



Council

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Report of the Chairman of the Legal and Technical Commission

1. During the twelfth session of the Authority, the Legal and Technical Commission met from 7 to 11 August 2006. It held seven meetings. The following members of the Commission attended the meetings: Shahid Amjad, Frida Armas Pfirter, Jean-Marie Auzende, Arne Bjørlykke, Syamal Kanti Das, Walter De Sá Leitão, Baïdy Diène, Miguel Dos Santos Alberto Chissano, Yoshiaki Igarashi, Jung-Keuk Kang, Li Yuwei, Lindsay Parson, Mahmoud Samy, Alfred Thomas Simpson, Adam M. Tugio, Rodrigo Urquiza and Michael Wiedicke-Hombach.
2. At its first meeting, the Commission elected Mr. Parson as Chairman of the Commission in accordance with the understanding it had reached at its last meeting, in 2005. Mr. Igarashi was elected as Vice-Chairman.
3. The Commission considered the following items:
 - (a) Annual reports of contractors submitted pursuant to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (“The Regulations”);¹
 - (b) Update on progress in the geological model on polymetallic nodule deposits in the Clarion-Clipperton fracture zone;
 - (c) Report on the workshop on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna;
 - (d) Consideration of the proposal to establish a mineral resource/reserve classification system for the Area;
 - (e) Environmental issues in a broader context within the mandate of the Commission;
 - (f) Report on the workshop on mining of cobalt-rich ferromanganese crusts and polymetallic sulphides — technological and economic considerations.

¹ ISBA/6/A/18.



I. Annual report of contractors

4. In closed meetings, the Commission evaluated and considered the fifth set of annual reports of contractors submitted pursuant to the Regulations. The Commission noted that annual reports had been received from seven contractors: Deep Ocean Resources Development Ltd., the Government of the Republic of Korea, China Ocean Mineral Resources Research and Development Association, Yuzhmorgeologiya, Interoceanmetal Joint Organization, the French Research Institute for the Exploitation of the Sea and the Government of India.

5. An ad hoc working group comprising Mr. Amjad, Mr. Auzende, Mr. De Sá Leitão, Mr. Diène, Mr. Parson, Mr. Igarashi, Mr. Thomas Simpson, Mr. Samy, Mr. Kanti Das, Mr. Li and Mr. Urquiza carried out a preliminary review of the annual reports and prepared a draft evaluation report for consideration by the Commission as a whole. The group was assisted by a document prepared by the secretariat (ISBA/12/LTC/CRP.1). The group was able to carry out its work during the week before the opening of the twelfth session and was able to prepare a working document for the full Commission to consider in plenary. The Commission wishes to express its thanks to these members and also to the excellent support provided by the secretariat in this work.

6. The Commission noted that for the most part, the annual reports provided a significant amount of information about the activities of the contractors, greatly facilitating the work of the Commission. It further noted that the amount and the quality of information provided by contractors had steadily improved over the five years of reporting and expressed its gratitude to the contractors for their efforts to present data in accordance with the draft regulations and the recommendations of the Commission. Nonetheless, the Commission requests that wherever possible, the greatest care should be taken to ensure, in particular, that any illustrative material provided is appropriately and clearly annotated. It would further facilitate the Commission's task if work undertaken according to the contract at any time other than the current reporting year were clearly identified as such so as to avoid any uncertainty regarding the contractor's activities.

7. All other meetings of the Commission other than those dealing with the annual reports of the contractors were declared open to members of the Authority to observe.

II. Update on progress in the geological model on polymetallic nodule deposits in the Clarion-Clipperton fracture zone

8. On 8 August 2006, Charles Morgan presented a progress report of work on the geological model on polymetallic nodule deposits in the Clarion-Clipperton fracture zone (ISBA/12/LTC/CRP.3). Mr. Morgan noted that a number of the milestones established as part of the phases of the project had been reached and the model was in a robust form.

9. In particular, it was reported that the contractors had made major contributions of data and analyses to assist the development of the model and this had increased the reliability of its predictive component. The model already showed that exposure of the seafloor to varying levels of chlorophyll could be used as a proxy for nodule

abundance. Furthermore, the proposed relationship of nodule grade to their vertical distance from the carbonate compensation depth has been supported by the latest compilations of recently available datasets provided the contractors. Refinement of these and other factors associated with nodule grade and abundance characteristics are ongoing.

10. The model now moves into a phase of consolidation and conclusion, and it is anticipated that a full meeting of the consultants and experts engaged in the project will take place later this year to review the status of work with a view to finalizing the product. The Commission congratulated Mr. Morgan on his considerable efforts in coordinating the work, thanked him for his update and requested that it be kept informed of further progress on a regular basis.

III. Report on the workshop on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna

11. On 9 August 2006 the secretariat presented a paper (ISBA/12/LTC/CRP.2) summarizing the results of the workshop held at the Authority between 27 and 31 March 2006 on cobalt-rich crusts and the diversity and distribution patterns of seamount fauna.

12. The Commission noted the principal conclusions of the workshop, namely, that seamount fauna were largely unsampled in the critical areas of potential exploration and mining and that this had significant implications in developing an understanding of, among other issues, endemism — the degree to which a species is restricted to a particular geographic region. Endemism is a characteristic of critical importance not only to cobalt-rich ferromanganese crusts but also to polymetallic sulphides owing to the form of occurrence of these deposits at localized sites as compared to the widely distributed nature of polymetallic nodule resources. The workshop strongly recommended that a number of marine research cruises be carried out to improve the knowledge base in that regard.

13. As a result of this low density of sample data, guidelines for the establishment of environmental baselines, along with those detailing marine preservation areas and impact reference areas, were extremely difficult to finalize.

14. In view of the paucity of data available to develop meaningful guidelines, the Commission suggested that the secretariat collaborate further, and as fully as possible, with the wider scientific community (for instance, the Global Census of Marine Life on Seamounts and the Integrated Ocean Drilling Programme) in promoting and establishing international collaborative programmes to improve the understanding of this environment. The Commission was informed during discussion that older relevant biological archive datasets existed. As far as possible, these should be made available to the secretariat, preferably as part of the Authority's Central Data Repository system.

IV. Consideration of the proposal to establish a mineral resource/reserve classification system for the Area

15. On 9 August 2006 Mr. Li presented to the Commission a proposal for the development of a mineral resource/reserve classification system for the Area. Such a classification system is useful to evaluate the resource for management purposes, both in terms of exploration and economics. Mr. Li pointed out that commercial exploration needed standards as provided for by such a classification system to define categories of mineral resources and express reserves as exploration commodities.

16. Mr. Li provided a summary review of a number of existing resource/reserve classification systems from around the world and concluded that all fell short of an ideal system for the resource/reserves of the Area. The classification system that Mr. Li proposed relies on category factors related to economic, feasibility and geological attributes of the resource/reserve. A three-digit numerical combination can be used to provide a direct classification of a resource/reserve.

17. The Commission was impressed with the depth of the comprehensive study made by Mr. Li and noted the need for a classification for the Area. Debate ensued as to the suitability for the resource/reserve of the Area of those existing systems which have been specifically designed to have global applicability, for example, the United Nations Framework Classification for Energy and Mineral Resources. It was agreed to retain the proposal made by Mr. Li for further discussion in order to make it available for use by the Commission as and when required for the resource/reserve of the Area.

V. Environmental issues in a broader context within the mandate of the Commission

18. The Commission was informed in a presentation by Ms. Armas Pfirter of the broader context of environmental issues as they relate to the work of the Legal and Technical Commission and how the future challenges of the environmental aspects of developing the resources of the Area may present themselves.

19. The Commission then addressed itself to a number of items on its agenda relating to the marine environment, namely a discussion on the workshop on technological and economic considerations relevant to mining of cobalt-rich ferromanganese crusts and polymetallic sulphides, held immediately before the twelfth session, and the consideration of environmental guidelines for cobalt-rich ferromanganese crusts and polymetallic sulphides — the results of a workshop held at the Authority in September 2004.

A. Report on the workshop on mining of cobalt-rich ferromanganese crusts and polymetallic sulphides — technological and economic considerations

20. The Commission discussed the results of the workshop held at the Authority on technical and economic consideration for mining cobalt-rich ferromanganese crusts and polymetallic sulphides held in Kingston (31 July-4 August). The

workshop discussed some aspects of the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts and their application to hypothetical seabed mining scenarios for both resources in the Area.

21. Among other conclusions, the workshop recommended different methods for defining exploration areas for sulphides and cobalt-rich crusts. Charles Morgan and James Hein, experts who had been invited by the secretariat to provide additional technical input to the discussions on the draft regulations, presented these conclusions to the Council on 8 August.

22. A member of the Commission who attended the workshop, Mr. Igarashi, summarized for the Commission the key results and findings of the workshop by way of an introduction to a discussion relating to guidelines on environmental considerations for prospecting and exploration for these resources, as well as providing an opportunity to inform members of the latest findings and analyses relevant to the draft regulations for cobalt-rich ferromanganese crusts and polymetallic sulphides.

23. The Commission noted that the new findings by the workshop made it more difficult to deal with both cobalt-rich crust and polymetallic sulphides in the same set of regulations. During its discussions, the Commission considered the possibility of dealing with parallel but separate sets of regulations for each resource. The Commission indicated that it would be ready to review the draft regulations it had presented to the Council. The Commission suggested that the Council might consider allowing the Commission further time to refine and improve the draft regulations for each of these resources in the light of the new analyses from the workshop, the papers prepared by the secretariat for the twelfth session and the discussions points raised by the Council in its deliberations on this matter.

B. Consideration of environmental guidelines for cobalt-rich ferromanganese crusts and polymetallic sulphides

24. At the eleventh session, the Commission took the decision to defer discussion of the report prepared by the secretariat containing the recommendations of the workshop held in Kingston in September 2004 dealing with polymetallic sulphides and cobalt-rich ferromanganese crusts — their environment and considerations for the establishment of environmental baselines and associated monitoring programmes for exploration, until such time as the draft regulations for exploration of these resources had been finalized. While recognizing that this stage of finalization has not yet been reached, during the twelfth session the Commission felt it was useful to address some of the principles behind the recommendations insofar as they had a bearing on the results of the workshop on mining of cobalt-rich ferromanganese crusts and polymetallic sulphides in the Area, held immediately before the twelfth session at the Authority between 31 July and 4 August.

25. The Commission noted that a general conclusion of the workshop with regard to both resources was that the critical lack of detailed sampling and surveying meant that there was a very limited understanding of the physical, geochemical and biological conditions at potential sites for exploration for those resources. It was felt that this was a major difference between the establishment of environmental guidelines for polymetallic nodules and these new resources, in that the former

benefited from an extensive extant knowledge base accumulated over a number of years of prospecting. This contrasted sharply with the starting position for establishing guidelines for the new resources, with their very poor background database. The Commission recognized that this lack of knowledge was reflected in the extensive recommendations made at the workshop, which required major data acquisition programmes by potential contractors in order to prepare environmental guidelines. It was acknowledged that such a comprehensive set of data-gathering requirements would be largely impractical and, at the least, a significant discouragement to potential contractors' exploration programmes for those resources.

26. The Commission discussed the estimated environmental impact of prospecting and exploration, and there were strong suggestions that at the prospecting stage and to a great extent in the exploration phase, the effects on these environments was likely to be minimal and, in some cases, negligible. It would only be at the test-mining stage that significant potential effects could occur. In that respect, it was doubted whether the somewhat comprehensive recommendations presented in ISBA/11/LTC/2 were appropriate at the early stages of a contract. It was further considered whether detailed guidelines could be developed between the Authority and each contractor on a case-by-case basis, specified according to the exact plan of work proposed, or whether the guidelines should be of a similar structure to those relevant to the polymetallic nodule deposits of the Area.

27. The Commission recognized that its discussion on this topic was preliminary and noted that the workshop report had been prepared by a largely academic community. It therefore suggested that it be circulated to a wider audience, including potential contractors, for comment prior to further discussion by the Commission at the next session.

VI. Other matters

A. Possible workshop topics

28. The Commission considered possible themes for workshops that the secretariat might convene, concerning topics of direct importance to the work of the Commission and the Authority. The Commission felt that the suggestion made last year regarding the topic of economic aspects of commercial mining operations and production remained highly relevant and urged that this topic be considered accordingly.

B. Forthcoming elections of candidates for the Legal and Technical Commission at the twelfth session of the Authority

29. The Commission discussed the forthcoming election of candidates for the Legal and Technical Commission and noted that, in the light of the current number of candidates standing for election at the twelfth session, it had been asked by Council to comment on the efficiency of its functioning with its present membership of 24 experts.

30. It was widely agreed by the Commission that it was able to function efficiently and effectively with 24 experts, as it was not possible for all members to attend each session. It was also agreed that there was a need to preserve as wide a range of disciplinary expertise as possible. The Commission specifically noted the need for specialists in certain key disciplines, including marine biology, mining engineering and mining economics.

31. The Commission acknowledged that it was unlikely to provide every type of expertise required to fulfil its wide remit of work. It further recognized that, when necessary, expertise had been sought outside the membership by the secretariat to bring additional specialist knowledge and skills to its work. The Commission considered this to be an essential process, which should continue. It further requested that it be consulted by the secretariat in the identification and selection of such experts called in to help in their work for the Authority.

32. Finally, the Chairman observed that as this session marked the final meeting of the current Legal and Technical Commission and a number of members would not seek re-election, it was an appropriate occasion on which to warmly thank all of those who had served the Authority with such professionalism and dedicated enthusiasm during their terms of office. The Commission did not forget that several long-standing members were not able to be present and they, too, had the gratitude of the Commission. Several members expressed their hope that the new Commission would recognize that, should it be required it could draw on the experience and expertise of those members in support of the Authority's work in future. In closing, the Chairman expressed, on behalf of all the present members, his best wishes for the work of the incoming Commission.
