Chapter 1  The Legal Framework for Deep-Seabed Polymetallic Nodule Exploration

Mr. Jean-Pierre Lenoble
Member of Legal and Technical Commission (ISA), France

SUMMARY OF PRESENTATION

The Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area of the seabed beyond national jurisdiction, approved by the International Seabed Authority on 13 July 2000\(^1\), provide a total framework for the development of deep seabed exploration. The scheme envisions a sequence of phases: notification of prospecting, application for approval of a plan of work for exploration in the form of a contract, and approval of the exploration contract. Beyond the exploration phase would come approval of a plan of work and a contract for exploitation – areas covered under the United Nations Convention on the Law of the Sea but not yet regulated by the Authority.

1. Prospecting

 Normally, interested entities would carry out prospecting in an area to acquire sufficient information before seeking approval of a plan of work for exploration.

- Entities have an obligation to notify the Authority before prospecting.

- There is no limitation on size of area, but prospectors must specify the coordinates of the “broad area” of prospecting. Thus, they might simply say they would work somewhere in the Central Pacific Ocean or the Central Indian Ocean.

- Prospectors have no exclusive rights but are entitled to confidentiality for the data they acquire, lest another operator use such data to advance its own application for a plan of work.

- Prospectors must cooperate in international marine science training programmes for personnel of the Authority and of developing States.
- The Authority must be notified of any environmentally harmful incident arising from prospecting.

- Contractors are to submit annual reports to the Authority, without having to divulge the specifics of what they have learned.

- No time limit is fixed for prospecting, so that operators might prospect for one year or ten years.

2. Application for Approval of a Plan of Work for Exploration

Once a prospector has sufficient information about an area, it can apply to the Authority for approval of a plan of work for exploration – essentially, an exploration license.

- Applicants must be sponsored by a State member of the Authority.

- Applicants must demonstrate financial and technical capabilities.

- When proposing an area for exploration, the applicant shall divide it into two parts of equal estimated commercial value. The Authority then chooses one of the parts as a reserved area for eventual use by the Enterprise (its mining organ) or a developing State.

- The total area allocated to an applicant shall be less than 150,000 square kilometres – a sizeable space for exploration that would subsequently be reduced as the mining phase approaches.

- Applicants must submit data on various characteristics of the area and their proposed activities, enabling the Authority to choose its portion. This data must include:

  o Geographical coordinates;

  o Location, survey and evaluation of polymetallic nodules:

    ✍️ Proposed technology for recovering and processing nodules;
    ✍️ Physical and geological characteristics (seabed topography, bottom currents);
    ✍️ Abundance of nodules;
    ✍️ Content of metals of economic interest;
Estimation of the commercial value of the two parts;
Description of the techniques to be used by the applicant.

- Environmental parameters (seasonal and during test period) including:
  - Wind speed and direction;
  - Wave height, period and direction;
  - Current speed and direction;
  - Water salinity and temperature;
  - Biological communities.

3. Registered Pioneer Investors

3.1. Relinquishment of the area

Special provisions in the Regulations deal with the category of applicant known as a “registered pioneer investor”. Certain States whose nationals had already engaged in seabed activities before and during the 1980s were registered by the Preparatory Commission for the International Seabed Authority and the United Nations Tribunal on the Law of the Sea, in a process that took place after the signature of the Convention in 1982 and before its entry into force in 1994. The registration process, finally completed in 1987, was complicated by the existence of overlapping claims on the part of some pioneer investors, a situation that had to be resolved by mutual agreement.

Among the understandings reached among the registered pioneers was that the initial claim area of up to 150,000 km² was to be reduced over eight years to 75,000 km² through a process known as relinquishment. This called for:

- A 20 percent reduction after three years,
- Another 10% after the fifth year and
- A final 20% after eight years.

Some pioneers had already reduced their area in a deal with the Preparatory Commission. Two still have to relinquish some part of their
area, but within one or two years everybody will be down to 75,000 km$^2$. The Authority might decide one day to fix this size as the maximum, for future contractors if not for present ones.

4. Contract for Exploration

With the entry into force of the Convention and the approval of plans of work in the form of contracts, a new phase has begun in which the pioneers have become the explorers.

4.1. Rights

- Contractors have an exclusive right to explore for polymetallic nodules in the contract area.

- Contracts are for 15 years, extendable by additional 5-year periods.

- Contractors have a priority right to a contract for exploitation in the allocated area.

4.2. Relinquishment

Contractors must relinquish portions of their area during the course of the contract:

- If more than 75,000 km$^2$, the initial allocated area must be reduced by 20% before the end of the third year from the date of the contract;

- Then by an additional 10% before the end of the fifth year;

- Further, after eight years, an additional 20% or such larger amount as would exceed the exploitation area decided upon by the Authority.

4.3. Plan of work

The plan of work of each contractor is to contain the following elements:

- A proposed exploration programme;
- A programme of activities for the immediate five years;

- A programme for environmental baseline studies;

- Preliminary assessment of the possible impact of the proposed exploration activities on the marine environment;

- Proposed measures to prevent, reduce and control pollution.

The exploration programme is to include:

- A general description and schedule for the proposed programme, including a more detailed programme of activities for the immediate five-year period;

- A description of studies to be undertaken in respect of the environmental, technical, economic and other factors which must be taken into account in exploration;

- A schedule showing anticipated yearly expenditures in respect of the programme of activities for the immediate five-year period.

**Environmental baseline studies** are to incorporate a programme for oceanographic and environmental studies in accordance with:

- The Regulations for polymetallic nodule exploration;

- Any environmental rules, regulations and procedures established by the Authority that would permit assessment of the potential environmental impact of the proposed exploration activities;

- Any recommendations issued by the Legal and Technical Commission of the Authority (to be taken into account by contractors).

**Environmental impact** is to be addressed by:

- Preliminary assessment of the possible impact of the proposed exploration activities on the marine environment;
- A description of proposed measures for the prevention, reduction and control of pollution and other hazards, as well as possible impacts, to the marine environment.

**Revision and review:**

- Modifications to the programme of activities can be made from time to time with the consent of the Authority.

- The plan of work is to be reviewed every five years, with a programme to be drawn up for the following five-year period, including a revised schedule of anticipated yearly expenditures, making any necessary adjustments to the previous programme.

5. Exploration Contract

5.1. Annual report

Each contractor is to report annually to the Authority on the following:

- Exploration work during the previous year, including:
  - Maps, charts and graphs illustrating the work done and the results obtained;
  - The equipment used for exploration, including the test results of proposed mining technologies, but not equipment design data (to avoid disclosing what countries consider proprietary information);
  - A statement of the quantity of polymetallic nodules recovered as samples or for testing;

- Training programmes for personnel of the Authority and developing countries: implementation and any proposed revisions or development;

- Environmental studies: results of environmental monitoring programmes, including observations, measurements, evaluations and analyses of environmental parameters;
Expenditures: actual and direct exploration expenditures in carrying out the programme of activities during the contractor’s accounting year;

Adjustment of the future programme: details of any proposed changes to the programme of activities and the reasons for such adjustments (including any indication that the contractor wished to stop exploring or proceed to exploitation).

5.2. Data to be submitted at the end of contract

Copies of geological, environmental, geochemical and geophysical data acquired by the contractor;

Estimation of mineable areas (grade and quantity of the proven, probable and possible polymetallic nodule reserves);

Statement of the quantity of polymetallic nodules recovered as samples or for testing;

Copies of geological, technical, financial and economic reports made by or for the contractor;

Information in sufficient detail on the equipment used to carry out the exploration work, including the results of tests of proposed mining technologies, but not equipment design data.

5.3. Confidentiality of proprietary data

The Regulations provide for protecting the confidentiality of proprietary data supplied to the Authority by contractors, mostly about factors having an economic impact, such as quantity and grade of nodules. Information so classified would be treated as confidential and kept in the Authority’s files. The Authority could make it available to consultants, for example, but on terms preserving confidentiality.

Data and information designated by the contractor, in consultation with the Secretary-General of the Authority, as being of a confidential nature, shall be considered confidential unless:

It is generally known or publicly available from other sources,
It has been previously made available by the owner to others without an obligation concerning its confidentiality, or

It is already in the possession of the Authority with no obligation concerning its confidentiality.

Environmental data are not considered confidential.

5.4. Preservation and protection of the marine environment

To protect the marine environment against harmful effects:

The Authority and States sponsoring seabed activities are to take a “precautionary approach” to such activities.

The Authority is to establish and review regulations and guidelines.

Each contractor shall:

Take measures to prevent, reduce and control pollution and other hazards to the marine environment arising from its activities in the Area “as far as reasonably possible using the best technology available”;

Establish environmental baselines (showing the existing natural state of an area) against which to assess the likely effects of its programme of activities on the marine environment;

Establish and implement a programme to monitor and report on such effects.

The Legal and Technical Commission may draw up a list of exploration activities that may be considered to have no potential for causing harmful effects on the marine environment. Since much commonly used technology falls into this category, the aim is to free contractors from having to assess its impact, taking account of recommendations by scientists and the Commission.

Before applying for exploitation rights, the contractor shall propose the designation of two areas for eventual comparison in order to identify what changes were due to mining:
“Impact reference zones” to be used for assessing the effect of exploitation activities on the marine environment;

“Preservation reference zones” in which no mining shall occur, to ensure representative and stable biota on the seabed in order to assess any changes in the flora and fauna of the marine environment.

5.5. Emergency orders

- Each contractor shall establish in advance a contingency plan to respond effectively to incidents likely to cause serious harm to the marine environment arising from the contractor’s activities – for example, if during mining operations a ship begins to leak fuel. The plan would list various problems that could occur and specify possible remedies so that the Authority would know in each case how the contractor might react to prevent, contain or minimize the pollution.

- Each contractor shall report to the Secretary-General any incident arising from its activities that has caused or is likely to cause serious harm to the marine environment.

- If a contractor reports an incident arising from its activity that had caused or was likely to cause serious harm to the environment, a complicated process would be set in motion involving the Council, the Secretary-General, and the Legal and Technical Commission. The Council might determine that the contractor was taking adequate measures or, if not, it might take the lead by issuing emergency orders to prevent, contain, minimize or repair the harm.
SUMMARY OF DISCUSSION

Financial obligations of contractors

Responding to a question, Mr. Lenoble noted that, during the exploration phase, contractors bore no financial obligations towards the Authority in terms of royalties. However, they did have to commit themselves to the plan of work, including a five-year programme of activities and a schedule of expenditures that they would submit to the Authority for its approval. Once this was approved, they would be expected to follow it, on the understanding that it could later be modified, along with its financial provisions.

Environmental data from contractors

Questions were raised about ways of improving the submission of environmental data to the Authority. Lenoble observed that the pioneer investors had already submitted some data during the registration process, but much of this was out of date. Subsequent studies had been published, but the Authority would have to discuss with contractors how such information might be made available, bearing in mind that some of it came from independent scientists and institutions and did not belong to the contractors.

Impact and preservation reference zones

Lenoble observed that contractors did not have to designate impact reference and preservation reference zones until they decided to proceed with exploitation. In any case, it would not be wise to define such zones, or even specify their size, before it was known exactly where mining would occur and what technologies would be used.

Preservation reference zones were conceived as areas that would not be impacted by mining or by associated surface or deep-water plumes. It would be difficult to find such areas, since they also had to be representative of mining areas.
Review of applications

Explaining the procedure to be followed in reviewing applications for plans of work, Lenoble said that if a contractor failed to provide sufficient information according to the terms of the Regulations, the Authority would seek additional information or clarification. The Legal and Technical Commission would judge the response, acting as an adviser to the Council. If suitable information was not submitted within a specified time limit, the application could be denied. If the information were deemed acceptable, the process would continue. The Council would make the final decision, in light of recommendations by the Commission and the Secretary-General.

Seven applications had been received so far. All had been approved during the Preparatory Commission phase, and six contracts had already been signed.

Regulations and recommendations

Much of the discussion centred on the concept behind the Authority's environmental recommendations and the way they fit into the scheme for regulating exploration of the seabed.

Mr. Lenoble recalled that the Regulations had emerged from a long process, begun some two decades ago in bodies of the Preparatory Commission. Time was needed to gain better knowledge, on environmental aspects among others, to make the Regulations more effective. Regulations devised too early - this might even be true of some articles of the Convention itself - might have to be changed later, and it was always more difficult to modify an existing rule than to define a new one. For that reason, most members of the Legal and Technical Commission felt it would be wasteful to fix regulations too soon. What was needed was an ongoing programme to acquire knowledge, for example from mining tests, which would help in formulating future regulations.

He described the hierarchy in instruments governing seabed operations, starting with the Law of the Sea Convention, followed by the Authority's regulations. The third level consisted of recommendations to contractors that were not considered obligatory but should normally be followed. Finally came explanations of the regulations, which would specify alternative approaches to such matters as measurement techniques, with choices left to individual scientists.
In the discussion, flexibility in the application of regulations was cited as desirable. For instance, environmental monitoring in one area might produce data that would make subsequent studies elsewhere either unnecessary or more relevant. Contractors bore a responsibility to do the best job they could in environmental assessment, but it would be counterproductive to over-regulate this process in a way that would unduly burden them. That was seen as the point of decoupling technical recommendations from regulations. In this regard, Lenoble noted that the Regulations allowed for programme adjustments from time to time, which could be made through discussions between the Authority and contractors.

Explaining the concept of recommendations, the Secretary-General noted that they were prepared by the Legal and Technical Commission, which could revise them from time to time. They would not necessarily be adopted by the Council, though the Council might examine and comment on them or send them back to the Commission. The aim of the recommendations was to bring about some uniformity while taking account of new developments and information. Though they were not legally binding, the recommendations, as the expression of a group of scientists and technicians based on available information, set forth elements of persuasion to guide contractors. They had been called guidelines at first, but that term had been dropped because it had different connotations in different languages. Recommendations should be seen as indications of how a contractor should proceed in the light of available information and the considered view of the Commission.

Asked what would happen if a contractor decided to ignore the recommendations, the Secretary-General replied that contractors would be well chosen and thus presumably law-abiding. There would be no rush to penalize anybody, but contractors would be expected to be circumspect when considering practical recommendations drawn up by scientists from several countries. Recalling that contractors would be chosen after assessing their financial and technical capabilities, Lenoble remarked that if something unforeseen occurred the Secretary-General could take the matter up with the contractor and, if necessary, could propose action by the Council, including suspension of the contract.

Contractors were obliged to assess the environmental impact of mining, monitor their operations and act to reduce the effects, he observed. They would do so in the light of available scientific and technical knowledge. However, contractors were technical mining people not thoroughly conversant with environmental science. Thus, support from the scientific
community would be needed to increase the knowledge of ecosystems and provide a sound basis for decisions. As rapid development of mining was not foreseen, there was still time to advance such knowledge so that, for example, a better choice could be made about depth of discharge of the mining plume.

Reference

1. International Seabed Authority (2000), Regulations on prospecting and exploration for polymetallic nodules in the area (ISBA/6/A/18), Selected Decisions and Documents of the Sixth Session 31-68.