# Drivers for Deep Sea Mining

To serve a continuously increasing global population, a growing middle class that is driving urbanization and the need for renewable, low-carbon energy infrastructure, terrestrial minerals and metals supplies are under tremendous pressure. Land-based deposits have been exploited for decades, sometimes centuries. Humankind has consumed more aluminium, copper, iron and steel, phosphate rock, diamonds, sulphur, coal, natural gas, and even sand and gravel during the past century than all earlier centuries together. This exponential and insatiable demand for minerals has led to an overall decline of the quality of terrestrial ore that remains available. With decreasing ore quality, both economic and ecological pressure on these mining activities grows exponentially. Consequently, alternatives appear – new mining resources are fully explored in the last years. Moreover, the increasing importance of recycling and the circular economy is imperative – driven by a more sustainable mining demand. However, even a hypothetical (and impossible) 100 per cent recycling will not be sufficient to satisfy the exponential increase in demand. Primary sources of metals remain imperative. As easily mined ore deposits are quickly declining, more complex mining activities gain further attention. This is where deep sea mining is popping up: new resources will be found in the deep subsurface or in other remote locations: although mining these deposits will consume large amounts of energy.

Commercial interest for ocean minerals picked up after the global financial crisis when commodity prices soared as a consequence of Chinese double-digit growth. The European Union’s Raw Material Initiative was released in November 2008 and was the first policy pronouncement to indicate an interest in and support for seabed mining. (EU Commission, 2008)

Furthermore, marine mining and deep-sea mining are part of the 2012 EU’s Blue Growth strategy under the thematic area of marine mineral resources. According to the Communication, up to 10% of global production of minerals such as cobalt, copper and zinc could come from the ocean floor by 2030, providing a global turnover of up to Euro 10 billion. Further there is a global interest securing access to these mineral resources to safeguard future generations.

Providing these right conditions emerge, sea bed mining – specifically of the international seabed beyond the national jurisdiction limits - may soon become an operational and sustainable reality.

Bringing together this economic business opportunities, running practices on “mining” natural resources such as sand or gravel with the available operational dredging equipment expertise enforces the interests of the dredging world in this efficient and sustainable mining alternative.

# Legal framework

The International Seabed Authority (ISA) is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (link is external) and the 1994 Agreement (link is external) relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea. The Authority is the organization through which States Parties to the Convention shall, in accordance with the regime for the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction (known legally as the “Area”) established in Part XI and the Agreement, organize and control activities in the Area, particularly with a view to administering the resources of the Area.

Consequently, the International Seabed Authority (ISA) is established as an intergovernmental body to organize, regulate and control all mineral resources and related activities in the “the Area”, an area underlying most of the world’s oceans (45% of the earth’s surface) The Law of the Sea Convention (LOSC) designates the Area as well as the resources of the Area as the common heritage of mankind and states that no state or person, natural or juridical, shall claim, exercise or acquire rights with respect to the area or its resources incompatible with the international regime to be established. It further states that the exploration of the area and the exploitation of its resources shall be carried out for the benefit of mankind as a whole, taking into particular consideration the interests and needs of developing countries.

A principal function of the Authority is to regulate deep seabed mining and to give special emphasis to ensuring that the marine environment is protected from any harmful effects which may arise during mining activities, including both exploration and exploitation in the “Area”. The basic principle of “common heritage of mankind” calls for development of a robust, equitable and sustainable regime. From there, three primary issue categories can be identified as main working areas for ISA:

* Procedural and operational matters (providing proper regulations for both exploration and exploitation of these mineral resources) to install good governance
* Profit distribution issues, covering fostering of both economic and social development
* Environmental issues, focusing on water column impacts and poorly understood deep-sea species and benthic ecosystems