

**IOC Editorial Board
for the International Bathymetric
Chart of the Western Indian Ocean**

Second Session

Quatre Bornes, Mauritius, 3-5 July 1990

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Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies



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for the International Bathymetric
Chart of the Western Indian Ocean

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In this Series, entitled

Reports of Meetings of Experts and Equivalent Bodies, which was initiated in 1984 and which is published in English only, unless otherwise specified, the reports of the following meetings have already been issued:

1. Third Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
2. Fourth Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
3. Fourth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of «El Niño» (*Also printed in Spanish*)
4. First Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in relation to Living Resources
5. First Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in relation to Non-Living Resources
6. First Session of the Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
7. First Session of the Joint CCOP(SOPAC)-IOC Working Group on South Pacific Tectonics and Resources
8. First Session of the IODE Group of Experts on Marine Information Management
9. Tenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies in East Asian Tectonics and Resources
10. Sixth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
11. First Session of the IOC Consultative Group on Ocean Mapping (*Also printed in French and Spanish*)
12. Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ships-of-Opportunity Programmes
13. Second Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
14. Third Session of the Group of Experts on Format Development
15. Eleventh Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of South-East Asian Tectonics and Resources
16. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
17. Seventh Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
18. Second Session of the IOC Group of Experts on Effects of Pollutants
19. Primera Reunión del Comité Editorial de la COI para la Carta Batimétrica Internacional del Mar Caribe y Parte del Océano Pacífico frente a Centroamérica (*Spanish only*)
20. Third Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
21. Twelfth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of South-East Asian Tectonics and Resources
22. Second Session of the IODE Group of Experts on Marine Information Management
23. First Session of the IOC Group of Experts on Marine Geology and Geophysics in the Western Pacific
24. Second Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in relation to Non-Living Resources (*Also printed in French and Spanish*)
25. Third Session of the IOC Group of Experts on Effects of Pollutants
26. Eighth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
27. Eleventh Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (*Also printed in French*)
28. Second Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in Relation to Living Resources
29. First Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
30. First Session of the IOCARIBE Group of Experts on Recruitment in Tropical Coastal Demersal Communities (*Also printed in Spanish*)
31. Second IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
32. Thirteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asia Tectonics and Resources
33. Second Session of the IOC Task Team on the Global Sea-Level Observing System
34. Third Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
35. Fourth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
36. First Consultative Meeting on RNODCs and Climate Data Services
37. Second Joint IOC-WMO Meeting of Experts on IGOSS-IODE Data Flow
38. Fourth Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
39. Fourth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
40. Fourteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asian Tectonics and Resources
41. Third Session of the IOC Consultative Group on Ocean Mapping
42. Sixth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of «El Niño» (*Also printed in Spanish*)
43. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
44. Third Session of the IOC-UN (OALOS) Guiding Group of Experts on the Programme of Ocean Science in Relation to Non-Living Resources
45. Ninth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
46. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
47. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
48. Twelfth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans
49. Fifteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE Studies of East Asian Tectonics and Resources
50. Third Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
51. First Session of the IOC Group of Experts on the Global Sea-Level Observing System
52. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean
53. First Session of the IOC Editorial Board for the International Chart of the Central Eastern Atlantic (*Also printed in French*)
54. Third session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (*Also printed in Spanish*)
55. Fifth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
56. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean

TABLE OF CONTENTS

SUMMARY REPORT	Page
1. OPENING OF THE SESSION	1
2. ADOPTION OF THE AGENDA	1
3. CONDUCT OF THE SESSION AND DOCUMENTATION	1
4. INFORMATION ON CURRENT IOC OCEAN MAPPING ACTIVITIES	1
5. PROGRESS IN THE COLLECTION AND DISTRIBUTION OF DATA FOR THE IBCWIO	1
6. THE STATE OF NATIONAL PARTICIPATION IN THE PROJECT	2
7. THE DIGITAL CARTOGRAPHIC BASE FOR THE COASTLINE AND TOPOGRAPHIC INFORMATION	5
8. MATTERS ARISING FROM THE REPORT OF THE PREVIOUS SESSION	5
9. ANY OTHER BUSINESS	5
10. PLACE AND DATE OF THE NEXT SESSION	5
11. ELECTION OF THE VICE-CHAIRMAN OF THE IBCWIO	6
12. APPROVAL OF THE SUMMARY REPORT	6
13. CLOSURE OF THE SESSION	6

ANNEXES

- I AGENDA
- II RECOMMENDATION ON TRAINING COURSES IN BATHYMETRIC MAPPING
- III LIST OF PARTICIPANTS

1. OPENING OF THE SESSION

1 The Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean was opened at 09.00 on Tuesday 3 July 1990, in the Conference Room of the Gold Crest Hotel, by the Minister of Housing, Lands and Environment, Sir Ramesh Jeewoolall. He welcomed the participants on behalf of the Government of Mauritius and emphasized the importance of bathymetric maps to furthering the knowledge of the marine environment, particularly in the case of countries such as Mauritius which have extensive Exclusive Economic Zones (EEZ).

2 After a short speech by the Chairman of the Editorial Board, Dr. Werner Bettac, the Technical Secretary, Mr. Viktor Sedov welcomed the participants on behalf of the Secretary IOC, Dr. Gunnar Kullenberg.

3 A full List of Participants is given in Annex III.

2. ADOPTION OF THE AGENDA

4 The Provisional Agenda was presented by the Technical Secretary and was adopted without change (see Annex I).

3. CONDUCT OF THE SESSION AND DOCUMENTATION

5 Mr. Sedov, in his capacity as Technical Secretary for the Session, presented the documentation. Mr. Peter Hunter was proposed and unanimously elected to undertake the task of Rapporteur for the Session.

4. INFORMATION ON CURRENT IOC OCEAN MAPPING ACTIVITIES

6 Mr. Sedov presented a report on IOC Ocean Mapping activities. He continued by bringing the Board up to date with recent developments, both in global and regional mapping projects.

7 Board members asked if examples of published IOC bathymetric charts could be provided in order that they could have a better idea of the results that they can expect from this project. It was agreed that this request will be taken care of by IOC and IHO sending material to the Board Members.

5. PROGRESS IN THE COLLECTION AND DISTRIBUTION OF DATA FOR THE IBCWIO

8 The Chief Editor, Dr. Werner Bettac, informed the Members of the Editorial Board on the achievements in the collection and distribution of bathymetric data for the IBCWIO. Smaller intersessional meetings with the U.K. Hydrographic Office had been necessary during the year to plan the method of plotting out data.

9 Data and information had been assembled from several sources: the Hydrographic Offices of U.K., France, Federal Republic of Germany, South Africa and National Geophysical Data Center, USA. The Portuguese Hydrographic Institute had been contacted concerning data around Mozambique and the Hydrographic Office of India about general data. Contours and soundings have been received from Dr. Robert L. Fisher of Scripps Institution of Oceanography, U.S.A. The Chief Editor demonstrated by some chart examples in which form the data have been received or have been plotted.

10 The U.K. Hydrographic Office is plotting data for two initial areas, which will act as prototypes for the methods to be used later for the

rest of the project. Copies of plotting sheets will be distributed to the board members for further work.

11. It was the intention to distribute plotting sheets of two large areas to the members before the session, to enable them to discuss the work to fulfil in the future with their colleagues in their home offices. Due to a lot of other work, the British H.O. was in the position to plot only one example of each of the possible type of charts. When sufficient numbers of plotting sheets are printed, they will be distributed to the board members for further work.

12. There was concern that some countries in the region were not attending the session of the Editorial Board. It was felt that they should be provided with the minutes of the Editorial Board sessions, even though they are unable to attend the sessions. It was noted that some countries of the region not represented on the Board would be able to provide considerable data and it was suggested that suitable bathymetric experts may be invited to help if and when appropriate. It was also recommended that other interested parties be provided with copies of the minutes; addresses of possible contacts should be given to Mr. Sedov.

6. THE STATE OF NATIONAL PARTICIPATION IN THE PROJECT

13. Board Members asked the Chief Editor to clarify the term "Regional Responsibility" and their duties. This term was described as a responsibility of a country for an area in which it will locate and obtain existing data, and was not supposed to supersede the existing Volunteering Hydrographic Offices Responsibilities. Any data that were obtained should be sent to the Chief Editor before further dissemination.

14. Editorial Board Members were asked to provide a summary of their activities during the past year in identifying and obtaining data within their countries.

15. Mr. Darmalingum Ramasawmy reported that he had requested that the Ministry of External Affairs of Mauritius to contact the British, French, United States and Indian authorities on the availability of bathymetric data in the Western Indian Ocean. It was confirmed by Mr. Hunter that all data available from the British have been submitted to the IBCWIO project.

16. The only other bathymetric data available are in the harbour area and can be obtained from the Marine Authority. These are suitable for large scale charts and therefore would be of little use to the Editorial Board.

17. The Survey Division of his Ministry would be prepared to plot on transparencies whatever bathymetric data may be available to EB-IBCWIO.

18. Mr. Troy Holcombe reported that his agency, the U.S. National Geophysical Data Center (NGDC), has provided a digital copy of its digital bathymetric data holdings to the Chief Editor, in keeping with the intent expressed at the First Session of the Editorial Board that there would be exchange of data between the IBCWIO project and NGDC. These data were transferred to the British Hydrographic Office to be plotted on paper sheets for the project.

19. New bathymetric data has been acquired by NGDC since the main body of data were provided, and these will also be provided to the project.

- 20 Additionally, it was pointed out that considerable data are held in the U.S. on paper plotting sheets, as detailed in a list provided to the Chief Editor. Copies of any of these sheets are available upon request.
- 21 Mr. Ntahondi Nyandwi (Institute of Marine Sciences, Zanzibar) stated that execution of the project had been expected to be through the IOC National Committee but due to financial limitations the Committee had been unable to convene. However, with the help of Mr. Chodota, contacts were made with the Directorate of Mapping Divisions both in Dar es Salaam and Zanzibar who had pledged their full support for the project. During July 1989 a visit to Dar es Salaam revealed that there were no new data other than the coastal navigational charts (British Admiralty). Additional contacts have been opened up between the Directorate of Mapping Division and the oil exploration companies to seek new vital bathymetric information. It will be necessary to make a visit to the oil exploration companies who are believed to have some data.
- 22 Mr. Jean-François Bonnot reported that, as decided during the First Session, SHOM (France) has produced an index of the bathymetric data in its possession as required by the Editorial Board. This index is not limited to the area of the Indian Ocean within the responsibility of France and covers generally the area of IBCWIO. It does not include the GEBCO data which are already in possession of the British Hydrographic Office which is responsible for GEBCO Oceanic Plotting Sheets in the Indian Ocean. SHOM sends the bathymetric data that it receives from different French organizations to the British Hydrographic Office as a routine.
- 23 SHOM is ready to transmit these data at the convenience of the Committee. However, unfortunately most of the data that SHOM can provide are still in analogue form (original fair sheets), and it is not possible for SHOM to carry out the digitization of these data. They exist in two forms at the present time: fair sheets at the scale of the original surveys or micro forms as archived collections. The Editorial Board should state in what form and at what scale it wishes to receive these data.
- 24 On the other hand, Mr. Bonnot indicated that he has established contacts with French oil companies for obtaining specific and unpublished data together for the Indian Ocean and Eastern Atlantic Ocean, as SHOM is now involved in both International Bathymetric Chart Projects.
- 25 He also stated for information, that it is planned to send the "Mission Océanographique de Méditerranée" on board N.O. "D'Entrecasteaux" to the Indian Ocean for the first six months of 1991. The programme of this cruise is to carry out an hydrographic survey of the area south of Réunion (the survey of the north coast was conducted under the direction of Mr. Bonnot in 1985) and to fix the positions of the different French islands in this region by satellite (Glorieuses, Europa, Bassas das Indias, and Tromelin). Measurements at sea and on land will be made to obtain the data necessary to process SPOT scenes within the new technology of spatial charting.
- 26 Mr. Hunter reported that the U.K. Hydrographic Office, had taken delivery of the NGDC digital data and were currently plotting sections of it, in order of contouring priority (still to be arranged by the board). This order of priority will also apply to enlargements of their manuscript GEBCO collected sounding sheets. To assist them the Institute of Oceanographic Sciences Deacon Laboratory (IOSDL) are making plots at a scale of 1 in 1 million to compare with the GEBCO sheets in order to select those areas which will require presenting at a scale of 1:250,000.

27 IOSDL have prepared digital data from their cruises in the region, this will be added to the other digital data. Analogue data will be digitized and added too. Interpreted, long range sidescan data is available for use at the contouring stage of the project. Digital data from U.K. Universities and other sources has been obtained, these will be included in the above plots.

28 Mr. John Obel (Survey of Kenya) stated that since the last session, he had written to eight organizations thought to have some data. The organizations were as follows:

- (i) Survey of Kenya
- (ii) Kenya Ports Authority
- (iii) Kenya Navy
- (iv) Kenya National Oil Corporation
- (v) Ministry of Energy
- (vi) Mines and Geology Department
- (vii) Ministry of Water Development
- (viii) Kenya Meteorological Department
- (ix) Kenya Marine and Fisheries Research Institute.

29 Despite reminders, only three of the above organizations had responded. The survey of Kenya made available various Admiralty Charts produced by the British Navy several years ago which are now outdated and may have been superseded or incorporated in later charts.

30 The Kenya Ports Authority reported that they had no data but referred Mr. Obel to the Hydrographer of the Navy, U.K. and also the Naval Hydrographic Office, India which looks after the Western Indian Ocean.

31 The Kenya National Oil Corporation supplied co-ordinates and a map of offshore basins and wells where drilling had taken place. There is a possibility of more data (e.g. pre-drilling surveys). Further avenues will be followed up at the Ministry of Energy, which deals with all the oil prospecting companies. The non-responding organizations will also be re-contacted.

32 Organizations outside Kenya were also contacted for data as follows:

- (i) Institute of Oceanographic Sciences, Deacon Laboratory, U.K.
- (ii) National Geophysical Data Center, U.S.A.
- (iii) The Hydrographic Office, U.K.
- (iv) The Naval Hydrographic Office, India.

33 No responses had been received by the end of June 1990 but responses are expected soon.

34 Mr. Martin Chodota (Regional Centre for Services in Surveying, Mapping and Remote Sensing, Kenya) reported that since the last Session of the Editorial Board its proceedings had been presented to the Centre's governing council. The Member States concerned were requested and had agreed to co-operate with the Members of the Editorial Board.

35 The Centre had also written twice to the individual Editorial Board Members and the Heads of Mapping Institutions in each Member State to invite them to continue with data collection.

36 Also the Centre had intensified its efforts to establish

Hydrographic and Bathymetric Charting Units in the sub-region. The IHB has continuously supported the Centre in all these activities. A Regional Project is currently being developed for training and repair of hydrographic survey equipment.

7. **THE DIGITAL CARTOGRAPHIC BASE FOR THE COASTLINE AND TOPOGRAPHIC INFORMATION**

37 Mr. Holcombe presented a summary description of the Digital Chart of the World (DCW). The DCW is based on the 1:1,000,000 Operational Navigation Chart Series (ONC) and contains topographic heights expressed at 1000 foot intervals. After discussion the Editorial Board concluded that better topography probably exists within the member countries of the board. Mr. Holcombe also briefly described the World Vector Shoreline (WVS) data set which is based on 1:250,000 mapping which is currently under evaluation by the GEBCO Sub-Committee on Digital Bathymetry for its adoption by GEBCO.

38 The Editorial Board decided to use the WVS for the coastline (permission for use of the WVS will be required from the USA), and topography in metres will be derived from mapping available within the countries of the region.

8. **MATTERS ARISING FROM THE REPORT OF THE PREVIOUS SESSION**

39 Apart from some minor corrections to the maps showing the areas of responsibility for member countries (as distributed before the session), there were no matters arising.

9. **ANY OTHER BUSINESS**

40 The Chief Editor stated that he will co-ordinate assembly of the data and their distribution to the countries having responsibilities for the areas in which they lie.

41 RAdm. Alfredo Civetta drew the attention of the Board to the need to have any new names not appearing in IHO publication BP-0008 (Gazetteer of Geographical Names of Undersea Features shown (or which might be added) on the GEBCO and on the IHO small scale International Chart Series) outside territorial waters checked and approved before use on the IBCWIO.

42 He reminded them of the existence of the GEBCO Sub-Committee on Geographical Names and Nomenclature of Ocean Bottom Features which would carry this out on their behalf. He added that there are many features in the region that, as yet, have no names and that suggestions would be appreciated, so long as the usual naming conventions are observed.

43 The need for a training course in bathymetric mapping for the countries of the region was discussed. The Editorial Board strongly recommended that the IOC provide such a course (see Annex II).

10. **PLACE AND DATE OF THE NEXT SESSION**

44 Although no formal invitation had been received, it was proposed that Zanzibar, Tanzania, may be a possible venue for the next meeting. The Board decided, unanimously, to recommend to the IOC that the Third Session be held in 1992 in Zanzibar. The first half of June was put forward as a tentative date.

11. **ELECTION OF THE VICE-CHAIRMAN OF THE IBCWIO**

45 Mr. Nyandwi of Tanzania was proposed as Vice-Chairman for the next
two years. He was unanimously elected.

12. **APPROVAL OF THE SUMMARY REPORT**

46 The Board adopted the Summary Report as amended.

13. **CLOSURE OF THE SESSION**

47 In closing the Session, the Chairman thanked the Vice-Chairman and
the Government of Mauritius for the excellent arrangements throughout the
Session.

48 The Second Session of the Editorial Board was closed by the
Chairman at 20:00 on 5 July 1990.

ANNEX I

AGENDA

1. OPENING OF THE SESSION
2. ADOPTION OF THE AGENDA
3. CONDUCT OF THE SESSION AND DOCUMENTATION
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8. MATTERS ARISING FROM THE REPORT OF THE PREVIOUS SESSION
9. ANY OTHER BUSINESS
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13. CLOSURE OF THE SESSION

ANNEX II

RECOMMENDATION ON TRAINING COURSES IN BATHYMETRIC MAPPING

The IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean (EB-IBCWIO),

Noting (i) that the IBCWIO has been successfully started and is progressing well in the collection of bathymetric data ; and that the data available need to be processed by the States of the region,

Considering (i) the lack in the region of trained and experienced personnel for the initial compilation of bathymetric and other relevant data ; and (ii) the non-existence within the countries of the Region of national training facilities in this specialization,

Being aware of the need that the participating countries of the region be directly involved in the compilation work of the IBCWIO in order to improve their knowledge of the sea area under their jurisdiction for a better use of it,

Recognizing the existence in the area of the Nairobi Regional Centre for Services in Surveying, Mapping and Remote Sensing (RCSS MRS) which is already performing training for the Eastern and Southern African countries in other areas of cartography,

Recommends that (i) IOC organize a two to three weeks course in bathymetric mapping at the RCSS MRS for the training of one or two specialists from each of the participating Member States ; and the IOC Secretariat seek extra budgetary funding for such a training course to be held at the beginning of 1992.

ANNEX III

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