

SAFEGUARD
— OUR —
SEABED

Seabed mining a global threat to our oceans

International context

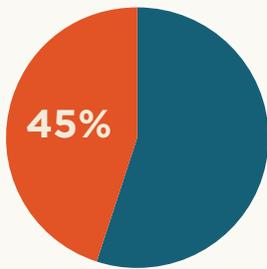
Bulk marine sediment mining has commenced in no other country's exclusive economic zone due to environmental and socio-economic risks.

It is important to differentiate between seabed mining within the territorial waters of nations and seabed mining in the high seas or 'the Area' that lies beyond national jurisdictions.

In the case of the high seas, seabed mining is governed by **United Nations Convention on the Law of the Sea (UNCLOS)** and associated Mining Codes and regulated by the **International Seabed Authority**¹. Seabed mining applications that fall within a country's exclusive economic zone are regulated by that country's domestic law. National jurisdictions usually extend to 200 nautical miles (370 km) seaward from baselines running along the shore.

How is seabed mining regulated in the high-seas?

Seabed mining in the high seas is regulated by a single organisation, the **International Seabed Authority**. Decisions to grant exploration and mining contracts are determined by the Legal and Technical Commission. The Commission currently consists of only 24 members, who are elected for a period of 5 years. The Commission functions include issuing deep sea exploratory and mining licences, review of applications for plans of work, supervision of exploration or mining activities and the assessment of the environmental impact of such activities.



Should the fate of 45% of the planet's surface be decided by 24 people?

THE HIGH SEAS
REGULATED BY THE ISA
260 MILLION KM²

NATIONAL JURISDICTIONS
EXCLUSIVE ECONOMIC ZONES
85 MILLION KM²

THE MINING CODE

The Mining Code is the set of rules, regulations, decisions and procedures issued by International Seabed Authority to regulate prospecting, exploration and exploitation of marine minerals in the international seabed area, the Area beyond the limits of national jurisdiction. The Code falls within the general legal framework established by UNCLOS (1984) and the Implementing Agreement (1994) related to deep seabed mining.

How many exploration or mining licenses have been granted in the High Seas?

Three types of resources have been regulated by the International Seabed Authority in order to facilitate exploration and exploitation: polymetallic sulfides (seafloor massive sulfides formed at hydrothermal vents); polymetallic nodules (manganese nodules on abyssal plains); and cobalt-rich ferromanganese crusts that form on seamounts. The International Seabed Authority has to date issued exploratory licences for seabed mining **across 1.2 million km² of ocean floor**.

IT HAS APPROVED 26 DEEP SEA EXPLORATION CONTRACTS

The contracts are predominantly in the **Clarion-Clipperton Fracture Zone, Central Indian Ocean Basin, South West Indian Ridge, Central Indian Ridge, the Mid-Atlantic Ridge and the Western Pacific Ocean**. These contracts allow rights holders to explore specified areas outside national jurisdictions. Under Regulations, each contractor has exclusive right to explore an initial area of 150,000 km².

The nature, status and future of seabed mining in the high seas will have a direct impact on policy directions of nation states. It is thus of concern that holders of exploration contracts suggest that commercial scale seabed mining will be ready to commence within five years.

What about seabed mining within national jurisdictions?

Proposals for seabed mining, within the jurisdictions of nations have concentrated on six nations or areas, namely **New Zealand, Australia, Namibia, South Africa, Mexico and the Pacific Islands (Fiji, Papua New Guinea, Tonga, Vanuatu, Solomon Islands and Cook Islands)**. There has been considerable resistance to these project proposals in all these cases and in most cases, governments have opted for a cautious approach in the form of a moratorium, permanent bans or refusal of project proposals.

Map indicating exploration or mining licenses granted in the High Seas (ABNJ) and examples of marine prospecting or mining within national jurisdictions



NAMIBIA

1. Namibian Marine Phosphate (Pty) Ltd

Project: Sandpiper Phosphate Project
Status: Marine license granted. Active (2011) prior to moratorium

1. LLM Phosphates (Pty) Ltd

Status: Mining license granted. Active (2011) prior to moratorium

AUSTRALIA (NT)

2. Northern Manganese Ltd (Australia)

Project: Blue Mud Bay Project and Groote Eylandt Project, Australia
Status: Mining licences granted. Moratorium 2012- 2015

PACIFIC ISLANDS

3. Neptune Minerals (USA)

Location: Papua New Guinea
Status: Expired

4. Nautilus Minerals Inc. (Canada)

a. Location: Papua New Guinea, Solwara 1 Project
Status: Active, 2011
b. Location: Fiji
Status: Active

MEXICO

5. Odyssey Marine Explorations (USA)

Project: Don Diego Marine Phosphate Mine
Location: Baja California, San Ignacio lagoon
Status: Environmental authorisation refused

NEW ZEALAND

6. Chatham Rock Phosphate (NZ)

Location: New Zealand (Chatham Rise), Chatham Rise Phosphate Project
Status: Active (2010) prior to EPA decision

SOUTH AFRICA

7. Green Flash Trading 251 and 257

Location: South Africa (West Coast)
Status: Prospecting rights granted (2012)

8. Diamond Fields International

Location: South Africa (Western Cape)
Status: Prospecting right granted (2014)

RED SEA

9. Diamond Fields International (Canada)

Location: Atlantis II Basin, Red Sea
Status: Active (2010)

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CASE STUDY 1

Namibia's moratorium on marine phosphate mining

'Government is concerned that the removal of soft sediment from the seabed along with living organisms and the suspension of fine sediment in the seawater may affect the functioning of the marine ecosystem negatively. The ministry is further concerned that any contamination or suspended particles from mining activities may have adverse effects on the fish larvae and their development.' - *Namibian Cabinet*.

RIGHTS GRANTED

In 2011 the Ministry of Mines granted mining licences to two companies, Namibian Marine Phosphate and LL Namibia Phosphates. The NMP Sandpiper Project, situated 120km off Walvis Bay, was the most advanced².

SANDPIPER PROJECT

Mining licence area **25.2km wide and 115km long, approximately 2 233 km²**. The project planned to use trailing suction hopper dredging (TSHD) technology. It planned to remove up to **5.5 million tonnes** of sediment annually with an expected annual production of **3 million tonnes** of phosphate rock³.

OPPOSITION

Fishing industry (Namibian Hake Fishing Industry Association and the Confederation of Namibian Fishing Associations) and civil society organisations (Earth Organisation Namibia and Swakopmund Matters) opposed the granting of these licences.

GOVERNMENT POLICY

The Namibian government established an 18 month moratorium on marine phosphate mining in September 2013 through a cabinet decision. This was championed by the Minister of Fisheries and Marine Resources. After expiry of 18 months it has been publicly declared the moratorium will remain in force for a further three years with possible extension.

MORATORIUM CONDITION

Undertake an independent scoping study and comprehensive strategic environmental assessment. The Fisheries and Aquaculture section of the Norwegian-based Foundation for Scientific and Industrial Research (SINTEF) and the Institute for Marine Research are conducting the studies.

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CASE STUDY 2

Moratorium on seabed mining in Australia (Northern Territory)

'Seabed mining is a new and evolving worldwide industry with minimum number of generally accepted practice standards. The methods applied are rapidly changing and there is limited information available on actual or potential impacts on environment and other resource industries; and methods for managing impacts'.

- *Policy statement of moratorium, NT Australia*.

EXPLORATION APPLICATIONS

In 2012 Northern Manganese Limited (NML) sought environmental approval to conduct exploratory activities for manganese ore. NML applied for 7 mineral exploration licences covering **3 856km²** in the shallow offshore environment. This was known as the Blue Mud Bay Project. NML already held exploration rights for eight tenements, covering **1 723 km²** of shallow marine area and two islands near Groote Eylandt, known as the Groote Eylandt Project.

GOVERNMENT RESPONSE

In response to public concerns over seabed mining, on 6 May 2012 the Northern Territory government established a three year moratorium. The Northern Territory stated that due to the lack of available knowledge it could not accurately assess potential impacts; methods for management of the industry, its development, and sustainability; and conditions for authorisations.

MORATORIUM CONDITIONS

Within the moratorium period, the Minister would not assess or grant any mineral exploration licence until completion of a formal review on actual and/or potential impacts on the environment and other resource industries. This had to identify likely impacts on commercial and recreational fishing; identify international environmental best practices; and examine mitigation strategies to manage impacts.

FINDINGS OF REVIEW

Australia's EPA produced an interim report which recommended a highly cautious approach to seabed mining and the extension of the moratorium until better knowledge of impacts were available⁵. Following the lapse of the moratorium period, the Northern Territory extended the moratorium for a further three years and placed a permanent ban on seabed mining in Groote Eylandt.

Pacific Islands and Papua New Guinea

‘Under these circumstances there is need for caution, giving special attention to protecting the marine environment and the people who value it. A sound precautionary approach, which does not preclude the option of ‘no development’ is needed to avoid or minimize temporary or lasting harm to the environment, to the people and to the economy.’ - *World Bank, 2016*

APPLICATION

A number of Pacific Island Nations, namely; Papua New Guinea, Fiji, Tonga, Vanuatu, Solomon Islands and the Cook Islands have granted permits for deep sea mining exploration. The Solwara 1 Project is the most advanced.

SOLWARA 1

Nautilus Minerals (a Canadian seabed mining company) was recently granted a mining right for the Solwara 1 Project, for seabed mining in the Bismarck Sea. If this commences, it would be the first seabed mining operation of its kind. It appears that Papua New Guinea government’s rationale for granting these rights relates to the potential revenue that could stem from royalties.

OPPOSITION

There has been significant opposition to the Solwara 1 Project from local communities and not for profit organisations. The Deep Sea Mining Campaign, an association of NGOs and citizens concerned about the likely impacts of seabed mining, has been highly vocal over the impacts of the Solwara 1 project on marine and coastal ecosystems and communities.

WORLD BANK’S POSITION

Recently, the World Bank published a report titled ‘Precautionary Management of Deep Sea Mining Potential in Pacific Island Countries’. The report recommended that Pacific Island countries that are supporting or considering deep sea mining activities should ‘proceed with a high degree of caution to avoid irreversible damage to their ecosystems’. The report further stresses the need for strong governance arrangements to ensure that appropriate social and environmental safeguards are in place.

Mexico government’s refusal of environmental authorisation of a marine phosphate mine

‘The economic benefits of the project cannot prevail over the protection of the natural resources of Ulloa Bay, especially when some of those, like the loggerhead turtle (*Caretta Caretta*), are threatened species subject to strict standards of protection.’ - Secretary of Environment and Natural Resources (*SEMARNAT*)

DON DIEGO PROJECT

In September 2014, Odyssey Marine Explorations (an American company) submitted an environmental impact assessment for its planned ‘Don Diego’ marine phosphate mine in Baja California’s San Ignacio lagoon, near Ulloa Bay. The project intended to **mine 225,000 acres of seabed in five work sites**. It was planned that each site would be exploited for 10 years, resulting in a 50-year-long project. Overall, the project planned to extract **350 million tons of phosphate** sand from the seabed.

OPPOSITION AND POTENTIAL IMPACTS

The project was opposed by many stakeholders including the Interamerican Association for Environmental Defense (AIDA), San Juanico residents, the Centro Mexicano de Derecho Ambiental (CEMDA), local fishing cooperatives, BCS Noticias, WildCoast and Save the Waves Coalition. These stakeholders raised significant concerns including potential impacts on Gray whales, Blue whales, Humpback whales and Loggerhead turtles as a result of noise, disturbance and radioactive releases from marine phosphate mining.

THE DECISION BY THE ENVIRONMENTAL AUTHORITY

Recently, the Secretary of Environment and Natural Resources (SEMARNAT) denied environment authorisation for the Don Diego marine phosphate mining project. The environmental authority found that measures presented by the company for protecting Loggerhead turtles were based on inconsistent information. Furthermore, the authority found that the economic benefits of the project could not prevail over the protection of the natural resources of Ulloa Bay, particularly in relation to threatened species subject to strict standards of protection.

Refusal of first marine phosphate mining application in New Zealand (EPA)

The destructive effects of the extractive activity, coupled with the potentially significant impact of the deposition of sediment on the areas adjacent to the mining blocks and on the wider marine environment, could not be mitigated by any set of conditions or adaptive management regime that might reasonably be imposed.

- EPA Chatham Rock Phosphate Decision.

APPLICATION

On 14 May 2014 Chatham Rock Phosphate Limited (CRPL) applied to the Environment Protection Authority (EPA) for marine consent to mine phosphate in Chatham Rise (400 km east of Christchurch).

CHATHAM RISE PHOSPHATE PROJECT

The application sought consent for seabed mining operations over a 10 192 km² area for a 35 year period. In the first five years CRPL planned to mine an area of 820 km² with an expected **annual production of 1.5 million tonnes**. The proposed mining practice was to retrieve phosphorite-bearing material by trailing suction drag-head and mechanically processing this on board. Phosphorite nodules more than 2mm would be separated from other material using sieves and logwashers. Waste

would be released close to the seabed, using discharge (sinker) pipe with diffuser.

OPPOSITION AND EPA DECISION

The application drew widespread public attention, with over 294 submissions and large public hearings. As a result, on 10 February 2014, the Decision-making Committee (DMC) appointed by the EPA refused consent.

THE DECISION OUTLINED THE FOLLOWING GROUNDS FOR REFUSAL⁴

IMPACTS

The impacts of the drag head on benthic fauna would be highly destructive. These could not be 'avoided, remedied or mitigated'. The damage would be irreversible' altering the habitat permanently.

LACK OF KNOWLEDGE

There was a lack of information to enable certainty on the impacts on the environment and existing interests. With lack of knowledge, the DMC was required to favour caution and environmental protection.

SOCIO-ECONOMIC IMPACTS

'Seabed mining would be unlikely to generate more than a modest economic benefit to New Zealand and the quantum and distribution of that benefit remains uncertain. This had to be weighed against the significant and permanent adverse effects on the benthic environment' and on other existing interests, particularly fishing industry.

MITIGATING IMPACTS

The DMC found that impacts 'could not be mitigated by any set of conditions or adaptive management regime that might reasonably be imposed'.

References and further reading:

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