



The International Seabed Authority: Its Roles, Organs and Functions

Nii Allotey Odunton

Secretary-General

International Seabed Authority

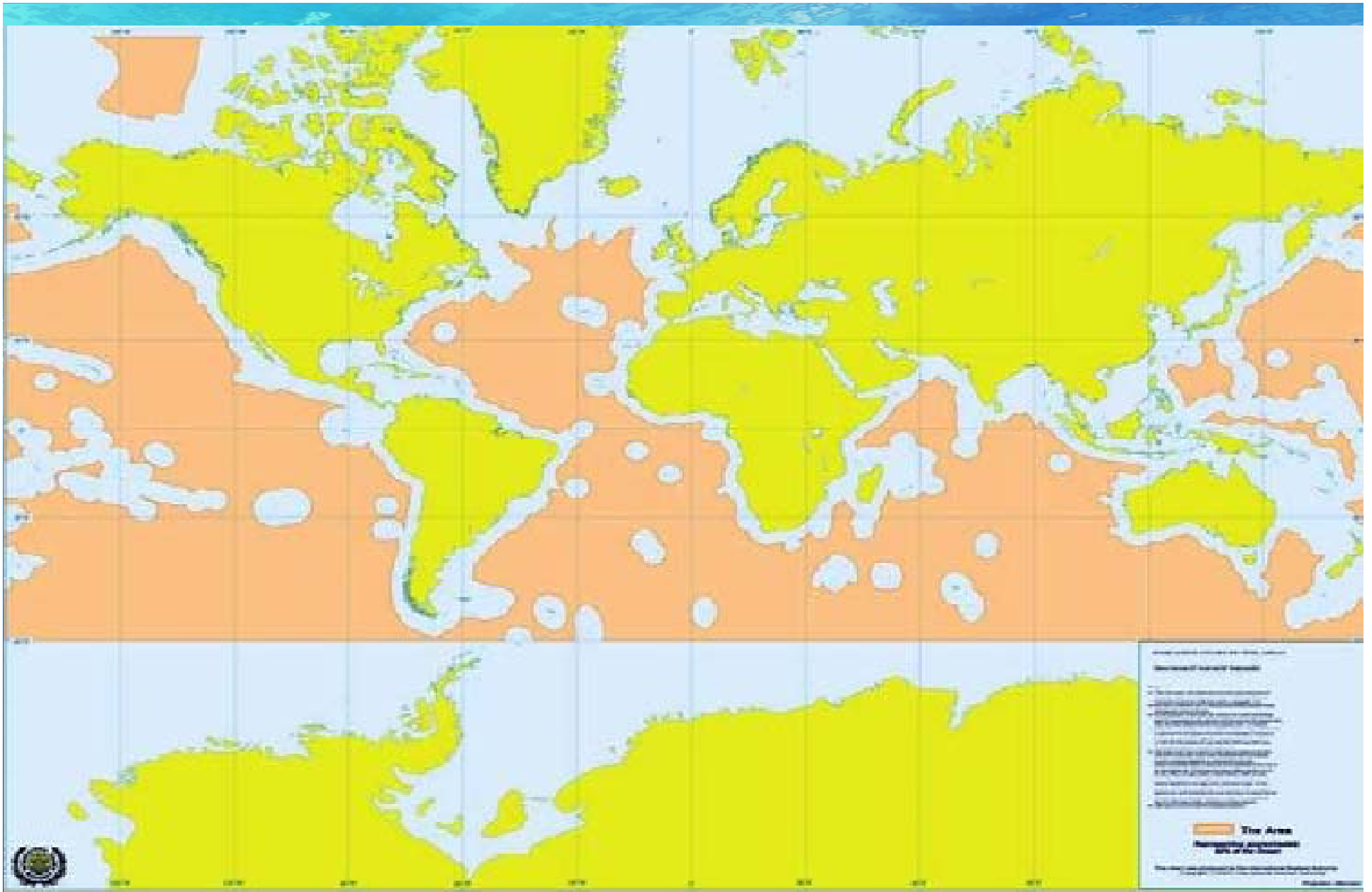
Sensitization Seminar on the Work of the Authority

28-30 March 2011, Kingston, Jamaica



1. The International Seabed Authority is an autonomous international organization established to organize and control all mineral development related activities in marine areas beyond the limits of national jurisdiction (the “Area”), a geographic area underlying most of the world’s oceans. The Authority came into existence on 16 November 1994, upon entry into force of the 1982 United Nations Convention on the Law of the Sea.





*Marine areas beyond the limits of national jurisdiction.
Indicative and not including claims for extended continental shelves*



2. The tasks of the International Seabed Authority are defined by the United Nations Convention on the Law of the Sea, as refined by the 1994 Agreement relating to the implementation of Part XI (which contains the seabed provisions) of the Convention. The Convention defines the Area and its resources as “the common heritage of mankind”.^{1/}, the Convention also states that, inter alia, “All rights in the resources of the Area are vested in mankind as a whole, on whose behalf the Authority shall act.”^{2/}
3. In addition, the 1994 Agreement states that “The International Seabed Authority is the organization through which States Parties to the Convention shall, in accordance with the regime for the Area established in Part XI and this Agreement, organize and control activities in the Area, particularly with a view to administering the resources of the Area”.

^{1/} Article 136 (Common heritage of mankind)

^{2/} Article 137, paragraph 2 of the Convention (Legal status of the Area and its resources)



4. In relation to the undiscovered and unknown resources of the Area, including the scientific knowledge required to protect the environment when these resources are exploited, article 143 of the Convention (Marine Scientific Research) provides the Authority and States Parties with the right to undertake marine scientific research with a view to the discovery of unknown resources (prospecting) as well as to obtain a better understanding of the environments in which these resources occur.^{3/} With regard to known resources and the interest that States Parties might have in developing them (exploration and exploitation), the Convention and the Agreement provide extensive provisions for these activities.

^{3/} Article 143 (Marine Scientific Research) contains three paragraphs as follows:

1. Marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole, in accordance with Part XIII.
2. The Authority may carry out marine scientific research concerning the Area and its resources, and may enter into contracts for that purpose. The Authority shall promote and encourage the conduct of marine scientific research in the Area, and shall coordinate and disseminate the results of such research and analysis when available.
3. States Parties may carry out marine scientific research in the Area. States Parties shall promote international cooperation in marine scientific research in the Area by:
 - (a) Participating in international programmes and encouraging cooperation in marine scientific research by personnel of different countries and of the Authority;
 - (b) Ensuring that programmes are developed through the Authority or other international organizations as appropriate for the benefit of developing States and technologically less developed States with a view to:
 - (i) Strengthening their research capabilities; (ii) Training their personnel and the personnel of the Authority in the techniques and applications of research; (iii) Fostering the employment of their qualified personnel in research in the Area;
 - (c) Effectively disseminating the results of research and analysis when available, through the Authority or other international channels when available.



Based on these provisions, the Authority formulates and adopts Regulations for the conduct of activities in the Area.

5. The principal organs of the Authority are an **Assembly**, a **Council** and a **Secretariat**. The Authority presently has two subsidiary organs; a Legal and Technical Commission and a Finance Committee.^{4/}

THE ASSEMBLY

6. The Assembly, as the sole organ of the Authority consisting of all its members, is the supreme organ of the Authority to which the other principal organs are accountable. Currently the Authority has **161** members, including the European Community.

^{4/} Under article 163 of the Convention, The Council is to have two subsidiary organs: An Economic Planning Commission and a Legal and Technical Commission. In addition under article 162, paragraph 2(y) the Council was to establish another subsidiary organ to deal with financial matters. Paragraph 4 of Section 1 of the annex to the Agreement requires, the functions of Economic Planning Commission shall be that performed by the Legal and Technical Commission until such time as the Council decides otherwise or until the approval of the first plan of work for exploitation.



THE COUNCIL

7. The Council consists of **36** members of the Authority elected by the Assembly into five chambers as follows:
 - (a) **Four members** from among those States Parties which, during the last five years for which statistics are available, have either consumed more than 2 per cent in value terms of total world consumption or have had net imports of more than 2 per cent in value terms of total world imports of the commodities produced from the categories of minerals to be derived from the Area, provided that the four members shall include one State from the Eastern European region having the largest economy in that region in terms of gross domestic product and the State, on the date of entry into force of the Convention, having the largest economy in terms of gross domestic product, if such States wish to be represented in this group;
 - (b) **Four members** from among the eight States Parties which have made the largest investments in preparation for and in the conduct of activities in the Area, either directly or through their nationals;



- (c) **Four members** from among States Parties which, on the basis of production in areas under their jurisdiction, are major net exporters of the categories of minerals to be derived from the Area, including at least two developing States whose exports of such minerals have a substantial bearing upon their economies;
- (d) **Six members** from among developing States Parties, representing special interests. The special interests to be represented shall include those of States with large populations, States which are land-locked or geographically disadvantaged, island States, States which are major importers of the categories of minerals to be derived from the Area, States which are potential producers of such minerals and least developed States;
- (e) **Eighteen members** elected according to the principle of ensuring an equitable geographical distribution of seats in the Council as a whole, provided that each geographical region shall have at least one member elected under this subparagraph. For this purpose, the geographical regions shall be Africa, Asia, Eastern Europe, Latin America and the Caribbean, and Western Europe and Others.



8. The Council is the executive organ of the Authority. The Council has the power to establish, in conformity with the Convention and the general policies established by the Assembly, the specific policies to be pursued by the Authority on any question or matter within the competence of the Authority.

SECRETARIAT

10. The third principal organ of the Authority is the Secretariat which is headed by a Secretary-General. Mr. Nii Allotey Odunton of Ghana was elected for a four-year term beginning 1 January 2009.

SUBSIDIARY BODIES

11. In addition to these principal organs, two subsidiary bodies perform functions of an advisory nature for the Council and Assembly. These are the Legal and Technical Commission and the Finance Committee respectively.



(i) The Legal and Technical Commission

12. The Legal and Technical Commission is a subsidiary organ of the Council composed of 25 members elected by the Council from among candidates nominated by the States Parties for a period of five years.^{5/} The qualifications of members are those relevant to exploration for and exploitation and processing of mineral resources. The Legal and Technical Commission makes recommendations to the Council on, inter alia, rules, regulations and procedures for prospecting, exploration and exploitation of mineral resources in the Area, the approval of applications for exploration and exploitation of the mineral resources of the Area, the protection of the marine environment from related activities, and the establishment of monitoring programmes to observe, measure, evaluate and analyse the risks or effects of these activities on the marine environment. It also makes recommendations on requests by the Council.

^{5/} Article 163, paragraph 2 specifies that the size of the Legal and Technical Commission should be 15 members.



(ii) *The Finance Committee*

13. The Finance Committee was established by the Agreement, specifically Section 9 of its annex. It comprises 15 members elected by the Assembly from nominations by States Parties. Until the Authority has sufficient funds other than assessed contributions to meet its administrative expenses, membership of the Committee shall include representatives from the five largest contributors to its administrative budget. Additionally, it shall have at least one member from each of the groups identified in paragraphs 7 (a), 7 (b), 7 (c), and 7 (d) above. Decisions of the Assembly and Council on the financial matters, including, *inter alia*, the financial rules, regulations and procedures of the Authority, the assessment of contributions of members to the Authority's administrative budget, the administrative budget and the financial implications of the implementation of the programmes of work of the Secretariat have to take into account the recommendations of the Finance Committee.
14. The Authority holds one annual session, usually of two weeks duration at its Headquarters.



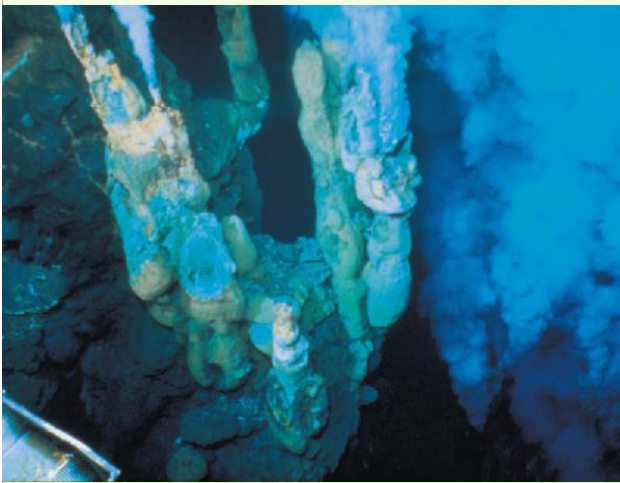
THE MAIN FUNCTIONS OF THE INTERNATIONAL SEABED AUTHORITY

15. Under the Convention and the Implementation Agreement, presently the Authority has four main functions. These are:
- (i) To administer the mineral resources of the international seabed area (The Area) which together are known as the common heritage of mankind;
 - (ii) To adopt rules, regulations and procedures for the conduct of activities (prospecting, exploration and exploitation of the mineral resources) in the Area;
 - (iii) To promote and encourage marine scientific research in the Area, and
 - (iv) To protect and conserve the natural resources of the Area, and prevent damage to the flora and fauna of the marine environment.

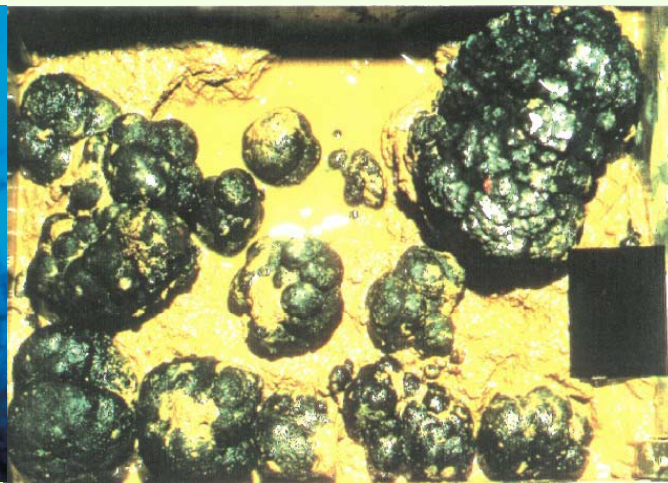


MINERAL RESOURCES OF THE AREA

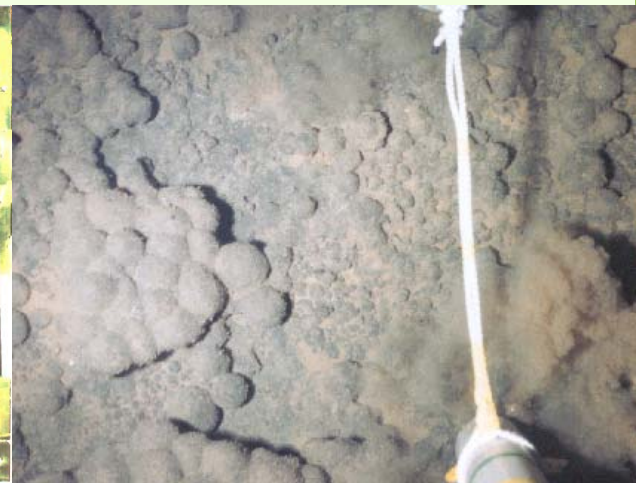
16. At the present time, the main mineral resources known to exist in the area are polymetallic nodules, cobalt-rich ferromanganese crusts and polymetallic sulphides. It is significant to note that all of them were discovered through marine scientific research which in mineral development terms can be equated to prospecting.



Polymetallic Sulphides



Polymetallic Nodules



Cobalt-Rich Crusts



POLYMETALLIC NODULES

17. The metals contained in deep seabed nodules are derived from erosion of rocks on land which are transported into the oceans by rivers in dissolved form and subsequently precipitated on the floor of the deep oceans. Polymetallic nodules were discovered in 1868 in the Kara Sea in the Arctic Ocean of Siberia. During the scientific expeditions of the HMS Challenger (1872-76), they were found to occur in most oceans of the world. The deep seabed polymetallic nodules of commercial interest in the international area are to be found in the Clarion-Clipperton fracture zone in the equatorial Pacific Ocean, and in the central Indian Ocean basin. Polymetallic nodules occur on the floor of the oceans in a single layer. They contain various metals, among which nickel, copper, cobalt and manganese (molybdenum, vanadium titanium and the rare earths) are of economic interest. The grade of nodules (the content of the various metals of interest in a nodule expressed as a percentage of its dry weight) and the abundance of nodules (the weight of wet of nodules per unit area of ocean floor usually expressed as kg per sq. m) determine the amount of metals contained *in situ* in a given area. Grades for potential economic deposits have been given in the general range 1.1 – 1.6% nickel, 0.9 – 1.2% copper, 0.2 – 0.3% cobalt and 25.0 – 30.0% manganese. The range for abundance is indicated as 5.0 – 15.0 kg per sq. m.



18. Since 1958, when Dr. John Mero, a mining engineer at the University of California first published an economic discourse on the vast potential of deep seabed polymetallic nodules as sources of nickel, copper, cobalt and manganese, these resources have dominated the imagination of the international community. The primary forum for discussions on these resources was the Third United Nations Conference on the Law of the Sea, where decisions on a legal framework for developing these resources were incorporated in Part XI of the 1982 United Nations Convention on the Law of the Sea.

FERROMANGANESE COBALT-RICH CRUSTS AND POLYMETALLIC SULPHIDES

19. While the Convention was being negotiated, a scientific revolution in the international community's understanding of the way the earth works, particularly with regard to how marine mineral deposits are formed, occurred in the 1970s and greatly expanded knowledge of the range of the mineral resources that could be found in the marine environment. The scientific revolution was driven by the theory of plate tectonics, which revealed that ocean basins are dynamic features that open and close on a time scale of tens to millions of years, coupled with movements of land areas known as continental drift.



20. Plate tectonics showed that the ocean basins are not simply passive sinks for material eroded from land, but are also active sources of mineralization. Rather than being big bathtubs that hold the oceans, the ocean basins are leaky containers for the seawater, because the volcanic rocks that underlie the seafloor are fractured. Cold, heavy seawater flows kilometres downward and most of it is assimilated into the earth's interior. Where seawater flows near hot molten rocks up welling at plate boundaries submerged under the oceans, it is heated, expands, becomes lighter and rises buoyantly, dissolving and transporting metals from the surrounding rock. The metals react with sulphur in the seawater and precipitate as polymetallic sulphides deposits beneath and on the seafloor. Hot metal and sulphides rich solutions discharge from the seafloor into the deep ocean and precipitate as clouds of metallic mineral particles called "black smokers" because they resemble black smoke billowing from factory smoke stacks.
21. Discovered as recently as 1978, polymetallic sulphides contain copper, iron, zinc, silver, gold and other metals in varying amounts. Polymetallic sulphides deposits occur at areas generally the size of a football field, where hot springs discharge from the seafloor (hydrothermal venting).



These areas are widely spaced along a submerged volcanic mountain range that is approximately 60,000 kilometres in length, at a plate boundary that extends through all the ocean basins of the world largely within the international area, known as the mid-ocean ridge. The same metal-rich seafloor hot springs that concentrate polymetallic sulphides mineral deposits also energize heat-loving microbes. These microbes use chemicals in the hot springs dissolved from the underlying rocks as an energy source to manufacture carbohydrates (sugars and starches) to nourish themselves, largely independent of the light energy from the sun that fuels the photosynthesis in plants at the base of the food chain on land. These chemosynthetic microbes, in turn, are at the base of a food chain that supports an ecosystem of newly discovered life forms in the ocean, which are hosted in the polymetallic sulphides deposits. Commercial applications of these microbes are being found, including the use of their enzymes in DNA finger printing, detergents, food preservation, flow enhancement in deep oil wells, and the use of their bioactive compounds for pharmaceuticals, including some being tested for cancer treatment. A critical challenge therefore exists to manage development of the polymetallic sulphides deposits in an environmentally compatible manner that protects the microbes and ecosystems which the deposits host.^{6/}

^{6/} New Discoveries in the Oceans – Dr Peter Rona, Professor of Marine Geology and Geophysics, Rutgers University. In Proceedings of the Twentieth Anniversary Commemoration of the Opening for signature of the United Nations Convention on the Law of the Sea



22. Cobalt-rich ferromanganese crusts were also discovered during the scientific expedition of the HMS Challenger. The Challenger's dredge hauls yielded not only classical black polymetallic nodules from abyssal depths (4500 to 6000 m), but also recovered a variety of coatings, layers and crusts of ferromanganese materials from lesser depths, some as shallow as 370 metres. They started to be distinguished from polymetallic nodules in the 1970s and their economic potential was recognized. Ferromanganese crusts deposits are recognized as a marine mineral resource which has been precipitated over millions of years from metals dissolved in seawater on the submerged flanks of inactive underwater volcanoes. They occur throughout the world's ocean, and are an important potential resource for cobalt, titanium, cerium, nickel, platinum, manganese, thallium and tellurium.^{8/}

^{8/} Cobalt-rich ferromanganese crusts: Global distribution, composition, origin and research activities – James R. Hein US Geological Survey. In Minerals other than polymetallic nodules of the international seabed area.



ADOPTION OF RULES, REGULATIONS AND PROCEDURES FOR THE CONDUCT OF ACTIVITIES (PROSPECTING, EXPLORATION AND EXPLOITATION OF MINERAL RESOURCES) IN THE AREA

POLYMETALLIC NODULES

23. Mining, whether on land or in the marine environment is a long term process beginning with prospecting to identify deposits of possible economic interest, followed by exploration to delineate deposits that meet economic criteria should technology to mine the deposit be available, and mining to recover the costs of the previous stages of the process (prospecting and exploration) as well as investments to recover the reserves, and turn a profit. In view of the substantial investments required, the process is not undertaken in the absence of an acceptable legal regime that identifies rights and obligations during the entire process. On 13 July 2000, the Assembly of the Authority approved Regulations on Prospecting and Exploration for polymetallic nodules in the Area.^{10/} These rules, regulations and procedures started with the United Nations Convention on the Law of the Sea, the work of the

^{10/} ISBA/6/A/18

^{11/} The Preparatory Commission for the International Seabed Authority and for the International Tribunal for the Law of the Sea was formally established by resolution I of the United Nations Convention for the Law of the Sea. It met from 1983 to 1994 with a mandate that included, inter alia, preparing draft rules, regulations and procedures as necessary to enable the Authority to commence its functions, and to administer the interim regime for pioneer investors. During its life, the Preparatory Commission registered seven pioneer investors; six of whom were allocated areas in the Clarion-Clipperton fracture zone with the seventh in the central Indian Ocean basin.



Preparatory Commission for the International seabed Authority,^{11/} the Implementation Agreement on part XI of the Convention, and a draft prepared by the Secretariat of the Authority which was refined by the Authority's Legal and Technical Commission. The Regulations consist of 40 regulations and 4 annexes, including a model contract. The adoption of the Regulations enabled the Authority to issue contracts for exploration for fifteen years to the seven former registered pioneer investors (Figure 3). Subsequently Germany entered into an exploration contract with the Authority, making it the eighth contractor. At the Seventeenth Session, the Authority will consider two new applications for exploration by Nauru Ocean Resources Inc. and Tonga Ocean Mining Limited.

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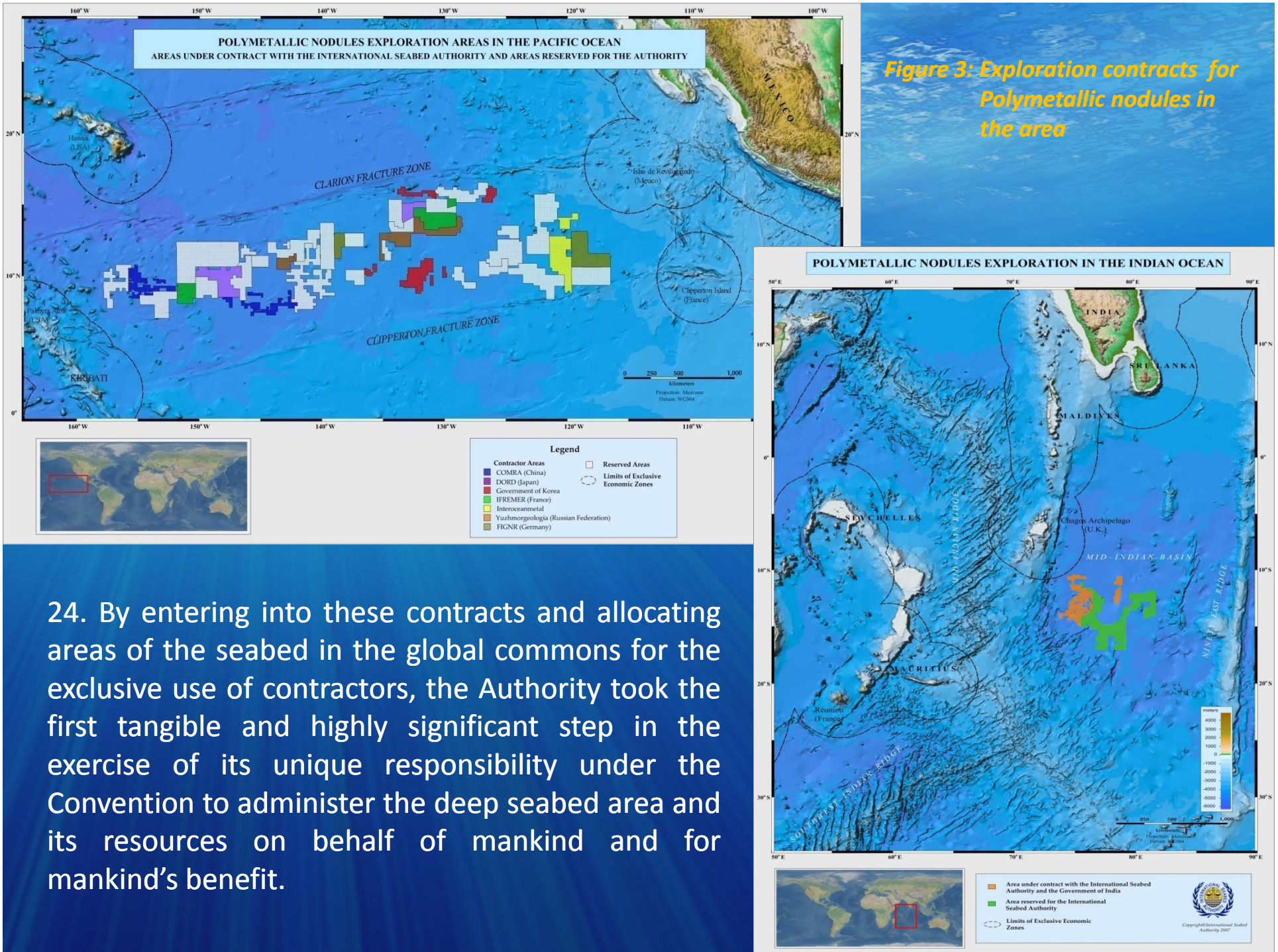


Figure 3: Exploration contracts for Polymetallic nodules in the area

24. By entering into these contracts and allocating areas of the seabed in the global commons for the exclusive use of contractors, the Authority took the first tangible and highly significant step in the exercise of its unique responsibility under the Convention to administer the deep seabed area and its resources on behalf of mankind and for mankind's benefit.

25. I should emphasize that one of the terms of the contract requires the contractor to provide annual reports on their activities to the Authority. These reports are regularly examined by the Legal and Technical Commission that makes recommendations on them to the Council.

POLYMETALLIC SULPHIDES DEPOSITS

26. At its Sixteenth Session, last year, the Authority adopted rules, regulations and procedures for prospecting and exploration for polymetallic sulphides in the Area. The regulation consist of 44 regulations and 4 annexes, including a model contract.

27. On 25 May 2010, the China Ocean Mineral Resources Research and Development Association (COMRA) submitted an application to the Authority for approval of a plan of work for exploration for polymetallic sulphides. The general location of the application is in the Southwest Indian Ocean Ridge. This application will be placed on the agenda of the Legal and Technical Commission at the Seventeenth Session in July 2011.

28. On 10 January 2011, the Ministry of Natural Resources and the Environment of the Russian Federation submitted an application to the Authority for approval for a plan of work for exploration for polymetallic sulphides. The general location of the



application is on the mid-Atlantic Ridge. This application will also be placed on the agenda of the Legal and Technical Commission at the Seventeenth Session

COBALT-RICH FERROMANGANESE CRUSTS

29. At the Sixteenth Session (2010) the Council began its consideration of the draft Regulations on Prospecting and Exploration for cobalt-rich ferromanganese crusts in the Area. Since it did not have sufficient time to complete its work, it will continue its consideration of the Regulations at the Seventeenth Session. Among the issues it will need to address in more detail in relation to the regulations are the appropriate size and configuration of areas for exploration.



PROTECTION AND CONSERVATION OF THE NATURAL RESOURCES OF THE AREA AND PREVENTION OF DAMAGE TO THE FLORA AND FAUNA OF THE MARINE ENVIRONMENT

30. In administering the mineral resources of the Area, the Authority is required to ensure effective protection of the marine environment, and therefore biodiversity, from harmful effects which may arise both from exploration for, and subsequent exploitation of, these resources.^{12/} In addition, the Authority has a general responsibility to promote and encourage the conduct of marine scientific research in the Area, and to coordinate and disseminate the results of such research and analysis.^{13/}
31. With these objectives in mind, the Authority has developed and adopted regulations to govern prospecting and exploration for polymetallic nodules deposits in marine areas beyond the limits of national jurisdiction. The Authority has also adopted Regulations on prospecting and exploration for polymetallic sulphides deposits in the Area.^{14/} Given the dearth of knowledge of the marine environment of the Area and the potential impact of exploration and mining on its biodiversity, these regulations have a strong environmental focus. This focus is

^{12/} Article 145 | ^{13/} Article 143(2) | ^{14/} ISBA/10/C/WP.1



manifested initially in ensuring that contractors, in cooperation with the Authority and the contractor's sponsoring State or States, acquire environmental baseline data to establish baselines against which to assess the likely impact of exploration and mining activities on the marine environment including its biodiversity, and to cooperate fully in the implementation of environmental monitoring programmes.

32. Any human activity in the Area, whether it is prospecting, exploration or exploitation of mineral resources, is likely to have some effect on the marine environment and hence biodiversity. Yet some such activities need to go ahead if there is to be any utilization of the resources of the Area in future. It is essential to begin the process of environmental regulation at an early stage with a view to ensuring that the critical decisions that will have to be made in the future when mining is imminent are made on the basis of adequate scientific information, using consistent methods of analysis and environmental characterization, rather than on the basis of political considerations and public perceptions. What is also significant is that the biodiversity of the deep seabed is intimately associated with the mineral resources to the extent that one cannot be considered in isolation from the other.



Fauna associated with Deep Seabed Polymetallic Nodule Deposits (Abyssal Plains)



Figure 4 (above): Deep Sea Octopus Grimpotheuthis)
Figure 5 (right): Deep Sea Ampipod (Eurythenes)

(Images courtesy of DeepSeaPhotography.com)

Fauna associated with Polymetallic Sulphides (*Hydrothermal Vents*)

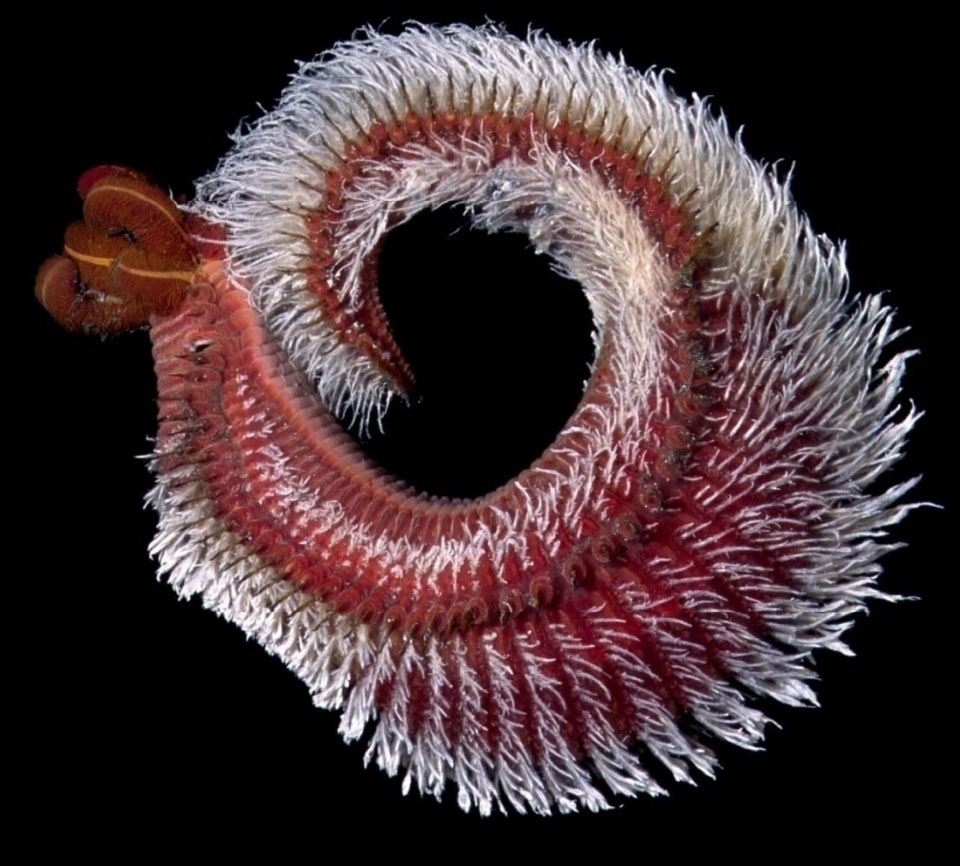


Figure 6 (left): Giant Tubeworms (*Riftia Pachyptila*)

Figure 7: (above): Deep Sea Pompeii Worms (*Alvinella* Worm)

(Images courtesy of DeepSeaPhotography.com)



Fauna associated with Cobalt-Rich Ferromanganese Crusts (*Seamounts*)



Figure 8: Googly-eyed Squid (*Teuthowenia Pellucida*)



Figure 9: Deep Sea Corallimorph (*Corallimorpha*)

(Courtesy of DeepSeaPhotography.Com)



33. Threats to deep sea biodiversity from mineral prospecting, mineral exploration or mineral exploitation in the Area need to be managed in such a way so as to prevent species extinctions. In relation to the benthic ecosystem, the Authority is in the process of establishing a framework to successfully manage threats to the marine environment and its biodiversity from activities in the Area, through its regulations on prospecting and exploration for the different types of mineral resources known to exist there. This framework includes the guidelines recommended by the Legal and Technical Commission to contractors for, inter alia, environmental impact assessments, standardization of relevant environmental data and information, international cooperative scientific projects designed to increase the community's knowledge of species ranges, species distribution and gene flow in the various mineral provinces of the Area, and studies aimed at determining the natural variability of environmental baselines in these mineral provinces.



CENTRAL DATA REPOSITORY

34 As part of its mandate, the Authority collects, analyzes and disseminates the results of marine scientific research and assesses data relating to prospecting and exploration for marine mineral resources. At present, uniform formats of the data and useful data summaries are not available or readily accessible to all potential users. The ISA decided to improve this situation by establishing a repository for marine minerals, referred to as the Central Data Repository (CDR). The CDR includes public and private information on marine mineral resources. The CDR is accessible to all member States, displays the acquired data and information, including listings, graphs and maps of the data and information. It also provides quantitative mineral resource assessments, and enables the Authority to process information for the purposes of preparing technical reports.

35. During the initial phase of its development, the Authority assembled information on the form and availability of relevant data on polymetallic nodules from 18 institutions. The subsequent phase involved the development and testing of an integrated relational database that has uses as



a management and research tool worldwide. In 2001, the contents of the CDR were augmented with data and information on cobalt-rich ferromanganese deposits. In 2002, the repository was further enriched with data on hydrothermal vent systems and polymetallic sulphides. The data sets have been structured and integrated into the CDR and are accessible via the Internet at www.cdr.isa.org.jm or through a link on the Authority's web site at www.isa.org.jm.

36. As more data and information are obtained by the Authority, they are added to the CDR. Presently, the CDR contains over 2,700 sample records for polymetallic nodules, 2,640 records of geochemical analyses for polymetallic sulphides occurrences, and over 3,500 sample records of ferromanganese crusts occurrences. Data contained in the repository have been obtained from scientific and technical bodies, including the Geological Survey of Canada, the National Geophysical Data Centre (USA), the National Oceanic and Atmospheric Administration (USA), Scripps Institution of Oceanography (USA), the United States Geological Survey and others.



37. The image library of fauna associated with the three types of mineral resources is to be augmented. Many of the fauna associated with these provinces are spectacular and are unknown to science. The Authority will investigate ways of making these images available to member states via its website and through its publications.

SENSITIZATION SEMINARS AND TECHNICAL WORKSHOPS OF THE AUTHORITY

SENSITIZATION SEMINARS

38. During the past few years, a matter of concern for the Authority has been participation by its members at its annual sessions. In this regard it was pointed out that policy makers and technical personnel in many of the States parties were not aware of the work of the Authority. It was also pointed out that in many countries it was felt that deep seabed mining was a matter for the distant future. To overcome these perceptions, the Authority has undertaken a few seminars to sensitize interested States Parties on the institutions created by the United Nations Convention on the Law of the Sea (The Tribunal and the Continental Shelf Commission), and the Division for Ocean Affairs and the Law of the Sea in the United Nations. At the seminars it also sensitizes participants on the work of the Authority.



39. Four such seminars have been convened. The first was in Manado, Indonesia, the second in Rio de Janeiro in Brazil, the third in Abuja, Nigeria and the fourth in Madrid, Spain. This is the fifth seminar. At the seminar in Brazil, an interesting proposal for collaborative work in the Equatorial and South Atlantic Ocean was made. It is to comprise the coastal states bordering this Ocean and would be in the form of marine scientific research to identify mineral deposits in this part of the Area. The Abuja seminar built on this proposal. At the present time, the proposal foresees cruises to the mid Atlantic ridge in search of potential mineral deposits by the states bordering the two oceans. The Authority welcomes this possible future collaboration as an integral part of marine scientific research.

40. It is starkly evident during the limited lifetime of the Authority that man's knowledge of marine minerals and the environment in which they occur is at a rudimentary stage. It is for this reason that the Authority has embarked on a series of scientific and technical workshops on the marine mineral resources of the Area, and their associated environments. These workshops are attended by scientists and experts with hands-on research experience and knowledge of the processes through which mineral



occurrences can be converted into reserves of the metals that they contain. Their presentations and discussions have provided invaluable information to the Authority in general, and to the Legal and Technical Commission in particular.

41. The papers presented at these workshops along with the exchange of views that accompany such presentations are published by the Authority. Some of the publications from the different workshops include,

- i. Deep-seabed polymetallic nodule exploration: Development of environmental guidelines
- ii. Proposed technologies for deep seabed mining of polymetallic nodules
- iii. Minerals other than polymetallic nodules of the international seabed area (in two volumes).
- iv. Environmental impacts of deep seabed mining of polymetallic nodules
- v. Prospects for international collaboration in marine environmental research to enhance understanding of the deep seabed environment.
- vi. Establishment of a geological model of polymetallic nodule deposits in the Clarion Clipperton zone of the Central Pacific Ocean.



- vi. Mining cobalt-rich ferromanganese crusts and polymetallic sulphides deposits: Technological and economic considerations.
- vi. Polymetallic sulphides and ferromanganese crusts deposits: Establishment of environmental baselines and an associated monitoring programme during exploration.

ENDOWMENT FUND FOR MARINE SCIENTIFIC RESEARCH IN THE AREA

42. The International Seabed Authority Endowment Fund for Marine Scientific Research in the Area was established by the Assembly in its resolution ISBA/12/A/11 of 16 August 2006. The Endowment Fund aims to promote and encourage the conduct of marine scientific research in the Area for the benefit of mankind as a whole by supporting the participation of qualified scientists and technical personnel from developing countries in international cooperative marine scientific research programmes and capacity building through training and technical assistance.



43. In accordance with the resolution of the Assembly, the initial capital of the Endowment Fund of \$2,631,803 was derived from application fees paid under resolution II of the Third United Nations Conference on the Law of the Sea by the seven former registered pioneer investors that have entered into contract with the Authority. Additional contributions to the Fund may be made by the Authority, members of the Authority, other States, relevant international organizations, academic, scientific and technical institutions, philanthropic organizations, corporations and private persons. Since its establishment, additional contributions to the Fund have been made by the Governments of Germany (\$250,000), Mexico (\$2,500), Norway (\$250,000), Spain (\$25,514) and the United Kingdom (\$29,800). By December 2009, the capital of the Fund stood at \$3,202,440, with a total accumulated interest of \$360,136.

44. In 2007, the Assembly, on the recommendation of the Finance Committee, adopted detailed rules and procedures for the administration and utilization of the Endowment Fund. These rules and procedures provide comprehensive guidance on making applications for assistance from the Fund, the information that must be submitted, the type of activities that are eligible for funding, and the dissemination and reporting of the outcomes of marine scientific research programmes and scientific cooperation programmes. Applications for assistance from the Fund may be made by any developing country or by any other country if the purpose of the grant is to benefit scientists from developing countries.



45. Pursuant to the agreed procedures, an advisory panel was appointed by the Secretary-General in March 2008 to evaluate applications for assistance from the Fund. The panel is composed of permanent representatives to the Authority, representatives of educational institutions or international organizations and individuals closely associated with the work of the Authority. The members of the Panel were appointed with due regard to equitable geographic representation. The names of the persons appointed to the panel are contained in the annex to the present report.
46. The Fund is administered by the Secretariat of the Authority, which is required to endeavour to make arrangements with universities, scientific institutions, contractors and other entities for opportunities for scientists from developing countries to participate in marine scientific research activities. Such arrangements may include the reduction or waiver of fees for training. The secretariat has carried out a number of activities designed to draw the attention of the international donor community to the opportunities offered by the Fund and to encourage additional contributions. These activities include issuing press releases and promotional materials, maintaining a specially designed page on the Authority's website at www.isa.org.jm, and establishing a network of cooperating institutions that may be interested in offering places on courses or research



opportunities. Members of the network to date include the National Oceanography Centre (United Kingdom); the National Institute of Ocean Technology (India); the French Institute for the Exploitation of the Sea (IFREMER); the Federal Institute for Geosciences and Natural Resources (Germany); the National Institute of Oceanography (India); the Natural History Museum (United Kingdom); Duke University (USA); and InterRidge, an international, non-profit programme promoting interdisciplinary studies of oceanic spreading centres.

- 47 To date, a total of \$254,312 has been disbursed by the Fund through six awards for activities that promote capacity building. A total of 16 scientists from developing countries have been recipients of financial support, with the names and nationalities of a further seven yet to be finalized at the time of preparing the present report. The recipients to date are from Argentina, Bangladesh, China, Egypt, Guyana, India, Indonesia, Mauritania, Nigeria, Papua New Guinea, the Philippines, Sri Lanka, Thailand and Viet Nam. Each of the recipients has been able to participate in international training programmes or in research projects which would not have been possible without the assistance of the Endowment Fund.



FUTURE ACTIVITIES OF THE INTERNATIONAL SEABED AUTHORITY

48. The future activities of the Authority will comprise:

1. Monitoring the eight or possibly ten contracts for polymetallic nodule exploration in the Area.
2. Monitoring the two contracts for polymetallic sulphides exploration.
3. Developing regulations for prospecting and exploration for cobalt-rich ferromanganese crusts.
4. Developing environmental guidelines to protect the flora and fauna in the different mineral provinces of the Area.
5. Developing regulations for deep seabed polymetallic nodule exploitation.
6. The further development of the Central Data Repository.



7. Continuation of resource assessments of polymetallic nodules in reserved areas .
8. Establishment of the geological model of polymetallic nodules in the Central Indian Ocean Basin
9. Promotion of marine scientific research in the deep seabed (including ongoing collaborations with CenSeam to better understand the flora and fauna in ferromanganese bearing seamount mineral provinces, and InterRidge with regard to polymetallic sulphides deposits.)
10. Promotion of marine scientific research in the Area with regard to prospecting for minerals in the South Atlantic Ocean with Brazil and the States bordering the ocean.
11. Establishment of an internship and outreach programme, and
12. Developing economic models for polymetallic nodule mining in the Area.



Distinguished guests and participants;
Thank you for your attention to this presentation.

