishing, habitat destruction, and pollution and probably the most severe threat of all, climate change and resulting sea level rise. The rush to mine the deep seas is representing the newest frontier of extractive industry and perhaps the biggest threat to the world's oceans in the 21st century. There is a significant concern that seabed mining has the potential to cause major environmental destruction to the entire Pacific Ocean and would seriously undermine the implementation of SDG 14, to conserve and sustainably use the oceans, seas and marine resources. The fact that the International Seabed Authority does not have an agreed policy on the sustainable management of seabed minerals yet, points to the significant global gap in oceans governance.

Global race to secure access to minerals

Economists are describing a phenomenon known as a super cycle in which the speed and scale of the increase in demand, particularly by emerging economies for minerals, are expected to generally result in supply lagging behind demand, making seabed mining an imminent and some say inevitable venture. Seabed mining is today considered by some as an alternative to terrestrial sources of minerals which are rapidly diminishing due to increasing demands by emerging economies and sometimes unreliable supply from key export markets, particularly in Africa, China, Russia and South America.

Deep sea mining has been heralded as the answer by transnational corporations and mineral seeking countries, such as EU member states, Japan and the USA.

In 2008, the European Commission (EC) adopted its raw material initiative which set out a strategy for securing reliable and unhindered access to raw materials.[1] According to a 2008 EC paper, that is necessary for at least 30 million (European) jobs dependent on the availability of raw materials in critical sectors such as construction, chemicals, automotive, aerospace, machinery and equipment, which the paper estimates provide a total value added of EUR 1,324 billion.[2] Subsequently, the EU launched several initiatives including the European Technology Platform on Sustainable Mineral Resources geared towards the development of deep sea mining technology.

1 Commission of the European Communities (2008).
2 Ibid., p. 2.

There is growing worldwide competition for marine mineral deposits. The EU sees significant competitive potential in what it calls the 'underexplored' minerals on the sea floor which contain valuable raw materials such as copper, zinc, gold, silver and rare metals. The EU is highly dependent on imports of 'high-tech minerals' such as cobalt, platinum, rare earths and titanium, which are increasingly essential to the development of new technologies.

The irony is that sophisticated products such as environmentally friendly hydrogen fuel-based cars require platinum-based catalysts and electric cars require lithium. It seems to be contradictory that the EU is pushing for an untested and highly risky environmental form of mining to pursue the development of environmentally friendly products.

Japan, the world's third biggest economy and a mineral-dependent island nation leads efforts to exploit seabed minerals.[3] It has made steady progress in developing the technology needed to exploit unconventional deep-water material. Under international maritime law, Japan holds sway over the 200 nautical miles (230 miles) from its shore, the world's sixth-largest Exclusive Economic Zone (EEZ). Like the EU, Japan has progressed on its rare earths diplomacy initiative and has invested in building capacities including opening up a Rare Earth Research and Technology Centre in Hanoi, Vietnam. Trial operations are expected to begin in Japanese waters by the end of 2017.

Great uncertainty and growing concerns over potential impacts of deep sea mining

Despite the significant financial investment in technological development and industry players talking a good game, there are no commercial deep sea mining activities to date and prospects have been delayed repeatedly.

There are significant uncertainties regarding

1. the legal framework,
2. the commercial and economic feasibility of such ventures, and
3. the environmental and social costs of large-scale deep sea mining.

In a Japan Times article, a geologist from GEOMAR-Helmholtz Centre for Ocean Research in Germany stated that the actual value of the minerals beneath the ocean floor remains highly uncertain.[4] This view is confirmed by the World Bank in its Pacific Possible series, which argues that deep sea mining "has unknown associated risks."[5] Observations so far indicate that seabed floor deposits targeted for mining could amount to 600 million to 1 billion tonnes of minerals, including 30 million tonnes of copper and zinc.[6]

Industry leader, Nautilus Minerals Inc., a Canadian company is the holder of the largest number of exploration licenses and the first commercial license in the world. Nautilus Minerals, in its Annual Information Form for 2015, admits to the significant high-risk and speculative nature of the business "[...] which even a combination of careful evaluation, experience and knowledge may not eliminate."[7]

The company states that the high-risk nature of the business relates to exploration costs, untested techniques and equipment, ongoing community agitation against the project and acquisition rights to potential deposit of minerals. As an exploration company that has no production history operating in an field where there is no precedent setting, Nautilus expects to

3 Suga/Suzuki (2016).

4 www.japantimes.co.jp/news/2017/02/20/business/demand-increases-rare-earth-metals-deep-sea-mining-gets-second-look/#.WParQPmGMdUSource.

5 World Bank (2016), p. 10.

6 www.japantimes.co.jp/news/2017/02/20/business/demand-increases-rare-earth-metals-deep-sea-mining-gets-second-look/#.WRXSZ8akJaQ.

7 Nautilus Minerals Inc. (2016), p. 59.

incur losses in the future and cannot be certain of the commercial quantities or grades of minerals that will be recovered.

Mining companies and governments are trying to extract valuable metals and minerals from depths ranging from 400 to 6,000 metres below sea level, some of these minerals are located close to coastal communities whilst others are further offshore. Waters deeper than 200 metres make up 65 percent of the world's oceans, and are already vulnerable to human activities – seabed mining poses a new threat. Many of these minerals are found in fragile ecosystems such as hydrothermal vents raising concerns amongst the scientific community. Professor Richard Steiner in a Huffington Post article argued that the discovery of deep sea hydrothermal vents in 1997 at the Galapagos Rift stunned the world of science, as these vent systems rely entirely on chemosynthesis rather than photosynthesis – the first ever known.[8]

Only 300 of these deep sea vent systems have been discovered so far, and it is estimated that perhaps only 500 – 5,000 may exist in the world ocean, making this one of the rarest ecosystems in the earth's biosphere. Biologist Stace Beaulieu with the Woods Hole Oceanographic Institution has warned that hydrothermal vent ecosystems that are ecologically and biologically significant may be subject to a catastrophic impact of mining with a loss of habitat and associated organisms.[9] Scientists have also warned about the cumulative impacts which could eventually cause regime shifts and alter deep-ocean life support systems such as the biological pump and nutrient recycling.

A Blue Ocean Law report commissioned by the Pacific Network on Globalisation pointed out that even a cursory look at the existing scientific literature establishes the following as likely outcomes of seabed mining:[10]

1. species extinction and loss of biodiversity;
2. sediment plumes and tailings having the potential to pollute the entire water columns;
3. the uptake of heavy metals and toxins by marine animals, including commercial fisheries (such as tuna);
4. the disturbance of marine mammals from constant noise and light in the water;
5. the risk of oil spills and accidents from increased vessel and surface traffic;
6. the destruction of coral reefs through increased acidity of water;
7. the potential for induced volcanism or seismic activity; and
8. increased carbon emissions.

Countries including New Zealand, Australia, Namibia and Mexico which have significant regulatory and monitoring experience and abilities have adopted a strong cautionary stance on seabed mining exploratory activities, carefully weighing the uncertain benefits against impacts in an atmosphere of pronounced uncertainties.

In 2012, the Australian Northern Territory government implemented a three-year moratorium on conducting both exploration and seabed mining in the coastal waters of the Northern Territory, and

8 Steiner (2016).

9 www.japantimes.co.jp/news/2017/02/20/business/demand-increases-rare-earth-metals-deep-sea-mining-gets-second-look/#.WRW19MakJaR.

10 Blue Ocean Law (2016b).

subsequently placed a total ban on seabed mining in recognition of the rights of indigenous peoples as well as the potential impact on key marine industries.[11]

In 2015, the Environmental Protection Authority of New Zealand refused to grant an exploratory license to mine phosphorite nodules on the Chatham Rise on the basis of the precautionary principle, arguing that the significant and permanent impact of mining outweighs the economic benefits of the project.[12] In 2013, Namibia established a ban on seabed phosphate mining while Mexico's federal environment authority denied a license for an offshore phosphate mining venture in 2016.[13]

The UN resident coordinator in Papua New Guinea has weighed into the debate by stating that seabed mining causes major environmental destruction not only to the communities in the province of New Ireland but to the entire Pacific Ocean.[14] He went on to add that seabed mining would be against SDG 14 which places significant importance for the conservation and the sustainable use of the ocean, seas and marine resources.

The Pacific Context

The rush to mine the deep seas is gaining momentum, representing the newest frontier of extractive industry and perhaps the biggest threat to the world's oceans in the 21st century.

Much of this modern day 'gold rush' is unfortunately happening in the Pacific where government capacity is low – particularly in policing, regulation and enforcement of marine areas –, our governments have a very poor track record on land-based mining, and the need for new sources of revenues for government coffers are extremely high, a situation which lends itself to abuse by multinational corporations.

Papua New Guinea was the first country in the world to issue a commercial license to Nautilus Inc. to begin mining by 2019. Across the Pacific Ocean, island nations such as Cook Islands, Fiji, Kiribati, Tonga, Solomon Island and Vanuatu have all issued exploration licenses. In the case of Vanuatu, over 143 licenses were issued without the knowledge of the parliament and the citizens of Vanuatu.

The scramble for seabed control, the last frontier, by multinational companies and western governments has proceeded largely unimpeded, with vast swathes of seabed (hundreds of millions of square kilometres) already licensed for exploration and future exploitation

Before the fundamental question has even been asked as to whether the inhabitants of the Pacific want or need seabed mining, seabed mining ventures are legitimized through the language of regulatory standards and environmental protection. Interested actors – in this case, the Secretariat of the Pacific Community, funded by the EU and the IMF – have developed model legislative frames for countries to be adopted and implemented at the national level. They serve as a green light to industry. The majority of the legislation developed at the regional and national levels has been undertaken without consultation or input from civil society, local communities, or, notably the indigenous groups most likely to be impacted by seabed mining activities.

Research commissioned by the Pacific Network on Globalisation and undertaken by Blue Ocean Law found significant flaws in the draft model legislation which overemphasizes the potential benefits, thereby creating a climate favourable to industry and deep sea mining operators.[15] It advises States to incentivize investors by providing an environment that fosters investment, recommending that states provide predictable and stable governance. The draft model legislation adopted by the majority of the Pacific Islands

11 www.abc.net.au/news/2013-06-12/groote-eylandt-seabed-mining-total-ban-nt-govt/4749576.

12 Environmental Protection Authority of New Zealand (2015).

13 www.earthworksaction.org/earthblog/detail/victory_mexico_seabed_mining_project_scrapped#.WRm5H8akJaQ.

14 https://ramumine.wordpress.com/2017/04/21/un-against-experimental-seabed-mining-in-png/.

15 Blue Ocean Law (2016a).

focuses heavily on ensuring a clear licensing regime for industry while minimizing opposition from civil society.

The draft model legislation fails to provide the environmental safeguards and protect the rights of Pacific people. The models proceed on the assumption that the activities are likely to take place far in the deep ocean away from where communities live and accordingly the impacts are "extremely minimal" or, alternatively, that deep sea mining activities have "almost no impact" and therefore governments should only apply an environmental impact assessment (EIA) where necessary. The framework intentionally minimizes the importance of State adherence to the precautionary principle, a binding international legal norm, and the mandatory requirement of an EIA.

Along a similar vein, the framework relegates the concerns and interests of indigenous peoples to the sideline, largely ignoring their rights to territory, culture and resources. Specifically there is no mention of indigenous peoples' rights to "free, prior and informed consent" in the development of activities which may potentially affect them. Despite denials to the contrary, communities in both Papua New Guinea and Tonga are already reporting impacts from exploratory seabed mining activities. In Papua New Guinea, villagers have reported an increase in the frequency of dead fish washing up on shore, including a number of unusual deep-sea creatures hot to the touch, as well as excessively dusky and murky waters. They also suspect that the noise of exploratory drilling and sampling may have chased sharks from their traditional grounds in the Bismarck Sea, impacting indigenous practice of shark calling.

An independent review of the Environmental Impact Statement for the proposed Nautilus Minerals Solwara 1 seabed mining project in Papua New Guinea from 2009 confirmed some of the communities' reports about impact.[16] It points to insufficient treatment of damage to highly valuable endemic benthic fauna, impact on pelagic (water column fauna); risks of leakage from the discharge pipes; and the potential vertical and horizontal transporting of sediment plumes and pollutants onshore and into contact with marine seafood chains affecting the livelihoods of communities.

In Tonga, prospecting for seabed minerals has increased the number of large vessels operating in Tongan waters, including around prime fishing spots for local fishermen. According to the local fishermen, the presence of these large vessels has disturbed fish populations and forced fishing boats to make long detours to find fish in less crowded waters. Local fishermen interviewed argued that they feel like they are relegated to an increasingly narrow area of the sea.

Furthermore gaps and oversights in the legislative framework could expose individual countries to liability – including compensation claims – under established international law for harms resulting from seabed mining activities under their control, both within national jurisdictions and beyond national jurisdictions. The general failure to incorporate statutory provisions to provide sufficient environment protection, as well as the norm of "free, prior and informed consent" for indigenous peoples represent serious violations of international legal obligations.

The unbalanced promotion of benefits from seabed mining is particularly evident in the cost-benefit analysis of prospective seabed mining off the shore of Papua New Guinea, the Cook Islands and the Marshall Islands by the Australian consultancy firm Cardno.[17] Given the admitted uncertainties and paucity of knowledge about the seabed, the very notion of a cost- benefit analysis is premature, in that the costs are still largely unknown and unknowable until further research can be done. Yet the widespread promotion of the cost-benefit analysis amongst island countries is contributing to a general attitude that seabed mining is a gold mine, waiting to be stripped, rather than a potential minefield of human, environmental and regulatory burdens.

16 Steiner (2009).

17 Cardno (2016).

Conclusion

SDG 14 on the conservation and use of oceans is the place to situate the issue of seabed mining and to address the international communities' obligations to the sustainable management of all oceanic resources. The fact that the International Seabed Authority does not have an agreed policy on the sustainable management of seabed minerals yet points to the significant global gap in oceans governance on seabed minerals and places the burden of governance on Pacific Island states and their people as a testing ground.

Members of the international community have already established and a adopted strong cautionary stance on seabed mining within national areas of jurisdiction that can assist in and inform global governance of seabed minerals. As stated above, countries including New Zealand, Australia, Namibia and Mexico, which have significant regulatory and monitoring experience and abilities, have adopted a strong cautionary stance on seabed mining exploratory activities, carefully weighing the uncertain benefits against the impacts in an atmosphere of pronounced uncertainties.

There is a significant concern that seabed mining has the potential to cause major environmental destruction to the entire Pacific Ocean and would contradict SDG 14 which places significant importance on the conservation and sustainable use of the ocean, seas and marine resources.

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