

The work of the International Seabed Authority - Presentation to the International Copper Study Group



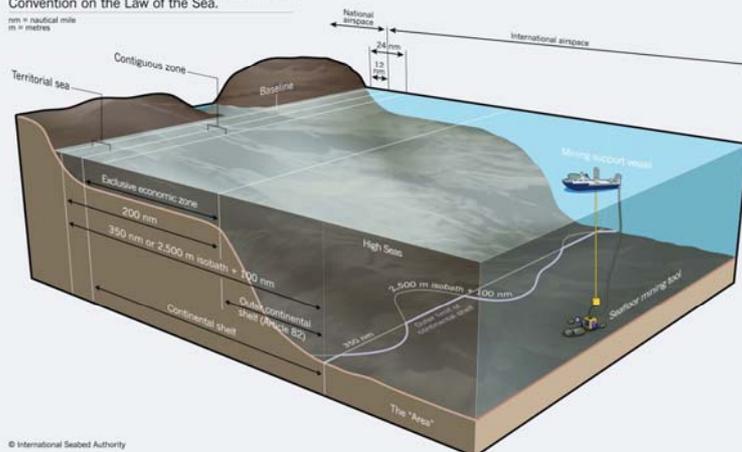
Nii Allotey Odunton
Secretary-General
27 April 2012, Lisbon, Portugal



Figure 1: Maritime Zones

Maritime space under the 1982 United Nations Convention on the Law of the Sea.

nm = nautical mile
m = metres



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Structure



- Assembly (161 States Parties and the EC)
- Council (36 elected members)
 - Legal and Technical Commission (21 expert members)
 - Finance Committee (15 expert members)
- Secretariat.

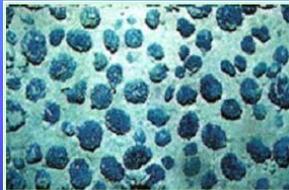


Main Functions

- Administer the mineral resources of the International Seabed Area which is the common heritage of mankind.
- Adopt rules, regulations and procedures for the conduct of activities in the Area.
- Promote and encourage marine scientific research in the Area.
- Protect and conserve the natural resources of the Area and prevent damage to the flora and fauna of the marine environment



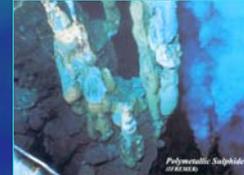
Main Mineral Resources



Polymetallic Nodules
(1-1.4% Cu, 1.25-1.5% Ni, 0.2-0.25% Co & 27.0-30.0% Mn)
Discovered in 1873.
Commercial interest established in the late 1960s



Cobalt Crusts
(Co, Moly, Tellurium, Platinum, Ni, etc)
Discovered at the same time as nodules. First systematic investigations of cobalt-rich crusts sites was in 1981



Polymetallic Sulphides
(Cu, Pb, Zn, Mo, Au)
Discovered in 1979.
Commercial interest established in the late 1980s



Functions

1. Adopt Rules, Regulation and Procedures for the Conduct of Activities in the Area

- Activities in the Area means all activities of exploration for, and exploitation of, the resources of the Area.^{1/}
- Prospecting means the search for deposits [of the resources] in the Area, including estimation of the composition, sizes and distribution of [the resources] and its economic value, without exclusive rights.^{2/}

^{1/} LOSC/1(1)(3)

^{2/} ISBA/16/C/L.5/1(1)(3c)



- Exploration means searching for deposits [of the resources] in the Area with exclusive rights, the analysis of such deposits, the use and testing of recovery systems and equipment, processing facilities and transportation systems, and the carrying out of studies of the environmental, technical, economic, commercial and other appropriate factors that must be taken into account in exploitation.^{3/}

^{3/} ISBA/16/C/L.5/1(1)(3c)



- Exploitation means the recovery for commercial purposes of [the resource] in the Area and the extraction of minerals therefrom, including the construction and operation of mining, processing and transportation systems, for the production and marketing of metals.^{4/}

^{4/} ISBA/16/c/l.5/1(1)(3A)



Polymetallic Nodules of the Area

- Polymetallic nodules were discovered in 1873 during the historic expedition of the HMS Challenger.
- In 1958, Dr. John Mero, a mining engineer at the Hearst School of mines in the University of California, Berkeley, published an economic discourse on the vast potential of deep seabed polymetallic nodules as sources of manganese, cobalt, copper and nickel.



- In 1967, Dr. Arvid Pardo, the Maltese Permanent representative to the United Nations, made a speech to the UN General Assembly focussing on the mineral resources of the seabed beyond the limits of national jurisdiction, in particular the polymetallic nodules found at great depths and whose exploitation seemed to promise substantial benefits, which he proposed to be declared the "Common heritage of mankind".
- In 1970, the UN General Assembly adopted a decision contained in resolution 2750 (XXV) of 17 December 1970 to convene the Third United Nations Conference on the Law of the Sea which started in 1973.



- During the period 1973 to 1982, after over ninety weeks of negotiations, the Convention and its four resolutions were opened for signature in Montego Bay, Jamaica on 10 December 1982. On that day signatures from 119 delegations comprising 117 States, the Cook Island and the United Nations Council for Namibia, were appended to the Convention.
- The body entrusted to administer the common heritage of mankind and to regulate its exploration and exploitation was the International Seabed Authority which was to have an Assembly, the supreme body, and a Council with limited representation.



- To protect the preparatory investments by some States and entities in prospecting for polymetallic nodules, two of four resolutions were adopted to address this and other related matters.
- Resolution 1 created the Preparatory Commission to make arrangements enabling the Authority (and the International Tribunal for the Law of the Sea) to be set up, and to be given limited powers to carry out functions under Resolution II, until the International Seabed Authority was established.
- Resolution II governed preparatory investments in pioneer activities by certain States and entities. Under this resolution, certain protections were granted to qualifying sea-bed miners who applied to the Commission and were registered by it to conduct pioneer activities.



- 7 Pioneer Investors were registered during the life of the Preparatory Commission under the interim Pioneer Investor regime. These were, the Government of India, the Institut Française de Recherché pour l'exploitation de la Mer (Ifremer/Afernod)), Deep Ocean Resources Development Company (Japan), the State Enterprise Yuhzmorgeologiya (Russian Federation), China Ocean Minerals Research and Development Association (China), Interoceanmetal Joint Organization (The Republic of Bulgaria, the Republic of Cuba, The Czech and Slovak Federal Republic, The Republic of Poland and the Russian Federation) and the Government of the Republic of Korea (Republic of Korea).



- In 1994, Upon entry into force of the Convention, the initial substantive activity of the International Seabed Authority was to transfer the registered pioneer investors from the interim Pioneer Regime, and place them under the regime envisaged by the Convention. This required the Authority to adopt appropriate rules, regulations and procedures for prospecting and exploration for polymetallic nodules in the Area.
- Taking into account the provisions of the Convention, the Implementation Agreement on Part XI of the Convention and the work done by Special Commission 3 of the Preparatory Commission, on 13 July 2000, the Authority adopted ISBA/6/A/18, containing the Regulations. This enabled the Authority to sign contracts with the "pioneer investors" and to bring them into the Convention regime.



Polymetallic Nodules

Regulations for Prospecting and Exploration

ISBA/6/A/18 – Adopted by the Assembly of the Authority on 13 July 2000

- A comprehensive legal framework for prospecting and exploration for polymetallic nodule resources in the international seabed areas – the “Area”.
- Forms the basis on which **Plans of Work for Exploration for Polymetallic Nodules** are approved and contracts issued for activities in the “Area”
- Consists of 40 regulations and 4 annexes, including a model contract, and guidelines drawn up by the Legal and Technical Commission for the Assessment of the possible environmental impacts arising from exploration, and for the reporting of actual and direct exploration expenditures.



- With regard to applications for approval of a plan of work for exploration (a contract for exploration), other than a developing state or any natural or juridical person sponsored by it or the Enterprise, all applicants must submit a total area which need not be a single continuous area, but sufficiently large and of sufficient estimated commercial value to allow two mining operations. The applicant shall indicate the coordinates dividing the areas into two parts of equal estimated value.



- On the basis of the data and information submitted by the applicant, if found satisfactory, and taking into account the recommendations of the LTC, the Council shall designate the part of the area under the application which is to be a **reserved area**.
- The area so designated shall become a reserved area as soon as the plan for work for the non-reserved area is approved and the contract is signed.



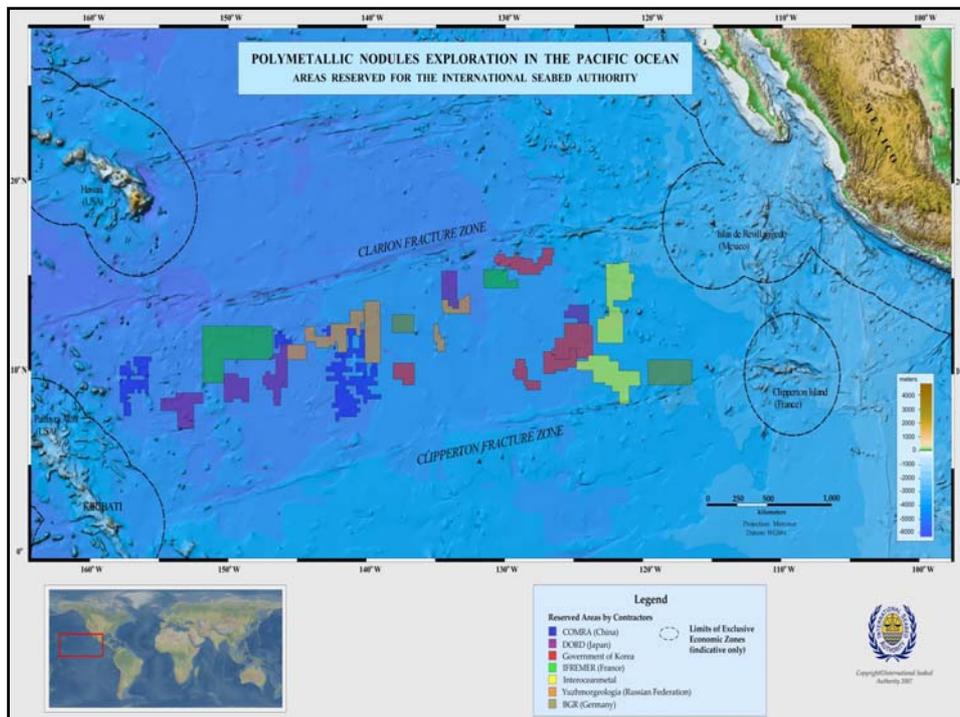
Status of Exploration Contracts for Polymetallic Nodules

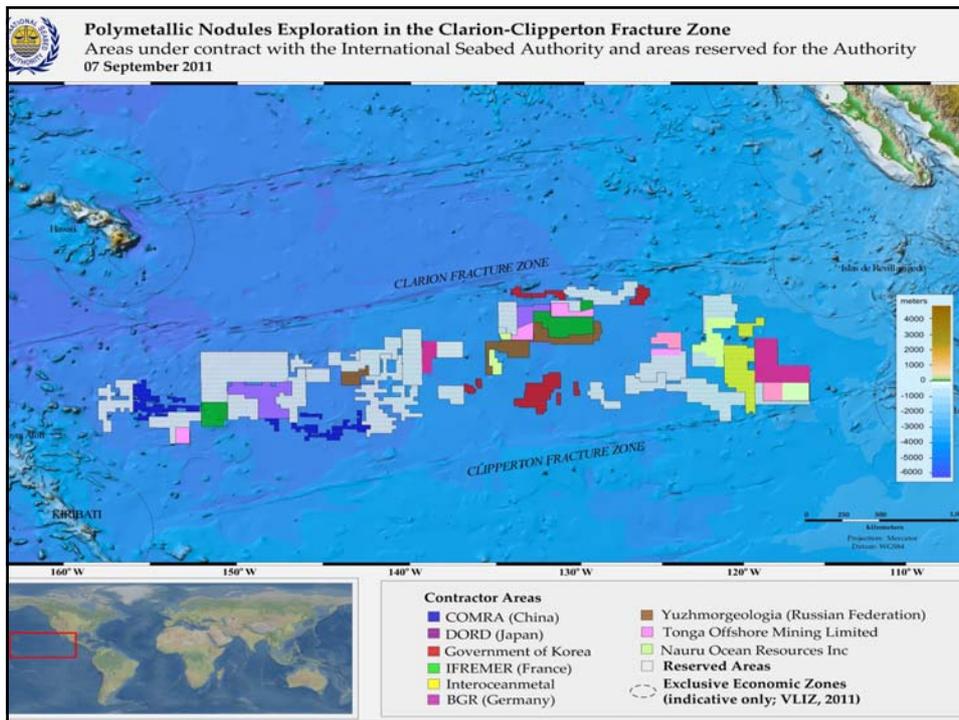
- Currently, the Authority has ten exploration contracts for polymetallic nodules in two geographic areas: the eastern equatorial Pacific Ocean (in an area known as the Clarion-Clipperton Fracture Zone (CCZ)) and in the Central Indian Ocean basin (CIOB). Both geographical areas also contain reserved areas.
- Nine contractors have exploration contracts for areas in the CCZ, with two areas under the sponsorship of developing States.
- The contractors in the CCZ, their sponsoring States, and the size of their exploration areas are contained in Table 1.

Table 1: Contractors in the Pacific Ocean (CCZ)

Contractor	Date of Signature	Sponsoring State	Size Exploration Area
1. State Enterprise Yuzhmorgeologiya	29 March 2001	Russian Federation	75,000 km ²
2. Interoceanmetal Joint Organization (IOM)	29 March 2001	Bulgaria, Cuba, Czech Rep., Poland, Russian Fed. and Slovak Rep.	75,000 km ²
3. The Government of the Republic of Korea	27 April 2001	Republic of Korea	75,000 km ²
4. China Ocean Minerals Research and Development Association (COMRA)	22 May 2001	People's Republic of China	75,000 km ²
5. Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)	20 June 2001	France	75,000 km ²
6. Deep Ocean Resource Development Company	20 June 2001	Japan	75,000 km ²
7. Federal Institute of Geosciences and Natural Resources	19 July 2006	Federal Republic of Germany	75,000 km ²
8. Nauru Ocean Resources Inc. (NORI)	22 July 2011	Nauru	75,000 km ²
9. Tonga Offshore Mining Ltd (TOML)	11 January 2012	Kingdom of Tonga	75,000 km ²

Reserved areas in the CCZ: China, Japan, IOM, the Republic of Korea, France and the Russian Federation, each contributed 150,000 square kilometers.

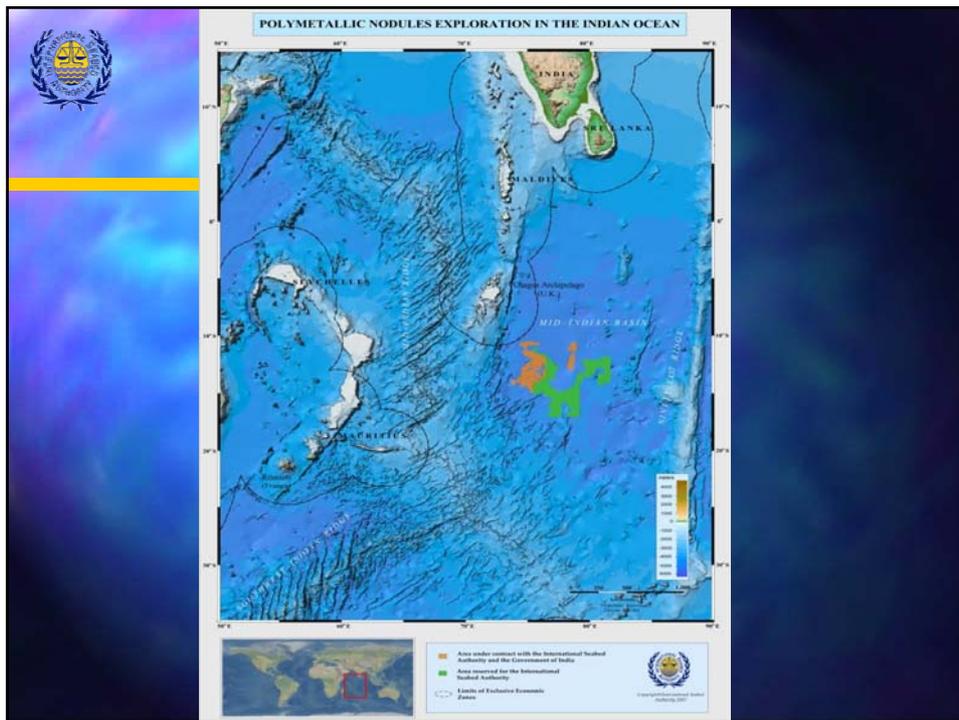




There is a single contractor in the Central Indian Ocean basin. This is the Government of India, which also contributed a reserved area. Table 2 contains the particulars of the Government of India's contract area, and the adjoining figure the contract and reserved areas associated with India's application.

Table 2: Polymetallic Nodules Contractor in the CIOB

Contractor	Date of Signature	Sponsoring State	Size Exploration Area
The Government of India	25 March 2002	India	75,000 sq. km
Reserved Area			
Contributed by the Government of India			150,000 sq. km



Polymetallic sulphides and cobalt-rich ferromanganese crusts deposits in the Area

At the resumed fourth session in 1998, the delegate of the Russian Federation, brought to the attention of the Assembly that two other kinds of minerals had been the subject of scientific and commercial investigation since the early eighties. He identified cobalt-rich ferromanganese crusts and polymetallic sulphides deposits which he stated had been found in the international seabed area. He pointed out that Russian scientists had carried out investigations on cobalt-bearing crusts in the Magellan Seamount area (13 and 17 degrees North and 154 and 157 degrees East), and also on polymetallic sulphides at the Polyarnoye hydrothermal field in the Mid-Atlantic Ridge. Referring to the market situation of metals, he requested that the Authority adopt rules, regulations and procedures for prospecting and exploration for these resources. He also referred to article 163, paragraph (o) (ii) which states that rules on exploration for resources other than polymetallic nodules in the Area shall be adopted three years from the date of a request to the Authority by any of its members.



Polymetallic sulphides and cobalt-rich ferromanganese Crusts deposits in the Area

- Unlike polymetallic nodules about which some information and data had been obtained prior to the establishment of the Authority, such information and data were far less available for polymetallic sulphides and cobalt-rich ferromanganese crusts deposits. With the limited budget at the disposal of the Authority, as had been done for similar matters regarding nodules, technical workshops were convened by the Authority using international experts on both resources with a view to informing the organs of the Authority of the state of knowledge of these resources.



Technical Workshops

Cobalt bearing crusts and polymetallic sulphides

- Workshop on Mining of Cobalt Rich Ferromanganese Crusts and Polymetallic Sulphides - Technological and Economic Considerations *31 July - 4 August 2006*
- Workshop for the Establishment of Environmental Baselines at Deep Seafloor Cobalt-Rich Crusts and Deep Seabed Polymetallic Sulphide Mine Sites in the Area For the Purpose of Evaluating the Likely Effects of Exploration and Exploitation on the Marine Environment. *6-10 September 2004*
- Mineral Resources of the International Seabed Area other than polymetallic nodules, eg: polymetallic sulphides, cobalt-rich crusts, gas hydrates. *26 – 30 June 2000*





Polymetallic sulphides and cobalt-rich ferromanganese crusts deposits

- At the seventh session of the Authority, the Secretariat provided the Council with document ISBA/7/C/2, on "Considerations relating to the regulations for prospecting and exploration for hydrothermal polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area." The document provided information on the characteristics of both deposits, considerations relating to the regime for prospecting and exploration for polymetallic sulphides and cobalt crusts, the size of exploration areas and relinquishment, site banking, overlapping claims, and model clauses that could be used in a contract.



Polymetallic sulphides and cobalt-rich ferromanganese crusts deposits

- At the tenth session of the Authority, the Legal and Technical Commission proposed document ISBA/10/LTC/WP1 Draft regulations on prospecting and exploration for *polymetallic sulphides and cobalt-rich ferromanganese crusts* in the Area, or the consideration of Council.
- At the twelfth session of the Authority, following the Authority's second workshop on polymetallic sulphides and cobalt-rich ferromanganese crusts, as well as a series of explanatory notes on the draft regulations requested by Council, it was decided to prepare a set of regulations for each of the resources.



Polymetallic sulphides deposits

- At the 13th session of the Authority, the Legal and Technical Commission submitted document ISBA/13/LTC/WP1 - Draft regulations on prospecting and exploration for polymetallic sulphides in the Area to the Council for its consideration.
- Following its consideration of the draft regulations, at the 16th session, the Assembly decided to approve the draft Regulations as provisionally adopted by the Council.



Polymetallic Sulphides

Regulations for Prospecting and Exploration

ISBA/16/C/LS-Adopted by the Authority on 6 May 2010

- A comprehensive legal framework for prospecting and exploration for polymetallic sulphides in international seabed areas - the "Area"
- Forms the basis upon which Plans of Work for exploration for Polymetallic Sulphides are approved and contracts issued for activities in the "Area"
- Consists of 44 regulations and 3 annexes, including a model contract.
- Provides for an applicant to elect a reserved area contribution to the Authority or to offer an equity interest in a joint venture arrangement with the Enterprise.



- The total area allocated to the contractor shall not exceed 10,000 square kilometres. The contractor shall relinquish parts of the area allocated to it in accordance with the following schedule:
 - (i) 50% by the end of the 8th year from the date of the contract;
 - (ii) 75% of the allocated to it by the end of the 10th year



Contracts with the Authority for exploration for polymetallic sulphides

- On 7 May 2010, an application for approval of a plan of work for exploration for polymetallic sulphides in the Area was submitted by China Ocean Minerals Research and Development Association (COMRA).
- On 24 December 2010, an application for approval of a plan of work for polymetallic sulphides deposits in the Area was submitted by the Government of the Russian Federation.
- Both applications were approved on 19 July 2011



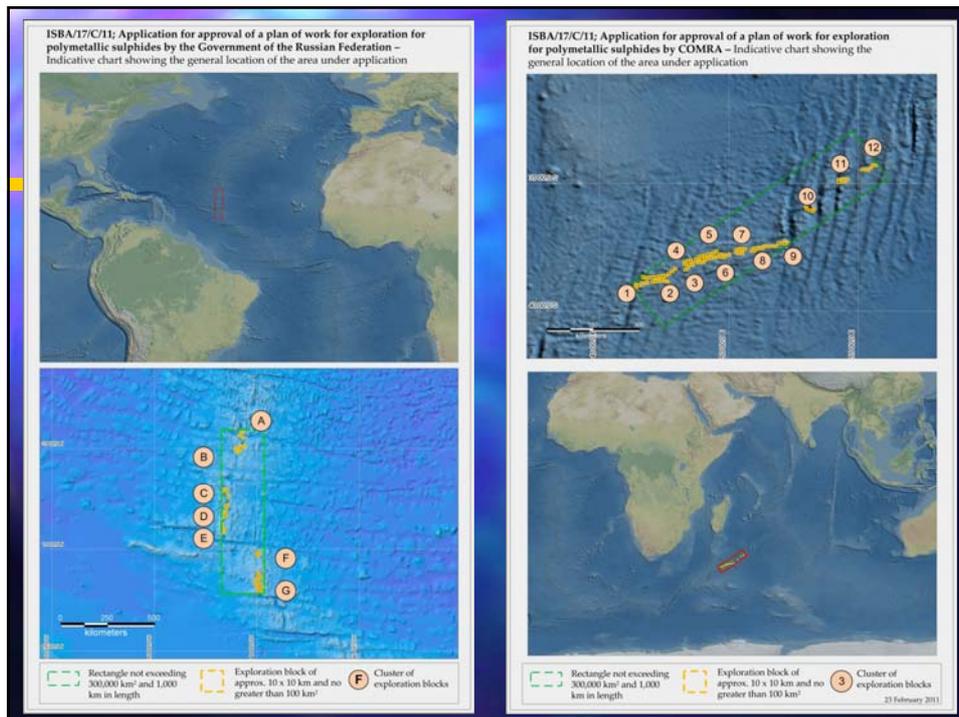
Contracts for exploration for polymetallic sulphides deposits in the Area

- The application area of COMRA is located in the Southwest Indian Ridge. It includes 100 blocks measuring approximately 10 kilometres by 10 kilometres each, but not exceeding 100 km².
- The total area covered by the application is approximately 10,000 km² and does not exceed 10,000 km².
- The blocks under application are grouped into 12 clusters, each containing from 5 to 19 blocks. The clusters of blocks of polymetallic sulphides are not contiguous, but are proximate and confined within a rectangular area not exceeding 300,000 km² in size where the longest side does not exceed 1,000 kilometres in length.



Contracts for exploration for polymetallic sulphides in the Area

- The Government of the Russian Federation's contract area is located in the central part of the Atlantic Ocean in the axial zone of the Mid-Atlantic Ridge.
- It includes 100 blocks measuring approximately 10 kilometres by 10 kilometres each but not exceeding 100 square kilometres. The blocks under application are grouped into seven clusters each containing from 8 to 36 blocks.
- The clusters of blocks of polymetallic sulphides are not contiguous but are proximate and confined within a rectangular area covering 216,622 square kilometres. The longest side of the rectangular area is 897 kilometres.



Cobalt-rich ferromanganese crusts deposits

- Cobalt-rich iron-manganese crusts occur throughout the global ocean on seamounts, ridges and plateaux where currents have kept the rocks swept clean of sediments for millions of years. Crusts precipitate from cold ambient seawater onto rock substrates, forming pavements up to 250 mm but also for titanium, cerium, nickel, platinum, manganese, thallium, tellurium, tungsten, bismuth, zirconium and other metals.
- Crusts form at water depths of about 400-4,000 m, with the thickest and most cobalt-rich crusts occurring at depths of about 800-2,500 m. Gravity processes such as landslides, as well as sediment cover, submerged and emergent reefs, and currents control the distribution and thickness of crusts.



Cobalt-rich ferromanganese crusts deposits

- Following the decision to separate the regulations into the two resource types, the Secretariat prepared the revised draft regulations relating to cobalt-rich ferromanganese crusts (ISBA/13/LTC/WP.1). The revised draft was based on document ISBA/10/C/WP.1/Rev.1*, with technical adjustments consistent with the recommendations that emerged from the discussions during the Authority's workshop on technical and economic considerations relating to mining polymetallic sulphides and cobalt-rich crusts in the Area held from 31 July to 4 August 2006.
- The Legal and Technical Commission considered this document and at the 16th session, it submitted the draft regulations to the Council for its consideration. The draft regulations are contained in document ISBA/16/C/WP2



Cobalt-rich ferromanganese crusts deposits

- The draft regulations are still under consideration by the Council, that will take it up at the 18th session.



Functions:

Protect and conserve the natural resources of the Area and prevent damage to the flora and fauna of the marine environment

- All of the Authority's regulations emphasize the need to protect and conserve the natural resources of the Area. In this regard, during exploration, the contractor is requested to collect environmental baseline data against which to assess the impact of its activities on the environment. The resource for which the most has been done is polymetallic nodules.
- With regard to environmental protection, the Authority's objectives are to:

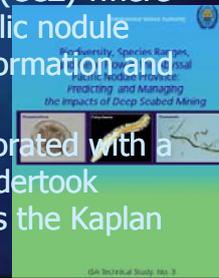


- Compile databases of specialized environmental parameters, including physical, chemical and biological data;
- Standardize these data and produce standardized sampling strategies , and
- Promote Marine Scientific Research in connection with these efforts



Environmental protection

- A major challenge for the Authority has been the dearth of knowledge of the fauna associated with the different mineral resources in the Area. Since nodule prospecting and exploration started before the establishment of the Authority, there were no requirements for pioneer investors, marine scientific researching organization and other interests. For example, in the Clarion Clipperton Fracture Zone (CCZ) where there are currently nine contractors for polymetallic nodule exploration, it has proven difficult to compare information and data in the absence of standardized taxonomy.
- To help rectify this situation, the Authority collaborated with a number of organisations and contractors, and undertook research in the CCZ. The name of the project was the Kaplan Project.



Environmental Protection

- The Kaplan project spurred a number of other initiatives including an Environmental Management Plan for the CCZ. A big stumbling block in this regard is the lack of standardization of the data, particularly taxonomic standardization.
- The Authority has taken steps in this regard by exchanging views with contractors on how to proceed. There is agreement on how to review the data that has been collected and determine their comparability, as well as undertaking workshops among contractor scientists and others to select a standardized taxonomy for associated fauna.
- Similar efforts will be undertaken for fauna associated with polymetallic sulphides and cobalt-rich ferromanganese crusts.



Other substantive activities.

- Since its establishment, the Authority has created a Central Data Repository that contains information and data on marine mineral resources in the Area
Its objectives are to:
 - Collect and centralize all public and private data and information on marine mineral resources and their associated environment,
 - Facilitate standardization of data and their collection, and to
 - Disseminate the available data



Other substantive activities

- Geological models: The Authority has also completed a geological model of polymetallic nodule resources in the CCZ. An outstanding feature of this endeavour was the cooperation from the exploration contractors. A similar effort is planned for the Central Indian Ocean basin .
- As data and information become available for the two other resources, similar efforts will be undertaken.
- Resource assessment of reserved areas: The Authority has undertaken a resource assessment of the polymetallic nodule deposits in the reserved areas of the CCZ. This shows that in situ resources are beyond the scale of any similar deposits on land. It will continue to monitor developments and update the assessments as more data are made available.



Future Activities

- Processing and Monitoring of contracts for exploration for polymetallic nodules and polymetallic sulphides (especially environmental aspects).
- Development of rules, regulations and procedures for the exploitation of polymetallic nodules in the Area.
- Further development of:
 - Central Data Repository.
 - Resource assessment of reserved areas and
- Promotion of marine scientific research in the deep seabed to facilitate the work of the various organs of the Authority.



Thank you very much

I wish to thank all of you for this opportunity to inform you about progress with the development of the "Common Heritage of mankind"