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The regulatory regime for deep seabed mining

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The regulatory regime for deep seabed mining

Outline

Fundamental principles and sources of law

Status of the Mining Code

Prospecting and exploration

Environmental protection

Exploitation

The “Reserved Areas”
Fundamental principles and sources of law

*The “Area”*
## Fundamental principles and sources of law

### Fundamental principles

<table>
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<tr>
<th>Article 136</th>
<th>The Area and its resources are the common heritage of mankind.</th>
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| Article 137 | No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources.  
All rights in the resources of the Area are vested in mankind as a whole (represented by the ISA) and no State or natural or juridical person shall exercise mineral rights except in accordance with Part XI. |
| Article 140 | Activities in the Area shall be carried out for the benefit of mankind as a whole. |
| Article 141 | The Area shall be open to use exclusively for peaceful purposes by all States. |
Fundamental principles and sources of law

Sources of law


1994 Agreement for the Implementation of Part XI of the 1982 Convention

Other rules of International law not incompatible with the Convention

Rules, regulations and procedures of the International Seabed Authority

Aim to create a regulatory framework for prospecting, exploration and exploitation similar to terrestrial mining:

- Security of tenure
- Due Diligence
- Environmental protection
- Exploitation on fair and reasonable financial terms
The regulatory regime for deep seabed mining

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The “Reserved Areas”
The Mining Code

Definition and content

The comprehensive set of rules, regulations and procedures issued by the International Seabed Authority to regulate prospecting, exploration and exploitation of marine minerals in the Area.

- Regulations on:
  - Prospecting
  - Exploration
  - Exploitation

- Rules and procedures
  - Environmental recommendations
  - Data standards
  - Financial reporting

- Covering:
  - Polymetallic nodules
  - Polymetallic sulphides
  - Cobalt-rich crusts
  - Other resources
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The “Reserved Areas”
Prospecting and exploration

Overview

- **Prospecting**
  - Searching for mineral deposits with no exclusive rights.
  - Requires written notification to the Secretary-General.
  - Most prospecting may be undertaken as MSR.

- **Exploration**
  - Searching for and evaluating potential of mineral deposits with exclusive rights under a contract.
  - Priority over other applicants for exploitation rights.
Prospecting and exploration
Overview

Current regulations cover prospecting and exploration phases for polymetallic nodules, polymetallic sulphides and cobalt-rich crusts.

- **Polymetallic nodules** (2000)
- **Polymetallic sulphides** (2010)
- **Cobalt-rich crusts** (2012)

Regulatory framework largely identical, differences reflect different nature of resources.
Prospecting and exploration

Application criteria

Qualified Applicants

State Party to the 1982 Convention or
State enterprise sponsored by a State Party or
Natural or juridical person possessing the nationality of a State Party and sponsored by a State Party.

State Sponsorship

Fundamental requirement.
Sponsorship by State of which applicant is a national or State having effective control (may be more than one sponsoring State).
Evidenced by certificate of sponsorship.
Declaration of responsibility.
Prospecting and exploration

Content of application for exploration licence

- Information on financial capability.
- Information on technical capability.
- Proposed 15-year exploration programme.
- Detailed five-year plan showing anticipated annual actual and direct expenditure on exploration.
- Proposal for oceanographic and environmental baseline studies and preliminary environmental impact assessment.
- Proposed measures to prevent pollution (contingency plan).
- Undertaking of good faith.
- Processing fee (US$ 500,000).
- List of coordinates and chart of proposed area.
Prospecting and exploration
*Polymetallic nodules – size of area for exploration*

Applicant must offer two sites of equal estimated commercial value (one for the contractor, one to be reserved)

Each site to be not more than 150,000 Km² in size, relinquish to 75,000 Km²

May be in any geographical configuration and need not be a single area

Twelve contracts issued to date (Eleven in CCZ and one in Indian Ocean)
Prosp ecting and exploration
Polymetallic nodules – CCZ licences

\[\text{Polymetallic Nodules Exploration Areas in the Clarion-Clipperton Fracture Zone}\]
Areas under contract and areas reserved for the International Seabed Authority

- Marawa Research and Exploration Ltd (Kiribati)
- Bundesanstalt für Geowissenschaften und Rohstoffe (BGR; Germany)
- China Ocean Mineral Resources Research and Development Association (COMRA; China)
- Deep Ocean Resources Development Company (DORD; Japan)
- G-TEC Minerals Resources NV (GSR; Belgium)
- Government of the Republic of Korea

- Institut français de recherche pour l’exploitation de la mer (IFREMER, France)
- Interoceanmetal (ION; Bulgaria, Cuba, Czech Republic, Poland, Russian Fed., Slovakia)
- Nauru Ocean Resources Inc. (NORI; Nauru)
- Tonga Offshore Mining Ltd (TOML, Tonga)
- UK Seabed Resources Ltd (UKSRL, UK)
- Yuzhmorgeologia (Russian Federation)

Reserved area*  Exclusive Economic Zones (VLIZ, 2011)

* In the case of polymetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of “equal estimated commercial value”. One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.
Prospecting and exploration

*Polymetallic sulphides – block allocation system*

Maximum 100 blocks (10 km x 10 km). Map shows hypothetical example of distribution of clusters of contiguous blocks within a constraint area superimposed on known resource distribution in the Central Atlantic.
Prospecting and exploration
Polymetallic sulphides – block allocation system

Illustration of constraint area for exploration licence (300,000 km² rectangle, where longest side does not exceed 1,000 km)
Prospecting and exploration
*Polymetallic sulphides – Atlantic Ocean*

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**Polymetallic Sulphides Exploration Areas on the Mid-Atlantic Ridge**

Areas under contract or approved by the International Seabed Authority

*Exploration block (approx. 10 x 10 km)  Confinement area containing 100 polymetallic sulphides exploration blocks*  
*According to the Regulations on prospecting and exploration for polymetallic sulphides, a maximum of 100 exploration blocks (not exceeding 100 sq. km) must be arranged in clusters with at least five contiguous blocks. Clusters need not to be contiguous, but shall be confined within a rectangular area, where the longest side does not exceed 1,000 km.*

©International Seabed Authority, 2013. Background map: ESRI
Prospecting and exploration

Polymetallic sulphides – Indian Ocean
Prospecting and exploration
*Cobalt-rich crusts – block allocation system*

- Each exploration block no more than 20 Km$^2$, but may be square or rectangle.
- Maximum of 150 blocks, which shall be arranged in clusters of maximum 5 contiguous blocks.
- Clusters need not be contiguous but may be proximate and in a constraint area measuring 550 x 550 Km.
- Total exploration area 3,000 Km$^2$, to be relinquished down to 500 km$^2$
- Option to offer joint venture in lieu of reserved area.
- Two applications filed in 2012 (under consideration)
Prospecting and exploration

Consideration of applications for exploration licences

Legal and Technical Commission reviews and makes recommendation to the ...

Council, which shall approve the application unless disapproved by two-thirds majority including a majority in each chamber

Then a Contract issued by Secretary-General in standard format
Prospecting and exploration

Content of standard exploration contract

- Standard contract terms in Annex 4 of Regulations.
- 15 year duration, extension for 5 years in ‘exceptional circumstances’.
- Schedule of progressive relinquishment of exploration area
- Mandatory training programme for personnel of developing countries.
- Annual reporting requirement to the Authority.
- Minimum exploration expenditure requirement.
- Preference over other applicants for exploitation of same area.
- Strict limitations on use of and access to confidential data, e.g. commercially sensitive data on ore grade, abundance and metal content. Note that environmental data not considered confidential, but proprietary data (e.g. equipment design) always considered confidential.
Prospecting and exploration

Suspension and termination of contract

- Contract may be suspended or terminated in case of:
  - Termination of sponsorship;
  - Serious persistent and wilful violations;
  - Failure to comply with final binding decision of Court or Tribunal; or
  - Insolvency.

- Monetary penalties may be imposed by Council for breach of contract.

- Disputes to be settled in accordance with Part XI, Section 5, of the Convention, including recourse to Seabed Disputes Chamber.
Prospecting and exploration

**Responsibility and liability**

- Contractor liable for damage arising from wrongful acts or omissions.
- Authority liable for damage arising from wrongful acts or omissions, including vicarious liability under article 168.
- Sponsoring States liable unless taken “all necessary and effective measures to ensure compliance” (includes adequate national regulatory system).
- Personal liability on members of Legal and Technical Commission and Secretariat staff for abuse under article 168(8) of the Convention.
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Fundamental principles and sources of law
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The “Reserved Areas”
Reg 33(1): The Authority shall, in accordance with the Convention and the Agreement, establish and keep under periodic review environmental rules, regulations and procedures to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area.

Reg 33(2): In order to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area, the Authority and sponsoring States shall apply a precautionary approach, as reflected in principle 15 of the Rio Declaration, and best environmental practices.
Environmental protection

*Scale of potential impacts (nodule mining)*
Environmental protection

Obligations and responsibilities on all parties

The Authority

- Establish and keep under review environmental rules, regulations and procedures.
- Apply a precautionary approach.
- Develop and implement programmes for monitoring and evaluating impacts of mining on marine environment.

The Contractor

- Include environmental information with application (Reg. 20).
- Take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment, applying a precautionary approach and best environmental practices.
- Cooperate with Authority in establishment and implementation of monitoring and evaluation programmes.
- Gather environmental baseline data and establish baselines, taking account of any recommendations issued by the Legal and Technical Commission.
- Report annually to the Authority.

The Legal and Technical Commission

- Make recommendations to Council on implementation of Regulation 33(1) and (2).
- Consider annual reports of contractors.
- Issue Recommendations for Guidance of Contractors.
- Other powers under article 165.
Environmental protection
Areas of Particular Environmental Interest (APEIs) - 2012

Polymetallic Nodules Exploration Areas in the Clarion-Clipperton Fracture Zone
Areas under contract and areas reserved for the International Seabed Authority

Contract area or contract approved as of 28 February 2013
- Marivea Research and Exploration Ltd (Kiribati)
- Bundesanstalt für Geowissenschaften und Rohstoffe (SGR; Germany)
- China Ocean Mineral Resources Research and Development Association (COMRA; China)
- Deep Ocean Resources Development Company (DORD; Japan)
- G-TEC Minerals Resources NV (GSR; Belgium)
- Government of the Republic of Korea
- Instituts français de recherche pour l'exploitation de la mer (IFREM; France)
- Interoceametal (IOM; Bulgaria, Cuba, Czech Republic, Poland, Russian Fed., Slovakia)
- Nauro Ocean Resources Inc. (NORI, Nauru)
- Tonga Offshore Mining Ltd (TOML, Tonga)
- UK Seabed Resources Ltd (UKSRL, UK)
- Yuzhmoreologia (Russian Federation)

Reserved area^  □ Exclusive Economic Zones (VLIZ, 2011)

* In the case of polypmetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of “equal estimated commercial value”. One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.
Environmental protection
Areas of Particular Environmental Interest (APEIs) - 2012

The diagram illustrates the Polymetallic Nodules Exploration Areas in the Clarion-Clipperton Fracture Zone. Areas under contract and areas reserved for the International Seabed Authority are marked.

Contract area or contract approved as of 28 February 2013:
- Marawa Research and Exploration Ltd (Kiribati)
- Bundesanstalt für Geowissenschaften und Rohstoffe (BGR; Germany)
- China Ocean Mineral Resources Research and Development Association (COMRA; China)
- Deep Ocean Resources Development Company (DORD; Japan)
- G-TEC Minerals Resources NV (GSR; Belgium)
- Government of the Republic of Korea

Reserved area*: Area of particular environmental interest (APEI)**
- Institut français de recherche pour l'exploitation de la mer (IFREMER, France)
- Interoceànn, Intel (Bulgaria, Cuba, Czech Republic, Poland, Russian Fed., Slovakia)
- Nauru Ocean Resources Inc. (NORI, Nauru)
- Tonga Offshore Mining Ltd (TOML, Tonga)
- UK Seabed Resources Ltd (UKSRL, UK)
- Yuzhno-Russkaya Geologicheskaya (Russian Federation)

* In the case of polymetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of "equal estimated commercial value". One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.
** In July 2012, the Authority adopted an environmental management plan for the Clarion-Clipperton Zone to be implemented on a provisional basis over an initial three-year period. The plan includes the designation of a network of areas of particular environmental interest (ISBA/18/C/22).
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Exploitation

The “Reserved Areas”
Exploitation
Future work for the Authority

Regulatory framework for exploitation does not exist.

- **Exploitation**
  - Recovery for commercial purposes and extraction of minerals.
  - Construction of mining, processing and transportation systems.
  - To be conducted under licence from Authority.

- **Financial terms (1994 Agreement, Annex, Section 8)**
  - System should be fair to both Authority and contractor and comparable to land-based mining.
  - System should not be complicated.
  - Should be an annual fixed fee.
  - Consideration should be given to royalty system.

- **Preliminary study prepared for Legal and Technical Commission in 2013**
Exploitation

Importance of fiscal regime to future mining

- Metal Price
- Metal Content
- Fiscal Regime
- Processing Cost
- Mining Cost
- Energy/fuel Cost
- Transportation Cost

Most sensitive

Least sensitive
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- The “Reserved Areas”
The “Reserved Areas”
Areas contributed by existing contractors

*Contract area  Reserved area*

*In the case of polymetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of “equal estimated commercial value”. One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.*
The “Reserved Areas”
Areas contributed by existing contractors

Polymetallic Nodules Exploration Areas in the Clarion-Clipperton Fracture Zone
Areas under contract or contract approved and areas reserved for the International Seabed Authority

*In the case of polymetallic nodules, the so-called parallel system provides that each application for exploration by a developed State must cover two parts of “equal estimated commercial value”. One part is allocated to the applicant and the other is to become the reserved area, which is set aside for the conduct of activities by the Authority or developing States.

©International Seabed Authority, 2013. Background map: ESRI
Reserved Areas open to application by:
- The Enterprise;
- Any developing State Party;
- A natural or juridical person sponsored by and effectively controlled by a developing State Party.

Advantage is that reserved areas known to have commercial value: no need for prior prospecting to identify potential site.

If not used within 15 years, may revert to original contributor.

Same contract terms and conditions apply as to any other contractor.
The regulatory regime for deep seabed mining

Conclusions

- Deep seabed mining regime is a Conventional regime.
- Contractual nature of relationship with Authority.
- Strong similarities to national mining regimes.
- Equal access to dispute settlement.
- Special provisions for access to mine sites by developing States.
- Exploration code completed (nodules, sulphides, crusts).
- Twelve exploration licences issued in three oceans.
- Three applications approved and pending contract (Kiribati, Korea, France)
- Four new applications pending consideration (JOGMEC, Comra, Russia, UKSRL II)
- Work has started on developing terms and conditions for exploitation.
The regulatory regime for deep seabed mining

Overview of licensing activity