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Report of the Secretary-General of the International Seabed Authority under article 166, paragraph 4, of the United Nations Convention on the Law of the Sea

I. Introduction

1. The present report of the Secretary-General of the International Seabed Authority is submitted to the Assembly of the Authority under article 166, paragraph 4, of the 1982 United Nations Convention on the Law of the Sea. It provides the usual account of the work of the Authority over the past 10 months as well as an overview of the present status of and prospects for deep seabed mining.

II. Membership of the Authority

2. The Authority is the organization through which States parties to the Convention, in accordance with part XI of the Convention, organize and control activities in the Area, particularly with a view to administering the resources of the Area. This is to be done in accordance with the regime for deep seabed mining established in part XI and other related provisions, of the Convention and in the Agreement relating to the implementation of part XI of the United Nations Convention on the Law of the Sea adopted by the General Assembly of the United Nations under the terms of its resolution 48/263 of 28 July 1994. As provided by resolution 48/263 and the Agreement itself, the provisions of the Agreement and part XI of the Convention are to be interpreted and applied together as a single instrument. In the event of any inconsistency between the Agreement and part XI, the provisions of the Agreement prevail. In addition, the Authority has a number of other, specific, responsibilities, such as the responsibility to distribute to States parties to the Convention payments or contributions in kind derived from exploitation of the resources of the continental shelf beyond 200 nautical miles pursuant to article 82, paragraph 4, of the Convention.

3. In accordance with article 156, paragraph 2, of the Convention, all States parties to the Convention are ipso facto members of the Authority. As at 31 March

2008, there were 155 members of the Authority (154 States and the European Community).

4. As at the same date, there were 131 parties to the 1994 Agreement; Brazil and Uruguay have acceded to the Agreement since the thirteenth session of the Authority. Twenty-four members of the Authority that became parties to the Convention prior to the adoption of the 1994 Agreement have not yet become parties to the 1994 Agreement. These are: Angola, Antigua and Barbuda, Bahrain, Bosnia and Herzegovina, Cape Verde, Comoros, Democratic Republic of the Congo, Djibouti, Dominica, Egypt, Gambia, Ghana, Guinea-Bissau, Guyana, Iraq, Mali, Marshall Islands, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Somalia, Sudan and Yemen.

5. Although members of the Authority which are not parties to the 1994 Agreement necessarily participate in the work of the Authority under arrangements based on the Agreement, becoming a party to the Agreement would remove an incongruity that currently exists for those States. For this reason, each year since 1998, at the request of the Assembly, the Secretary-General has circulated a note verbale to all members in this position urging them to consider becoming parties to the 1994 Agreement. In the last such note, circulated on 22 January 2008, attention was drawn to the relevant paragraphs of the report of the Secretary-General for 2007 (ISBA/13/A/2) and to paragraph 3 of United Nations General Assembly resolution 62/215 calling upon all States to become parties to both the Convention and the Agreement in order to achieve the goal of universal participation in the two instruments. The Secretary-General encourages all those members of the Authority that are not yet parties to the 1994 Agreement to become parties at the earliest possible opportunity.

6. A recurrent problem for the Authority has been poor attendance at the meetings of the Assembly. The Assembly is considered to be the supreme organ of the Authority, to which the other principal organs are accountable as specifically provided for by the Convention. In particular, the debate on the annual report of the Secretary-General provides an important opportunity for general statements about the Authority's work. The Assembly also adopts the budget of the Authority and elects the Secretary-General, the members of the Council and the members of the Finance Committee.

7. This matter was discussed at the thirteenth session of the Authority, when an appeal by the Secretary-General for delegations to impress upon their colleagues the need to participate in meetings of the Authority received warm support. It was further pointed out that the absence of a quorum at meetings of the Assembly may have an adverse effect on decision-making within the Authority. The Secretary-General was requested to explore the possibility of changing the dates of the annual session of the Authority in order to encourage more members to attend. As a result, it will be noted that the dates for the fourteenth session have been brought forward to May, rather than July. The usual information note informing members of the issues to be discussed during the session was released as early as February 2008.

8. The matter of attendance at meetings of the Authority was also taken up during the debate on ocean affairs and the law of the sea held during the sixty-second session of the General Assembly. In its resolution 62/215, the General Assembly urged all States parties to the Convention to attend the sessions of the Authority and called upon the Authority to continue to pursue all options, including making

concrete recommendations on the issue of dates, in order to improve attendance in Kingston and to ensure global participation. In his statement to the General Assembly, the Secretary-General of the Authority reminded members of the Authority that it is their duty to attend and participate in the work of the Authority and urged all members to do their part in ensuring that they are represented at the fourteenth session, especially as there would be a number of important decisions to take during the session.

III. Permanent missions to the Authority

9. As at 31 March 2008, the following 22 States and the European Community had established permanent missions to the Authority: Argentina, Belgium, Brazil, Cameroon, Chile, China, Costa Rica, Cuba, France, Gabon, Germany, Haiti, Honduras, Italy, Jamaica, Mexico, Nigeria, the Republic of Korea, Saint Kitts and Nevis, South Africa, Spain and Trinidad and Tobago.

IV. Previous session of the Authority

10. The thirteenth session of the Authority was held from 9 to 20 July 2007. Olufolajimi Modupe Akintola (Nigeria) was elected President of the Assembly for the thirteenth session. Raymond Wolfe (Jamaica) was elected President of the Council.

11. The work of the Assembly during the thirteenth session included a debate on the annual report of the Secretary-General, consideration and adoption of the report of the Finance Committee, and adoption of the terms of reference, guidelines and procedures for the International Seabed Authority Endowment Fund for Marine Scientific Research in the Area (ISBA/13/A/6).

12. The main work of the Council during the thirteenth session was to consider the revised draft regulations on prospecting and exploration for polymetallic sulphides in the Area. During the session, the Council completed a detailed reading of regulations 1 to 43 and agreed on revisions to some of the regulations. It was agreed that the pending draft regulations and annexes I to IV would be taken up by the Council in 2008 (see section XIII below).

13. The Council also considered the question of the future size and composition of the Legal and Technical Commission and the process for future elections. While it was unable to reach a consensus on the future size of the Commission, the Council agreed that there was a need to streamline the procedure for future elections in order to avoid the difficulties that the Council had encountered in the past elections of the Commission. In this regard, the Council agreed on a procedure for the nomination of candidates for future elections and also requested the Secretary-General to prepare a report for consideration by the Council in 2010 on the functioning of the Commission, with a view to the Council determining in 2010 the number of members of the Commission to be elected in 2011. The decision of the Council is contained in document ISBA/13/C/6.

14. The Council also took note of the statement of the Secretary-General on the periodic review of the implementation of the plans of work for exploration by the contractors (ISBA/13/C/4) and the Report of the Chairman of the Legal and

Technical Commission on the work of the Commission during the thirteenth session (ISBA/13/C/3).

V. Protocol on Privileges and Immunities of the Authority

15. The Protocol on Privileges and Immunities of the International Seabed Authority entered into force on 31 May 2003. Since the thirteenth session of the Authority, two further members of the Authority (Poland and Finland) have become parties to the Protocol. As at 31 March 2008, the following 25 members of the Authority were parties to the Protocol: Argentina, Austria, Cameroon, Chile, Croatia, Czech Republic, Denmark, Egypt, Finland, Germany, India, Italy, Jamaica, Mauritius, Netherlands, Nigeria, Norway, Oman, Poland, Portugal, Slovakia, Spain, Trinidad and Tobago, United Kingdom of Great Britain and Northern Ireland and Uruguay.

16. The Secretary-General urges other members of the Authority to consider becoming parties to the Protocol which, inter alia, provides essential protection to representatives of members of the Authority who attend meetings of the Authority or who travel to and from those meetings. It also accords to experts on missions for the Authority such privileges and immunities as are necessary for the independent exercise of their functions during the period of their missions and the time spent on journeys in connection with their missions.

VI. Relations with the host country

17. In November 2007, the Secretary-General drew the attention of the host Government to a number of deficiencies relating to the fabric of the headquarters building and to technical problems with the equipment in the Jamaica Conference Centre. These problems were particularly acute during the thirteenth session, when delegations noted frequent breakdowns in the audio systems in the Conference Centre. It was discovered that these problems were attributable to the fact that the existing systems are over 20 years old and, although they have served well for many years, have now become obsolete.

18. Following discussion between the relevant government departments, the Secretary-General was pleased to be advised in March 2008 that the Government of Jamaica has allocated an amount in excess of 420 million Jamaican dollars towards a comprehensive refurbishment of the Conference Centre, including renovation and upgrading of the sound and interpretation systems. It is anticipated that the most urgent renovations will be completed prior to the fourteenth session.

19. The Secretary-General expresses his sincere appreciation to the Government of Jamaica for this expression of commitment to the future of the Conference Centre and the Authority, and also expresses appreciation for the very positive and constructive working relationship that has existed between the secretariat and the host Government over the past year.

VII. Relations with the United Nations and other bodies

20. The Authority continued to maintain its good working relationship with the Department for General Assembly and Conference Management of the United Nations, which, under the Relationship Agreement between the United Nations and the International Seabed Authority provides translation, interpretation and conference services to the Authority. The Authority also maintained a close relationship with the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations and other relevant departments and services of the United Nations.

VIII. Secretariat

21. Changes to the secretariat during the period under review included the recruitment of an Executive Officer (P-5) and a Human Resources Officer (P-3) following open competitions to fill vacancies that had arisen in the approved staffing table. These positions were filled on the basis of updated job descriptions in the light of a review of internal administration conducted in 2006.

22. Pursuant to the staff regulations and rules of the Authority, a Joint Appeals Board was established, composed of a chairman and four members as follows:

Chairman

Michael Wood (appointed by the Secretary-General after consultation with the Staff Committee)

Members appointed by the Secretary-General

Coy Roache
Gritakumar Chitty

Members selected by representatives of the staff

Donald J. Rogers
Gwénäelle Le Gurun

In accordance with staff rule 111.1(c), members shall serve for a period of two years, with effect from 1 March 2008. The Chairman and members of the Joint Appeals Board are considered experts on mission while performing their duties for the Authority. The provisions of article 9 of the Protocol on Privileges and Immunities of the Authority and articles 26(1) (e) and 35 of the Headquarters Agreement between the Authority and the Government of Jamaica would be applicable to them.

IX. Budget and finance

A. Budget

23. For the financial period 2007-2008, the Assembly of the Authority adopted a budget of \$11,782,400. This represented a nominal average increase of 4.46 per cent for each year of the financial period compared with the previous period (2005-2006). However, when inflationary factors are considered, it actually represented a decrease in the budget in real terms.

24. For the financial period 2009-2010, the Secretary-General proposes a budget of \$12,752,400. The budgetary requirements are explained in detail in ISBA/14/A/3-ISBA/14/C/3.

B. Status of contributions

25. In accordance with the Convention and the 1994 Agreement, the administrative expenses of the Authority shall be met by assessed contributions of its members until the Authority has sufficient funds from other sources to meet those expenses. The scale of assessments shall be based on the scale used for the regular budget of the United Nations, adjusted for differences in membership. As at 31 March 2008, 58.6 per cent of the value of contributions to the 2008 budget due from member States and the European Community had been received from 31 per cent of the Authority's membership.

26. Contributions outstanding from member States for prior periods (1998-2007) totalled \$447,952. Notices are regularly sent to member States reminding them of arrears. In accordance with article 184 of the Convention and rule 80 of the rules of procedure of the Assembly, a member of the Authority that is in arrears in the payment of its financial contribution shall have no vote if the amount of its arrears equals or exceeds the amount of the financial contribution due from it for the preceding two years.

27. As at 31 March 2008, 57 members of the Authority were in arrears for a period of two years or more. They were: Argentina, Bahrain, Belarus, Belize, Benin, Bolivia, Burkina Faso, Cape Verde, Comoros, Cook Islands, Côte d'Ivoire, Cuba, Democratic Republic of the Congo, Djibouti, Dominica, Equatorial Guinea, Gambia, Guatemala, Guinea, Guinea-Bissau, Honduras, Iraq, Luxembourg, Maldives, Mali, Marshall Islands, Mauritania, Micronesia (Federated States of), Montenegro, Mozambique, Nauru, Nepal, Niue, Palau, Panama, Papua New Guinea, Paraguay, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Senegal, Serbia, Seychelles, Sierra Leone, Solomon Islands, Somalia, Sudan, Suriname, the former Yugoslav Republic of Macedonia, Togo, Uganda, Ukraine, United Republic of Tanzania, Uruguay, Vanuatu, Zambia and Zimbabwe.

28. Also as at 31 March 2008, the balance of the Working Capital Fund stood at \$438,711.

C. Voluntary trust fund

29. A voluntary trust fund for the participation of members of the Finance Committee and the Legal and Technical Commission from developing countries was established in 2002, following a request by the Assembly to enhance the participation of members from developing countries in those bodies. Prior to the establishment of the fund, attendance at meetings of the two bodies by members from developing countries had been generally poor, ostensibly for financial reasons. That situation has improved since the fund was established. Provisional terms and conditions for the use of the fund were adopted by the Assembly, on the recommendation of the Finance Committee in 2003 and amended in 2004 (see ISBA/9/A/9, para. 24; and ISBA/9/A/5-ISBA/9/C/5).

30. The fund is made up of voluntary contributions from members of the Authority and others. Over the life of the fund, contributions totalling \$85,818 have been received from: Angola (\$300), Brazil (\$10,000), Indonesia (\$1,000), Mexico (\$2,500), Namibia (\$1,300), Nigeria (\$5,000), Norway (\$25,000), Oman (\$10,000), Spain (\$20,018), Trinidad and Tobago (\$10,000), and M. Babangida Aliyu Oon (\$500) and Y. Kazmin (\$200).

31. In 2003, to supplement the voluntary contributions, the Assembly, on the recommendation of the Finance Committee, authorized an advance of \$75,000 to be paid into the fund from the interest from the fund for application fees paid by former registered pioneer investors (see ISBA/9/A/5-ISBA/9/C/5). At the eleventh session, the Assembly, on the recommendation of the Finance Committee, authorized the Secretary-General to advance, to the extent necessary, a further \$60,000 for the operation of the voluntary fund in 2006 from the same source (see ISBA/11/A/8-ISBA/11/C/9). At the twelfth session in 2006, however, in the light of the balance of the fund at that time, the Finance Committee decided not to approve any further advances to the fund for 2007.

32. As at 31 March 2008, the balance of the voluntary fund stood at \$69,495, including accrued interest of \$6,235. The total amount paid out of the fund to date is \$157,557.

D. Endowment Fund for Marine Scientific Research in the Area

33. The International Seabed Authority Endowment Fund for Marine Scientific Research in the Area was established by the Assembly in 2006 (see ISBA/12/A/11). The purpose of the Fund is to promote and encourage the conduct of marine scientific research in the Area for the benefit of mankind as a whole, in particular by supporting the participation of qualified scientists and technical personnel from developing countries in marine scientific research programmes and by providing them with opportunities to participate in international technical and scientific cooperation, including through training, technical assistance and scientific cooperation programmes.

34. In accordance with the decision of the Assembly, the initial capital of the Endowment Fund consisted of the balance remaining as at 18 August 2006 from the application fees paid by the registered pioneer investors, under resolution II of the Third United Nations Conference on the Law of the Sea, to the Preparatory Commission for the International Seabed Authority and for the International Tribunal for the Law of the Sea, pursuant to paragraph 7 (a) of resolution II, together with interest accrued thereon. 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.

35. 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 (see ISBA/13/A/6, annex). They provide detailed guidance on the process for making applications for assistance from the Fund, the information that must be submitted, the type of activities that may be 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 is to benefit scientists from developing countries. There is to be an advisory panel appointed by the Secretary-General to evaluate applications for assistance from the Fund. The panel shall be composed of: (a) permanent representatives to the Authority; (b) representatives of educational institutions or organizations of an international character; (c) individuals closely associated with the work of the Authority. The members of the panel are to be appointed with due regard to equitable geographic representation. In accordance with the guidelines, the first appointments to the panel were made by the Secretary-General in March 2008. The names of the persons appointed are contained in the annex to the present report. It is expected that the advisory panel will hold its first meeting in conjunction with the fourteenth session of the Authority.

36. 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 shall include arrangements for the reduction or waiver of fees for training. Since February 2008, 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 include the issue of a press release and related promotional materials, the launch of a specially designed area on the Authority's website at <http://www.isa.org.jm/en/efund>, and the establishment of a network of cooperating institutions that may be interested in offering places on courses or research opportunities. In addition, the secretariat organized an informal round table meeting at United Nations Headquarters in New York on 30 April 2008 to introduce the Fund to a wide range of potential contributors, partner institutions and beneficiaries.

37. As at March 2008, the following institutions had indicated their interest in cooperating with the Authority in relation to the Fund: National Oceanography Centre (United Kingdom), National Institute of Ocean Technology (India), French Research Institute for the Exploitation of the Sea (IFREMER), Federal Institute for Geosciences and Natural Resources (Germany), National Institute of Oceanography (India), Natural History Museum (United Kingdom) and InterRidge.

38. The Secretary-General encourages other Governments and institutions to participate in the Authority's network and also invites members of the Authority, other States, relevant international organizations, academic, scientific and technical institutions, philanthropic organizations, corporations and private persons to contribute to the Fund.

X. Library, publications and website

A. Library

39. The library manages the Authority's specialized collection of reference and research materials focusing on matters relating to the law of the sea, ocean affairs and deep seabed mining. The library serves the needs of members of the Authority, permanent missions and researchers interested in information on the law of the sea and ocean affairs, as well as providing essential reference and research assistance to

support the work of the staff of the secretariat. In addition, the library is responsible for the archiving and distribution of the official documents of the Authority and assists with the publications programme.

40. The library facilities include a reading room with access to the collection for reference purposes only and computer terminals for e-mail and Internet access. The specialized research capability of the existing collection continues to improve through an acquisitions programme that is aimed at building upon and strengthening the library's comprehensive collection of reference materials. An inventory was conducted to monitor the collection and to ensure that items corresponded with the automated catalogue. During the reporting period, approximately 140 books, CD-ROMs and over 450 journal issues were acquired. A number of donations were received from institutions and libraries, including from the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations, the International Tribunal for the Law of the Sea, the United Nations Educational and Scientific Organization, the United Nations Environment Programme, the Food and Agriculture Organization of the United Nations, and the United States Institute of Peace. To enable Internet browsing of the library catalogue, a web interface has been developed to allow users to perform searches. The interface is accessible from both the Authority's main website and from the central data repository.

41. During the period under review, the library continued to respond to an increasing number of requests for copies of the publications and documents of the Authority. The library continued to offer guidance on sources of information relevant to the law of the sea and deep seabed mining, and responded to requests from institutions, non-governmental organizations, academics, government departments and the general public for information on a number of subject areas related to the activities of the Authority, including, the development of technologies for deep seabed mining; geographic data on the Caribbean Sea; bilateral and multilateral maritime delimitation agreements of selected countries; deep seabed mining and the protection of the marine environment; forecasting seabed mining during the Preparatory Commission and the exploitation of marine resources. Most requests are received electronically. The requests came from individuals and a variety of academic and research institutions, including the United States Department of Commerce, General Counsel for International Law, National Oceanographic and Atmospheric Administration, United States; Center for Leadership in Global Diplomacy, United States; Virani Science College, India; Nautilus Minerals, Australia; the permanent mission of China to the Authority; the National Environment and Planning Agency of Jamaica; Ministry of Foreign Affairs of Jamaica; the Permanent Mission of Jamaica to the United Nations; and the Department of Government of the University of the West Indies.

B. Publications

42. The regular publications of the Authority include an annual compendium of selected decisions and documents of the Authority (published in English, French and Spanish) and a handbook containing details, inter alia, of the membership of the Assembly and the Council, the names and addresses of permanent representatives and the names of the members of the Legal and Technical Commission and the Finance Committee.

43. In addition, the Authority also publishes the proceedings of its workshops and a range of specialized legal and technical reports. The most recent publications include the proceedings of the 2004 workshop on the establishment of environmental baselines and monitoring programmes for exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts (published in 2007), the proceedings of the 2003 workshop on the establishment of a geological model of polymetallic nodule resources in the Clarion-Clipperton fracture zone of the equatorial North Pacific Ocean, and the final report of the Kaplan project (see *Biodiversity, Species Ranges and Gene Flow in the Abyssal Pacific Nodule Province: Predicting and Managing the Impacts of Deep Seabed Mining*, ISA Technical Study, No. 3 (2008)); for a complete list of all the current publications issued by the Authority, see www.isa.org.jm.

C. Website

44. The Authority's website was fully redesigned in 2007 to provide greater functionality and ease of access to users. The website contains essential information on the activities of the Authority, primarily in English, French and Spanish. The texts of all the official documents and decisions of the organs of the Authority are available in the six official languages of the United Nations. Press releases are available in English and French. The website provides access to specialized databases, such as the central data repository, the Internet-based geographical information system (GIS), the bibliographical database and the library catalogue. The Authority's workshop proceedings, technical reports and joint publications are also published electronically in downloadable format.

45. The Internet-based graphical interface to the repository, which allows the interactive production of various maps, has been greatly enhanced and upgraded to include the latest biological database. It also allows users to connect to other spatial databases over the Internet and pull down their content for analysis in the Authority's GIS system.

46. Security and infrastructure enhancements over the past year include the upgrade of the firewall and the ongoing implementation of a disaster recovery programme. The objectives of the disaster recovery programme are to protect the data of the Authority and to preserve the operational capacity of the secretariat to utilize its information technology capabilities in the event of a natural disaster. As a further step in the infrastructure enhancement, work is under way to maximize the availability of Internet access by providing an automatic failover in the event of a single link failure and load balancing to improve the connection speed.

XI. Substantive work programme of the Authority

47. The substantive work programme of the Authority for the period 2008-2010 was presented to the Assembly at the thirteenth session in 2007 (see ISBA/13/A/2). The programme of work, which was approved by the Assembly, continues to focus primarily on the scientific and technical work necessary to carry out the functions of the Authority under the Convention and the 1994 Agreement and in particular aims to promote a better understanding of the potential environmental impact of deep seabed mining.

48. The substantive functions of the Authority are set out in the Convention and in the 1994 Agreement. Pending the approval of the first plan of work for exploitation, the Authority is to concentrate on the 11 areas of work listed in paragraph 5 of section 1 of the annex to the 1994 Agreement. Given the limited resources available to the Authority, the relative priority to be given to each of those areas of work is dependent on the pace of development of commercial interest in deep seabed mining. The programme of work for the period 2008-2010 is based on the implementation of subparagraphs (c), (d), (f), (g), (h), (i) and (j) of paragraph 5 of section 1 of the 1994 Agreement, in particular the following main areas:

(a) The supervisory functions of the Authority with respect to existing contracts for exploration for polymetallic nodules;

(b) Monitoring of trends and developments relating to deep seabed mining activities, including world metal market conditions and metal prices, trends and prospects;

(c) The development of an appropriate regulatory framework for the future development of the mineral resources of the Area, particularly hydrothermal polymetallic sulphides and cobalt-rich ferromanganese crusts, including standards for the protection and preservation of the marine environment during their development;

(d) The promotion and encouragement of marine scientific research in the Area through, inter alia, an ongoing programme of technical workshops, the dissemination of the results of such research and collaboration with contractors and the international scientific community;

(e) Information-gathering and the establishment and development of unique databases of scientific and technical information with a view to obtaining a better understanding of the deep ocean environment;

(f) Ongoing assessment of available data relating to prospecting and exploration for polymetallic nodules in the Clarion-Clipperton zone.

49. Progress and developments in relation to each aspect of the work programme is described in sections XII to XVI below.

XII. Status of contracts for exploration

50. There are presently eight contractors for exploration for polymetallic nodules in the Area. These are Yuzhmorgeologiya (Russian Federation), Interoceanmetal Joint Organization (IOM) (Bulgaria, Cuba, Slovakia, Czech Republic, Poland and Russian Federation), the Government of the Republic of Korea, China Ocean Mineral Resources Research and Development Association (COMRA) (China), Deep Ocean Resources Development Company (DORD) (Japan), IFREMER (France), the Government of India and the Federal Institute for Geosciences and Natural Resources of the Federal Republic of Germany.

51. Each contractor is under an obligation to submit an annual activity report. The objective of the reporting requirement is to establish a mechanism whereby the Secretary-General and the Legal and Technical Commission are properly informed of the contractors' activities so as to be able to exercise their functions under the Convention, particularly those relating to the protection of the marine environment

from the harmful effects of activities in the Area. To facilitate reporting, in 2002 the Commission recommended a format and structure for annual reports (see ISBA/8/LTC/2, annex), including a standardized contents list (general, exploration work, mining tests and mining technology, training, environmental monitoring and assessment, financial statement, proposed adjustment to the programme of work, conclusions and recommendations) which is based on the standard clauses set out in annex 4 to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (see ISBA/6/A/18, annex). Additional assistance for contractors in preparing their annual reports appears in the recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for polymetallic nodules in the Area issued by the Commission in 2001 pursuant to regulation 38 (ISBA/7/LTC/1/Rev.1).

52. Although the contents of the annual reports are confidential, any relevant findings and recommendations of the Commission on the annual reports are presented in a report to the Secretary-General including, as appropriate, requests for clarification or further information. The Secretary-General conveys any such requests to the contractors by letter. Comments of a general nature with respect to the evaluation of the annual reports of the contractors may also be included in the report on the work of the Commission that the Chairman of the Commission presents to the Council.

53. Annual reports are due on 31 March of each year. In light of the fact that the fourteenth session will take place in May, the Secretary-General wrote to all contractors in December 2007, urging them to submit their annual reports as early as possible in order that they would be available for consideration by the Legal and Technical Commission at the fourteenth session. As at 31 March 2008, annual reports had been received from DORD, Republic of Korea, Yuzhmorgeologiya, IOM and COMRA.

A. Periodic review of implementation of plans of work for exploration

54. The regulations provide for periodic review of the implementation of plans of work for exploration at intervals of five years. This is to be achieved through consultations between contractors and the Secretary-General. As part of the review, the contractor shall indicate its programme of activities for the following five years, making such adjustments to its previous programme of activities as are necessary. The Secretary-General may request the contractor to submit such additional data and information as may be necessary for the purposes of the review and is also required to report on the review to the Commission and the Council.

55. For six out of the seven former registered pioneer investors, 2006 marked the end of the first five-year programme of work since the contracts were issued. For India, in respect of which the contract was issued in 2002, the five-year period ended in 2007. As at July 2007, comprehensive five-year reports of the work carried out, the results obtained and the expenditure incurred during the first five-year programme were submitted by the Government of India, DORD, the Republic of Korea, IOM, Yuzhmorgeologiya, IFREMER and COMRA. Each of these contractors also submitted a revised programme of activities covering the next five years of the contract. In addition, between August 2006 and May 2007, the Secretary-General

met with DORD, the Republic of Korea, IOM, COMRA and the Government of India to review their proposed programmes of activities for the next five years.

56. During the thirteenth session, the Secretary-General reported orally to the Legal and Technical Commission on the periodic review of the implementation of the plans of work for exploration. He also presented a report to the Council that took into account the discussion on the same topic that had taken place in the Legal and Technical Commission (see ISBA/13/C/4). In his report, the Secretary-General noted that, in general, for all contractors, the pace of exploration work remained very slow. Although all of the contractors had adhered to the programmes of work as originally indicated, the focus of this work was on preparatory work and evaluation of data already collected during the pioneer phase. For example, one contractor had spent the entire five-year period simply evaluating the feasibility of continued investment in deep seabed mining. Another contractor concentrated solely on the analysis of environmental data and carried out no geological exploration work. There was very little evidence of progress in the development of mining and processing technology, although some contractors had carried out preliminary tests of collecting systems and indicated that they intended to work on technology development in the future.

57. Notwithstanding the progress that had been made in terms of compliance, the Secretary-General noted some matters of concern. For example, it was evident that there had been very large disparities in the amounts being spent on exploration by each contractor. In some cases, the expenditure reported was greatly in excess of the expenditure proposed in the original programme of activities. It was not always clear why this should be the case. Both the Secretary-General and the Legal and Technical Commission emphasized the need for reported expenditure on exploration to be properly itemized and reported and to relate only to the actual and direct costs of exploration activities in relation to the specific contract areas. This is a matter which will become particularly important in the future if, in the context of regulations governing exploitation, contractors seek to offset their development costs against profits or royalties due to the Authority. Given that all the existing contractors have enjoyed very long periods for exploration, dating back in most cases to the 1980s, it will be essential to ensure the financial terms for exploitation contracts are such that allowances for expenditures incurred during exploration are strictly limited to the actual and direct costs of exploration carried out with a view to commercial exploitation.

58. With regard to the programmes of activities for the second five-year period — up to 2011 — the Secretary-General noted that all of the seven contractors concerned essentially plan to continue to work at the same pace. There are no significant changes to the types of activities that are proposed, even though four contractors have identified first-generation mine sites. There are, for example, no proposals to carry out research on the physical problems of recovering nodules from the ocean floor and transferring them to transport ships or relating to alternative equipment and methods that contractors may ultimately use in commercial mining. There are no proposals to ascertain the cost of mining nodules from the seabed and processing them into metals of commercial interest, so that improvements in the metal markets can provide an indication of the imminence of future mining. For most contractors, the emphasis remains on the analysis of existing data and the opportunistic collection of environmental baseline data through scientific research cruises.

59. Although this situation may be considered reasonable, given the technological and economic conditions relating to seabed mining that prevailed until recently, it must also be recalled that the resources of the deep seabed are the common heritage of mankind and that the fundamental objective of the regime established by the Convention and the Agreement is to encourage the development of those resources for the benefit of mankind as a whole. That is why the Agreement provides for a time-limit of 15 years, during which time contractors have exclusive rights to explore the areas allocated to them. The expectation is that, after 15 years, in the absence of special circumstances, contractors will either move to the exploitation phase or surrender the areas allocated to them. The current leisurely pace of activities, however, would suggest that the contractors will basically continue to sit on the sites and seek multiple extensions of their contract if they are to retain the allocated areas. Prolonged blocking of access to the resources is neither an efficient nor equitable way of administering the resources, which belong to mankind as a whole.

60. Immediately following the thirteenth session, in July 2007, the Secretary-General wrote to all seven contractors concerned formally accepting their proposed programme of activities for the second five-year period and proposing a revision to the contract, by means of an exchange of letters, in order to reflect the new programme of activities. As at 31 March 2008, the proposed revisions had been accepted by DORD (received 16 August 2007), the Government of India (received 3 December 2007), COMRA (received 18 September 2007), IOM (received 18 October 2007) and IFREMER (received 11 March 2008). Acceptances from the Government of the Republic of Korea and Yuzhmorgeologiya have yet to be received.

B. Training programme of the Federal Republic of Germany

61. Under its contract with the Authority, signed in July 2006, and in accordance with the standard clauses set out in the regulations, the Federal Institute for Geosciences and Natural Resources of the Federal Republic of Germany is required to propose a training programme as part of its programme of work. Under the original programme of activities, two trainees were to be selected to participate in a research cruise in September 2006. However, due to the delay in signing the contract, there was insufficient time to conduct the selection process in time for that date. In January 2008, the Federal Institute for Geosciences and Natural Resources proposed a revised training programme, offering places to four trainees commencing in October 2008. Also in January 2008, the Secretary-General circulated a note verbale to all members of the Authority soliciting nominations of candidates for the German training programme. Such nominations were to be received by 30 April 2008.

62. Information on the training programme, and the names and curricula vitae of all candidates nominated by members of the Authority, will be submitted to the Legal and Technical Commission at the fourteenth session in order to enable the Commission to make a selection of the candidates for training in consultation with the contractor.

XIII. Regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area

63. The Assembly will recall that in 1998 the delegation of the Russian Federation formally requested the Authority to develop regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts. A workshop on these resources was held in June 2000, and in 2001 a document was placed before the Council (ISBA/7/C/2) summarizing the discussion at the workshop and indicating the considerations to be borne in mind in elaborating regulations. After extensive discussions, the Council decided to ask the Legal and Technical Commission to prepare draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich crusts. The Legal and Technical Commission, with assistance from the secretariat, prepared a first draft in 2003 and 2004, which was subsequently considered by the Council during the eleventh session in 2005.

64. Following a first reading of the draft, the Council asked the secretariat to clarify certain points, and the secretariat submitted two technical information papers to the Council in 2006 (see ISBA/12/C/2 and ISBA/12/C/3). At its 106th meeting, on 8 August 2006, the Council was provided with an oral briefing on the technical issues dealt with in those papers. The briefing was given by the secretariat with the assistance of two technical experts, James Hein and Charles Morgan. In addition, Mr. Morgan presented to the Council a report on the preliminary outcomes of a workshop on the technical and economic considerations relating to mining of polymetallic sulphides and cobalt-rich crusts, held from 31 July to 4 August 2006. At the request of the Council, a summary of the workshop recommendations was issued in the form of a document (ISBA/12/C/7). The delegation of the Russian Federation also submitted a draft proposal relating to the draft regulations (ISBA/12/C/6).

65. Following extensive discussion of the way in which the Council would address the outstanding technical issues with respect to the draft regulations, it was agreed that the secretariat should attempt to revise the draft regulations further in the light of the outcomes of the 2006 technical workshop and the presentations, proposals and discussions in the Council during the twelfth session. In revising the draft, it was agreed that separate sets of regulations would be prepared for polymetallic sulphides and cobalt-rich ferromanganese crusts. In considering the revised draft regulations, the Council recommended that priority should be given to the regulations relating to polymetallic sulphides.

66. In accordance with the Council's request, the secretariat prepared a set of draft sulphides regulations in October 2006. The draft was circulated to outgoing members of the Legal and Technical Commission, who were asked to submit their comments by 31 December 2006, which marked the end of their term of office. Comments were received from three members of the Commission. In the light of those comments, the secretariat prepared an explanatory note, annexing the revised draft sulphides regulations, for consideration by the Council in 2007 (ISBA/13/C/WP.1). Also in accordance with the Council's request, the secretariat prepared revised draft regulations relating to cobalt-rich ferromanganese crusts for further consideration by the Legal and Technical Commission (ISBA/13/LTC/WP.1).

67. During the thirteenth session, following a general debate on the revised draft regulations on prospecting and exploration for polymetallic sulphides and a briefing by an expert, Mark Hannington, on global exploration models for polymetallic sulphide deposits in the Area, the Council completed a detailed reading of regulations 1 to 43 and agreed on revisions to some of those regulations. An informal text of the agreed revisions (ISBA/13/C/CRP.1) was provided to all delegations at the conclusion of the session. The Council further agreed that the pending draft regulations (regulations 1(3), 12, 16, 19(2)(a), 21, 24(2), 27, 28(2), 33(2), 35, 36(2) and (3) and 38) would be taken up by the Council in 2008, together with annexes I to IV.

68. Also during the thirteenth session, the Legal and Technical Commission began consideration of the draft regulations relating to cobalt-rich ferromanganese crusts prepared by the secretariat. The Commission focused its consideration on two sensitive issues: the size of the area to be allocated to exploration and the progressive fee system, but considered that the background information available to date was not sufficient to provide a recommendation to the Council on any given system for site allocation for prospecting and exploration. It agreed to continue its work during the fourteenth session.

69. To assist the Council in its deliberations during the fourteenth session, the secretariat has prepared an additional document as a guide to the key outstanding issues with respect to the draft regulations (ISBA/14/C/4).

XIV. Promotion and encouragement of marine scientific research in the Area

70. Under articles 143 and 145 of the Convention, 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 when available. It also has a duty to ensure effective protection of the marine environment from harmful effects which may arise from activities in the Area. A key factor for the Authority is that, although a significant amount of basic and applied research has been done in the past or is still in progress, it is broadly accepted that the current level of knowledge and understanding of deep-sea ecology is not yet sufficient to allow conclusive risk assessment of the effects of large-scale commercial seabed mining, as opposed to exploration. In order to be able in future to manage the impact of mineral development in the Area in such a way as to prevent harmful effects to the marine environment, it will be essential for the Authority to have better knowledge of the state and vulnerability of the marine environment in mineral-bearing provinces. This includes, *inter alia*, knowledge of baseline conditions in these areas, the natural variability of these baseline conditions and the relationship with impacts related to mining.

71. The most immediate and practical way in which the Authority has begun to implement its responsibilities under the Convention and to fulfil its various mandates under paragraph 5 of section 1 of the annex to the 1994 Agreement, particularly under subparagraphs (f) to (j), has been the establishment of a series of expert workshops, seminars and meetings. There has also developed a practice of arranging technical briefings for the representatives of members of the Authority present in Kingston on matters relevant to the work of the Council and the

Assembly. For example, there was a one-day seminar by invited experts on the status and prospects for polymetallic sulphides and cobalt crusts during the eighth session in 2002. A similar briefing session took place at the twelfth session in 2006, primarily designed to help the Council better address the question of the size of areas to be allocated for exploration for polymetallic sulphides and cobalt crusts, as well as in 2007, when an expert was invited to brief the Council on global exploration models for polymetallic sulphide deposits in the Area. Such briefings enable delegates to gain greater understanding of highly technical matters that are important for the work of the Authority, and are much appreciated.

72. In its technical workshops, the Authority has focused on obtaining a better understanding of the mineral resources to be found in the international seabed area and the environment in which they are found in order to better prepare it to manage the impact of exploration and mining on the environment. At all of the workshops, the need for cooperation between scientists and coordination of their efforts has been raised repeatedly; hence the second major element in the Authority's efforts to promote marine scientific research has been to act as a catalyst for international collaboration in projects which will help to manage the impact of deep seabed mining and related activities. The outcomes of these workshops have also been submitted to the Legal and Technical Commission to assist it in its work.

A. Technical workshops

73. The objective of the technical workshops convened by the Authority is to obtain the views of recognized experts in the protection of the marine environment and other specific subjects under consideration and to obtain the most recent marine scientific research results pertinent to the subject matter. Since 1998, the Authority has convened a total of 10 international workshops on specific issues related to deep seabed mining, with participation by internationally recognized scientists, experts, researchers and members of the Legal and Technical Commission, as well as representatives of contractors, the offshore mining industry and member States.

74. In order to disseminate the results as broadly as possible, the proceedings of the Authority's workshops are published in book format and on the Authority's website. They are increasingly recognized by the international scientific and research community as important and authoritative contributions to the specialized scientific literature on deep seabed mining.

75. The most recent workshop took place in February 2008 in Chennai, India, at the National Institute for Ocean Technology. The objective of the workshop, which was organized in cooperation with the Ministry of Earth Sciences of the Government of India, was to develop a preliminary cost model for a deep seabed polymetallic nodule mining and processing venture.

76. There were 48 participants at the workshop, including representatives of six of the eight current exploration contractors with the Authority (COMRA; Government of India; Federal Institute of Geosciences and Natural Resources of Germany; Republic of Korea; IOM; and Yuzhmorgeologiya). Each of the contractors presented a paper describing, inter alia, the status of their efforts to develop a cost-effective configuration of technology for future mining and processing of nodules into copper, nickel, cobalt and manganese. Contractors were also requested to provide estimates of production costs based on their selected configurations and production

scales, and to identify those areas of activity where collaboration could enhance the viability of their ventures.

77. Other presentations reviewed analyses of mining technologies developed in the 1970s and 1980s, project economics and cost models that had been developed for deep seabed mining in the 1980s, possible applications of space technologies to deep seabed mining, the status of lift systems for polymetallic nodule mining, advances in nickel laterites processing and their possible application to processing of polymetallic nodules, and advances in riser technology for oil and gas exploitation and their possible application to nodule mining.

78. Following the presentations, three working groups were convened to consider specific aspects of the model, namely mining technology, processing technology and the economics for a model mining venture. The first working group developed capital expenditure and operating expenditure estimates for polymetallic nodule mining ventures that would recover 1.5 million and 1.2 million wet tons of nodules a year from a site approximately 6,000 nautical miles from a land-based processing facility. The second working group developed similar estimates for a nodule processing plant based on an annual capacity of 1.5 million tons, producing nickel, copper, cobalt and manganese. The third working group reviewed existing models of first generation polymetallic nodule mining systems and evaluated current trends in metal prices, taking into account the increasing demand for nickel and the other metals in nodules in China, India and the Russian Federation. As a result of the group's work, 12 alternative scenarios were developed, with internal rates of return ranging from a low of 14.9 per cent to a high of 37.8 per cent.

79. One of the key conclusions reached by the workshop was that metal prices, particularly nickel prices, are a major factor in the profitability and attractiveness of investments in deep seabed polymetallic nodule mining ventures. The group also noted that the industrialization of large developing countries such as China and India and the reindustrialization of the Russian Federation will drive demand upwards for decades to come. Noting that there are no large land-based deposits of nickel sulphides remaining to be developed, the workshop emphasized that oxide ores (laterites and polymetallic nodules) are the future source of nickel to meet demand.

80. A more detailed summary technical report on the outcomes of the workshop and the work of the working groups will be provided to the Council. In addition, as with the other workshops convened by the Authority, the proceedings of the workshop will be published in due course.

81. As part of the work programme for the period 2008-2010, it is proposed to convene two further international workshops in 2009 and 2010. The objective of the first workshop, scheduled for 2009, will be to review the geological model of polymetallic nodule deposits in the Clarion-Clipperton zone. The objective of the second workshop, which will be convened in 2010, will be to ascertain the modalities for scientific collaboration in research on cobalt-rich ferromanganese crusts deposits in the Area with a view to addressing the standardization requirements for the environmental data required for mining.

B. Seminars

82. In March 2007, the Authority convened for the first time a seminar on the mineral resources of the Area in Manado, Indonesia. The seminar was attended by over 110 participants drawn from different organizations concerned with ocean and maritime affairs in Indonesia. The seminar heard presentations on polymetallic nodules, polymetallic sulphides, gas hydrates, offshore oil and gas, and other offshore resources in Indonesia. The speakers included experts from India, Australia, China, Canada, Germany and Indonesia. It was proposed to hold a similar seminar in Brazil in 2008. Regrettably, owing to unforeseen circumstances, this seminar will not take place. However, the Government of the Federal Republic of Nigeria has agreed to host a seminar later in 2008 for members of the Authority in the West and Central African region.

83. In light of the positive reaction to the Indonesia seminar, it is proposed to convene two further seminars in 2009 and 2010. The purpose of the seminars is to inform government officials, marine policymakers and scientists at national and regional institutions of the work of the Authority and to promote the participation of scientists from institutions in developing countries in marine scientific research being undertaken in the Area by international research organizations.

C. International cooperation in marine scientific research

84. Scientific research into the deep-sea environment is essential, but it is also extremely expensive and beyond the capacity of many individual States. From the outset, the Authority has recognized that the most effective means of gaining better knowledge of the deep ocean environment is to encourage cooperation among States, national scientific institutions and contractors in areas of environmental study and research. Thus, one of the core recommendations of the Authority's 1998 workshop in Sanya, China, was for the Authority to work with the international scientific community and contractors in order to identify critical issues suitable for international collaboration. Such common studies would encourage cooperation and economy and would be cost-effective for all concerned. This was followed up in 2002 with a workshop specifically aimed at identifying the prospects for international collaboration in marine scientific research. That workshop led to the development of the Kaplan project (described below) as well as efforts to establish other avenues for international collaboration.

1. The Kaplan project

85. To date, the most successful example of a collaborative project between a group of international scientists and institutions and the Authority is the Kaplan project. This project, which was funded mainly by the J. M. Kaplan Fund with additional contributions from the Authority, was initiated in 2002 and concluded in 2007. The aim of the project was to assess levels of biodiversity, species range and gene flow in abyssal nodule provinces. A preliminary summary of the findings from the project was provided in the annual report of the Secretary-General for 2007 (ISBA/13/A/2, paras. 68-75) (for the final report of the project, see *Biodiversity, Species Ranges and Gene Flow in the Abyssal Pacific Nodule Province: Predicting and Managing the Impacts of Deep Seabed Mining*, ISA Technical Study, No. 3 (2008)). In addition, an abbreviated summary of the results of the project has been

prepared for the benefit of members of the Authority during the fourteenth session (ISBA/14/C/2). The same document was also made available to the General Assembly Ad Hoc Open-ended Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, which met in New York from 28 April to 2 May 2008.

86. As a direct result of the Kaplan project, in October 2007 a group of scientists, including some of the principal researchers involved in the Kaplan project, met to develop a preliminary set of recommendations for criteria for determining the size and location of a network of representative preservation zones in the Clarion-Clipperton zone. The draft recommendations will be presented to the Legal and Technical Commission and to the Council at the fourteenth session.

2. Global Census of Marine Life on Seamounts collaboration

87. The Census of Marine Life is a global network of researchers in more than 80 nations engaged in a 10-year scientific initiative to assess and explain the diversity, distribution and abundance of life in the oceans. The work of the Census is split into a series of programmes, each of which considers a specific type of environment. The Authority has been actively involved in three of the programmes, namely:

(a) The Census of Diversity of Abyssal Marine Life (CeDAMar), which is concerned with the biodiversity of the abyssal plain (where polymetallic nodules are found);

(b) Biogeography of Deep-Water Chemosynthetic Ecosystems (ChEss), which is concerned with the diversity, distribution and abundance of fauna in relation to chemosynthetic ecosystems such as hydrothermal vents (where polymetallic sulphides are found);

(c) The Global Census of Marine Life on Seamounts (CenSeam), which is concerned with the biodiversity of seamounts (where cobalt-rich crusts are found).

88. During the Authority's 2006 workshop on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna, participants identified the Western Central Pacific Ocean as one of the major ocean regions where large seamounts exist that have sufficiently thick cobalt-rich crusts to be of commercial interest. The area identified as being of greatest interest, and where very few seamounts have been sampled, stretches west from the Hawaiian Islands to the Marianas Trough in a band between approximately 8°N and 24°N. It was suggested that there was scope for collaborative arrangements between the Authority and CenSeam to improve knowledge of the biodiversity of seamounts in this area.

89. Following initial discussions in 2006 and 2007, the Authority entered into a collaborative arrangement with CenSeam in 2008. Under the arrangement, CenSeam will provide the Authority with data on seamount biodiversity in the Western Pacific Ocean, including lists of species associated with cobalt-rich ferromanganese crusts deposits and species associated with seamounts in general. The data to be provided will include, inter alia, a list of species found at crusts and non-crusts locations, a representative image of each species listed, a reference to the original taxonomic description, full sample data (latitude and longitude, seamount name, depth and other appropriate information) and recommendations to input into the formulation of environmental guidelines for future mining contractors. It is expected that the results will be delivered to the Authority by the end of 2008. As noted in paragraph

81, the Authority intends to convene an international workshop in 2010 to review the results of the project and identify and promote future collaborations. It is expected that the results will facilitate efforts by the Authority to establish appropriate databases and enable future contractors for cobalt-rich ferromanganese exploration with the Authority to establish environmental baselines in their contract areas.

3. Future collaborations

90. As a result of the Authority's workshops, and based on the experience gained with the Kaplan project, a number of other potential collaborations have been identified and are in the process of being developed. These include collaboration with ChEss to obtain relevant species lists for fauna associated with polymetallic sulphides deposits in the Area.

XV. Ongoing assessment of available data relating to prospecting and exploration for polymetallic nodules in the Clarion-Clipperton zone

91. The activities currently being undertaken by the Authority in relation to this activity under the work programme for the period 2008-2010 include further development of the Central Data Repository and the establishment of geological models and prospectors' guides for mineral provinces of commercial interest in the Area, in particular polymetallic nodule deposits.

A. Geological model of polymetallic nodule deposits in the Clarion-Clipperton fracture zone

92. The Authority will continue the development of a geological model of polymetallic nodule deposits in the Clarion-Clipperton zone. Progress on Phase I of the project in 2007 and 2008 was delayed due to difficulties experienced by two consultants who were unable to complete their work on time. This in turn meant that some of the scientists contracted to perform consequential work were unable to complete their tasks. The programme has had to be readjusted and work on the project is now expected to be completed during 2008. Expected outputs include: 0.1° grid resource maps, illustrative maps of sediment data, a report on tectonic and volcanic data, a report on the morphology of nodules, a report on organic carbonate and carbon export fluxes, a first draft of the geological model, the associated prospectors' guide and a resource assessment of the metals of commercial interest in polymetallic nodules in the Clarion-Clipperton zone.

93. During the spring of 2009, a workshop will be held at which the results of the work products will be presented to, inter alia, institutions and national geological surveys that provide resource assessments of marine mineral resources in the Area. After the workshop, its results, including the model, the guide and the resource assessment will be published, and as appropriate, uploaded on the Authority's website. It is anticipated that the project will be completed during 2009.

B. Geological model of polymetallic nodule deposits in the Central Indian Ocean basin

94. The Authority will also initiate work on a geological model of polymetallic nodule deposits in the Central Indian Ocean basin. As was the case with the geological model of polymetallic nodules in the Clarion-Clipperton zone, the Authority will call upon the services of scientists with expertise in areas such as sedimentation regimes, the calcium carbonate compensation depth in the basin and its relationship with nodule grade and abundance, biological and environmental parameters of relevance to the model, and the assistance of contractors (especially India, which has been engaged in exploring for polymetallic nodules in this region).

95. The Central Indian Ocean basin project will be initiated during 2009. A meeting of experts will be convened to draw up a detailed programme of work and to identify possible expert team members and interested scientists from contractors to begin to work on developing the model throughout 2009. A midterm meeting of the team members is proposed during 2010 to examine progress and suggest modifications to the work programme. It is proposed to complete the project in 2011. As with the project for the Clarion-Clipperton zone, the main outputs of the project will include a prospectors' guide and a resource assessment of the metals of commercial interest in the polymetallic nodule deposits in the Central Indian Ocean basin.

XVI. Recent developments with respect to deep seabed mining

96. As noted in paragraph 79 of the present report, one of the conclusions reached by the participants in the Chennai workshop was that metal prices, particularly nickel prices, are a major factor in the profitability and attractiveness of investments in deep seabed polymetallic nodule mining. At the present moment, the trend in prices for cobalt, copper, nickel and manganese, which are the main metals that would be derived from seabed mining, continues to show strong upward movement, albeit with some volatility, particularly in prices for cobalt. As a result of this upward trend in prices, land-based production has increased steadily to cope with increased demand and several major nickel projects, including in New Caledonia, Australia, Philippines and Canada have either come onstream recently or are likely to come onstream in the next two years. Nevertheless, the midterm outlook for metal prices continues to be optimistic as it is anticipated that supply will struggle to keep up with demand as a result of rapid industrialization, particularly in China, India and the Russian Federation, combined with fast-growing markets in new end-uses, such as (in the case of cobalt) superalloys and nickel metal hydride batteries.

97. In these circumstances, recent years have seen increased interest in seabed mining from the private sector. The activities of Nautilus Minerals have been noted in previous reports of the Secretary-General. The company currently holds exploration licenses for seafloor massive sulphide deposits in water under the national jurisdiction of Papua New Guinea, Fiji and Tonga. Indeed, Papua New Guinea was the first country in the world to grant commercial exploration licenses for seafloor massive sulphide deposits when it granted the first license to Nautilus Minerals in 1997. In 2006, the company listed on both the Toronto Stock Exchange and the Alternative Investment Market of the London Stock Exchange. Since then, it

has raised over \$349 million to fund its exploration projects. Major shareholders in Nautilus Minerals include Anglo American plc, Epion Holdings Limited and Teck Cominco.

98. The current focus of Nautilus Minerals activities is the exploration, mine planning and development activities associated with its Solwara 1 project, believed to contain high-grade deposits of copper, gold and zinc, which is situated 50 kilometres north of Rabaul, the main port of East New Britain Province in Papua New Guinea, at depths of around 1,600 metres. In 2007, Nautilus Minerals announced that, subject to the permission and approval of the Government of Papua New Guinea, development activities at Solwara 1 would be expected to commence in 2009 and first concentrate sales would be expected in 2010 from an onshore processing facility. The company has already carried out extensive metallurgical testing and is now engaged in the design and construction of a mining system. In December 2007, the company awarded a contract to Soil Machine Dynamics, a United Kingdom registered company, to design and build two seafloor mining machines. In the meantime, a competitive engineering design programme is also under way to develop and test a pump and riser system. Also in 2007, Nautilus Minerals reported that it committed approximately \$23 million to environmental studies and exploration activities for Solwara 1.

99. According to its website, www.neptuneminerals.com, Neptune Minerals is a United Kingdom registered company which was founded in 1999 to explore, develop and commercialize seafloor massive sulphide deposits. The company listed on the Alternative Investment Market of the London Stock Exchange in 2005. Its administrative office is based in Sydney, Australia. The company currently holds exploration licences totalling more than 278,000 square kilometres in the territorial waters of New Zealand, Papua New Guinea, the Federated States of Micronesia and Vanuatu. It recently completed its second and third exploration programmes, Kermadec 07 and Colville-Monowai 07, offshore New Zealand. Neptune Minerals also reports that it has exploration applications pending covering 434,000 square kilometres in the territorial waters of New Zealand, Japan, Commonwealth of Northern Mariana Islands (United States), Palau and Italy.

100. Governments are also showing increased interest in the development of new marine mineral resources. For example, Japan's new ocean policy, developed under its Basic Law of the Sea of 2007, emphasizes the need to develop methane hydrate and hydrothermal deposits within Japan's exclusive economic zone and calls for the commercialization of these resources within the next 10 years.

101. Although the activities reported above are taking place within waters under national jurisdiction, they are clearly relevant to the work of the Authority and indicative of growing commercial interest in marine minerals. The resources that are being targeted also occur in the Area, and it is likely that the same technologies that are being developed for use within areas under national jurisdiction would also be adapted for use in the Area. Similar economic considerations would also apply to projects in the Area.

XVII. Concluding remarks

102. The present report will be the last annual report to be presented by the incumbent Secretary-General, Satya N. Nandan, who will end his term of office on

31 December 2008. On the occasion of his election as the first Secretary-General of the Authority on 21 March 1996, the Secretary-General noted that the main task for the Authority, once the political structures and organizational aspects had been put in place, was to provide a machinery for the administration of the resources of the deep seabed, which is the common heritage of mankind. The Authority represents a unique experiment in international relations. It is the only international body with the responsibility of administering a global commons for the benefit of mankind. The purpose of the Authority's work is to encourage the orderly development of the resources of the deep seabed so that the international community as a whole may benefit from them. To achieve these objectives, States parties to the Convention have established through the Authority the legal framework for those who wish to invest in the mining of minerals from the deep seabed. The Secretary-General further noted that the next step in the development of the Authority was to reach out and involve all those who are likely to undertake research and development activities in the deep seabed, including those who are associated with those activities through the development of marine technology, as well as those who had been registered as pioneer investors through the Preparatory Commission.

103. Twelve years later, it is apparent that the necessary institutional framework to establish the Authority as an autonomous international organization has been completed. In accordance with the 1994 Agreement, this has been done through an "evolutionary approach" and in a way that minimizes costs to members of the Authority. The Authority has also made substantial progress in implementing the substantive tasks it identified for itself in 1997. The regulatory framework for prospecting and exploration for polymetallic nodules was completed in 2000 and considerable progress has been made in elaborating a similar regulatory framework for polymetallic sulphides and cobalt-rich ferromanganese crusts. The Authority has also developed preliminary environmental guidelines for minerals exploration in the Area and has largely completed a resource assessment of the areas reserved for the Authority. In terms of furthering its general responsibility to promote and encourage the conduct of marine scientific research in the international area, the Authority has made greater progress than could have been anticipated in 1997 through its technical workshops and seminars. These workshops and seminars have brought together a very wide range of internationally respected scientists, engineers, lawyers and economists from both the public and private sectors to engage on issues of the greatest interest to the Authority. Through the publication of the results of the workshops, the information presented has been disseminated to all member States. This is a considerable achievement.

104. One of the most important milestones in the life of the Authority was to give formal recognition, in accordance with the provisions of the 1994 Agreement, to the claims of the former registered pioneer investors and thus to bring them within the single regime created by the Convention and the 1994 Agreement. This was a particularly important step because it not only demonstrated that the institutional structure of the new Authority could function effectively, but it was also an expression of confidence in the system on the part of the contractors. That confidence was further reinforced when an entity sponsored by the Federal Republic of Germany became the eighth contractor with the Authority in 2006.

105. It is essential, for the future well-being of the Authority, that this confidence in the system is maintained through the ongoing monitoring of contracts for exploration. Unless the terms of contracts are observed and, where necessary,

enforced, it will be difficult to attract genuine commercial interest in deep seabed mining in the Area. It is readily apparent that most of the efforts of the present contractors are directed at long-term environmental studies and the collection and analysis of environmental baseline data, financed through government funding by sponsoring or participating States, rather than any serious commercial research and development. In this regard, the role of the Council is critical. The way in which the Council is structured is the result of many months of painstaking negotiation. It contains a finely balanced decision-making mechanism that is intended to safeguard the interests of all States, even though it is apparent that a number of the States represented in the Council have conflicting interests as the State sponsors of contractors with the Authority on the one hand and custodians of the common heritage of mankind on the other hand. It will be particularly important in the coming years for all members of the Council, and for the Council as a whole, to ensure that at all times it acts in the best interests of the Authority and with the institutional objective of encouraging the orderly development of the resources of the deep seabed for the benefit of mankind firmly at the forefront.

106. At the same time, it is equally important that the work of the Authority continues to be supported by a secretariat that is not only technically qualified but also able to offer advice to member States and to the technical bodies of the Authority on the highly complex and technical issues associated with the management of the resources of the deep seabed and the environment in which they occur as well as on bringing deep seabed mining to fruition. The Convention and the 1994 Agreement ascribe particular functions and responsibilities to the Secretary-General and the secretariat to act on behalf of the Authority as a whole, including the need to interact with investors and commercial interests in seabed mining. These responsibilities need to be implemented judiciously. In an organization such as the Authority, the secretariat has a particularly important role to play in providing guidance to member States, including by participating constructively in the technical work and contributing to the discussions on substantive matters within the organs of the Authority.

Annex

Members of the Advisory Panel for the International Seabed Authority Endowment Fund for Marine Scientific Research in the Area

Alfredo García Castelblanco

Permanent Representative of Chile to the International Seabed Authority and
Ambassador Extraordinary and Plenipotentiary of Chile to Jamaica

Chen Jinghua

Permanent Representative of China to the International Seabed Authority and
Ambassador Extraordinary and Plenipotentiary of the People's Republic of China to
Jamaica

Francis Hurtut

Permanent Representative of France to the International Seabed Authority and
Ambassador Extraordinary and Plenipotentiary of the French Republic to Jamaica
and Bahamas

High Commissioner of Nigeria to Jamaica

(pending appointment of a new High Commissioner)

Coy Roache

Deputy Permanent Representative of Jamaica to the International Seabed Authority

Elva G. Escobar

Universidad Nacional Autónoma de México (member of the Legal and Technical
Commission)

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