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1. OPENING

1 The Director of the Kenya Marine and Fisheries Research Institute (KMFRI), Dr. E. Okemwa, called the meeting to order at 10.00 on Tuesday 6 May 1997, at the Whitesands Hotel, Mombasa, Kenya.

2 Dr. Okemwa welcomed the participants to Kenya, and noted that almost all Member States of the Region were represented. He recalled the important involvement of Kenya in the Intergovernmental Oceanographic Commission's activities and stressed the need of formulating a realistic IOCINCWIO programme of work for the next four years, which would also strive to attract donor's attention. His speech is given in Annex III-A.

3 *The* Chairman of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Mr. S. Ragoonaden, thanked the Government of Kenya for hosting the Meeting and in particular the Kenya Marine and Fisheries Research Institute. He also expressed his appreciation to the IOC for its substantial support to this important meeting. He recalled IOCINCWIO-111 and the fact that the session stressed the importance of regional co-operation. His speech is given in Annex III-B.

4 Dr. Okemwa introduced the IOC representative, Mr. P. Pissierssens, who welcomed all participants on behalf of the IOC Executive Secretary, Dr. Kullenberg, and expressed his great appreciation to the Government of Kenya for hosting the Session and making such excellent arrangements. He then informed the Regional Committee that in less than ten years, the region has tripled its human capacity in the field of marine sciences. This means that the region's scientists have reached maturity and now the focus should be mainly on operational activities. He stressed the important role that WIOMSA is playing in providing linkages between the scientists, the local communities, the national and local governments and the international community. He thanked the numerous donors that contributed to the implementation of the IOCINCWIO programme and activities during the inter-sessional period. Finally, recalling the Arusha and Seychelles Conferences and as a follow-up to UNCED, he urged Member States to show clear commitment by allocating funds from the national budget to marine related research. His speech can be found in Annex HI-C.

5 *The* Permanent Secretary of the Ministry for Research, Technical Training and Technology, Mr. P. Mathanjuki welcomed the participants. He recalled the role of his Ministry in Kenya's research activities, and the scientific problems that encountered in the marine sector.

6 Dr. Okemwa then introduced the Hon. Rashid Sajjad, Assistant Minister for Research, Technical Training and Technology. In his address on behalf of the Minister for Research, Technical Training and Technology, Hon. Sajjad recalled the establishment of the IOCINCWIO body as a Kenya driven initiative, and acknowledged the achievements of the Committee since 1979. He noted that many countries in the region such as Kenya were still lacking a comprehensive framework for the protection and management of coastal resources. He emphasized that despite its limited resources, the Kenya Marine and Fisheries Research Institute has adopted a multi-disciplinary approach in its attempt to address fisheries, aquiculture, environmental and ecological issues affecting the marine environment of Kenya. He called upon Member States represented to initiate public awareness activities on ocean related issue especially in the light of the 1998 International Year of the Ocean. He finally stressed that Member States should implement the East African Plan established within the Nairobi Convention as it provides a legal framework for the sustenance of marine life. He then declared the Fourth Session of the IOCINCWIO open. His speech is given in Annex III-D. The List of Participants is given in Annex V.

2. ADMINISTRATIVE ARRANGEMENTS

7 The Chairman called the Session to order and welcomed the Representatives to the Fourth Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean (IOCINCWIO-IV).

2.1 ADOPTION OF THE AGENDA

The Committee adopted the Agenda for the Session, as proposed by Germany and seconded by Mozambique. The Agenda is provided in Annex 1.

2.2 DESIGNATION OF THE RAPPORTEUR

9 The Committee elected Mr. Rondolph Payet (Seychelles) as rapporteur for the Session, following the proposal of Tanzania, seconded by Madagascar.

2.3 CONDUCT OF THE SESSION. TIMETABLE AND DOCUMENTATION

10 The Technical Secretary for the Session, Mr. Peter Pissierssens, introduced the timetable, the documentation and the conduct of the Session, referring to the Provisional Annotated Agenda (Document IOCINCWIO-IV/2), and the List of Documents (Document IOCINCWIO-IV/4) attached to this report as Annex IV. He also apologized for the fact that, due to financial constraints, documents for the Session could only be made available in English, except the Agenda and Provisional Annotated Agenda which were available in both French and English. However, the Technical Secretary confirmed that the Summary Report of the Session would be made available in English and French.

11 The Technical Secretary then invited to make use of *Ad Hoc* Sessional Groups for several of the agenda items. Their terms of reference included the preparation of draft work plans and timetables for implementation, as well as estimation of financial requirements, where possible. Each *Ad Hoc* Sessional group would identify a Chairperson and Rapporteur who would report the results of the discussions to the plenary. The Regional Committee adopted the use of *Ad Hoc* Sessional Groups and identified eight Sessional Groups: ODC; OSLR; OSNLR and ICAM; Ocean Services and GOOS; Capacity Building; International Year of the Ocean, and Workplan 1997-2001.

3. REPORT OF THE EXECUTIVE SECRETARY ON INTERSESSIONAL ACTIVITIES

12 The Technical Secretary introduced this Agenda Item, referring to the Report of the Third Session of the Committee (Document IOCINCWIO-III/3), Document IOCINCWIO-IV/6, as well as to Document IOCINCWIO-IV/7 (The IOC-SAREC Marine Science Programme 1990-1995: A Review) and Document IOCINCWIO-IV/7 Add. (The IOC- SAREC Marine Science Programme September 1995-April 1997).

13 In his report the IOC Executive Secretary noted the impressive increase of the number of marine scientists in the region from about 100 in 1989, to nearly 300 in 1996. Despite the ambitious number of actions, the IOC Executive Secretary noted with satisfaction that 84% of the IOCINCWIO-III high priority actions had been implemented during the intersessional period.

14 The IOC Executive Secretary drew special attention to the Western Ocean Marine Science Association (WIOMSA) which has great potential as a grassroots linkage between marine scientists, local communities, local and national governments and the international community. He noted with

satisfaction the success of the WIOMSA Marine Research Grants of which over twenty had been granted since 1995.

15 The Regional Committee took note of the Report of the Executive Secretary on intersessional activities with appreciation and endorsed it. The Committee expressed its appreciation for the substantial support received from SAREC of Sida (Sweden) who provided nearly US$ 1,000,000 during the intersessional period to the region through the IOC, and had also decided to continue its support until the end of 1999. The Committee also thanked Belgium for continuing support to RECOSCLX-WIO until 1999, as well as many other Member States and donors that had provided financial or technical assistance to the region during the intersessional including , amongst others, Belgium, Canada, France, Germany, The Netherlands, United Kingdom, United States, and the European Union.

16 In his statement, the Delegate of Germany referred to the support by Germany for the International Bathymetric Chart of the Western Indian Ocean (IBCWIO) through the provision of its Chief Editor. He also mentioned the recent cruises of the RV “Meteor” which carried out investigations in the region in relation to JGOFS, WOCE and OSNLR. The delegate informed the Committee of his Government’s support of the idea to establish an IOC Sub-Commission for the Indian Ocean with its own regional Secretariat in one of the Member States. Taking into consideration the interest of Germany in the further development of IOMAC with its Secretariat in Colombo, Sri Lanka, and in view of the Memorandum of Understanding, signed between IOC and IOMAC, he suggested Colombo as a possible location for the Sub-Commission’s Secretariat. A full version of the statement is added as Annex III-E.

17 The Delegate of France stressed that regional mechanisms are often the most appropriate ones to tackle numerous questions. Therefore IOCINCWIO, through its regional identity, offers such a framework. It is at the regional level and in accordance with priorities identified by the Member states that France wishes to participate and offer support. The capacity available at La Reunion, in particular at the University, or on remote sensing (Station SEAS-ORSTOM) can be widely requested by the Member States.

18 The Delegate of France also underlined the numerous and important direct support that France provides in the southwest region of the Indian Ocean to national or regional programmes regarding oceanography, exploitation of marine resources and integrated coastal zone management. He expressed the wish that those programmes and actions carried out with IOCINCWIO Member States, will clearly be taken into consideration by IOCINCWIO in the planning of its activities.

19 The Delegate of Kenya noted with appreciation the high rate of implementation of the IOCINCWIO-III work plan as compared to that of IOCINCWIO-II. He noted the suggestion by Germany with regard to an Indian Ocean Sub-Commission but regretted the absence of the IOCINDIO Chairman which would have provided an occasion to this discuss this matter. The delegate offered to host the Indian Ocean Sub-Commission’s Secretariat if the Sub-Commission were to be established.

20 The representative of UNEP, Dr. D. Van Speybroeck, briefed the meeting on recent developments in the Action Plan on the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region of the Regional Seas Programme of the Water Branch of the United Nations Environment Programme. He informed the meeting that the first meeting of the contracting parties of the Action Plan (17 - 18 March 1997, Seychelles) had approved the establishment of a Regional Co-ordinating Unit for the Nairobi Convention (EAF/RCU) in Mahé, Seychelles. The EAF/RCU, which is hosted by the Government of Seychelles, became operational in February 1997. The UNEP representative further briefed the meeting on ongoing global programmes with a regional delivery. He referred to the Global Programme of Action for the Protection of the Marine

Environment from Land-based Activities (GPA/LBA), the GEF project on the Preparation of a Transboundary Diagnosis Analysis and a Strategic Action Programme for the Marine and Coastal Environment of the Western Indian Ocean, the Global Plan of Action for Marine Mammals (MMAP), the International Coral Reef Initiative (ICRI), and the Global Environmental Outlook (GEO) project. The representative announced to elaborate on inter-agency collaboration under agenda item 6 (co-operation with other bodies) of the meeting. A full version of the statement is added as Annex III-F

21 The representative of the Commonwealth Secretariat expressed his organization's interest in closer collaboration with the IOC and its IOCINCWIO in view of the common interests and as a way to avoid duplication and to maximize the impact of our respective activities. The representative announced the planned development of the 'Commonwealth Ocean Resources Programme for the Western Indian Ocean' (CORP-WIO), which will focus on capacity building for the understanding and management of the ocean. He invited the IOC and its IOCINCWIO and other organizations to participate in this undertaking. A full version of the statement is added as Annex III-G

22 The Representative of WMO reported that in 1996 an International Buoy Programme for the Indian Ocean (IBPIO) was established as a regional group for the WMO/IOC Data Buoy Co-operation Panel (DBCP). The group includes participants from both the meteorological and oceanographic communities and has as its primary objective to co-ordinate and enhance the deployment and maintenance of a drifter network in the Indian Ocean. WMO strongly supports the IBPIO and oceanographic institutions are encouraged to participate in the provision of buoy deployment opportunities on research and merchant vessels. Further information to be found on the programme, homepage on the World Wide Web at: http://www.shom.fr/meteo/ibpio. WMO previously offered support for a proposed sea level project in the Indian Ocean. National Meteorology Services in the region have nominated focal points for the project and indicated their willingness to participate in the provision of meteorological data for interpretation of measured sea level changes. WMO assured members of the session the continuing interest in and support for the project, to the extent already indicated. The representative announced the recent establishment, as part of the IOC/WMO's IGOSS, an operational Ship of Opportunity Programme (SOOP) to maintain, on a long-term basis, a global network of ships deploying XBTs in support of GOOS and GCOS. He reported that a meeting of the SOOP Implementation Panel had taken place in Capetown, South Africa in April 1997. He invited the IOCINCWIO Member States to participate in the programme through the identification and maintenance of Ships of Opportunity for which the XBTs, launch equipment and training maybe provided externally. The representative also informed the Committee of the plans by IOC and WMO to develop a regional project in the Western Indian Ocean region which will constitute a cost -effective means to provide marine data and services by combining resources and expertise of the meteorological and oceanographic communities in the region. A first joint IOC/WMO planning meeting for the project will take place in Mauritius, 20-22 May 1997. A full version of the statement is added as Annex III-H

23 The Representative of the United Nations Economic Commission for Africa recalled the objective of his organization which is to assist Governments in Africa in formulating economic strategies and policies with special regard to food security. He stressed the importance of fisheries within African economic and social systems and informed the Committee that ECA activities aim at developing artisanal fisheries and aquiculture as well as at improving the management and planning of fisheries resource use. He finally insisted on the need for co-operative action in the region in the field of training, research, technology and legal aspects. A full version of the statement is added as Annex III-I

24 The Representative of the Land-Ocean Interaction in the Coastal Zone (LOICZ) project provided a review of LOICZ activities in Africa. He mentioned the ' LOICZ in Africa' meeting which was held in Nairobi, 1994. He also reported on the LOICZ meeting which was held in April 1997. He invited the

Member States to identify programme nodes in the region.

4. PROGRAMME ACTIVITIES

4.1 OCEAN SCIENCES: REGIONAL PERSPECTIVES

4.1.1 Ocean Dynamics and Climate

25 The Chairman introduced the item referring to Resolution XVIII-6, adopted during the Eighteenth Session of the IOC Assembly, which urged Member States to support climate related activities in their national programmes and to ensure proper international co-ordination through the IOC and other appropriate bodies.

4.1.1.1 JGOFS

26 Dr. Okemwa introduced the item by referring to the report of the 'Joint IOC-JGOFS panel on carbon dioxide, Sixth Session' which was held in Puerto Rico, 1996, as well as to IOC Manuals and Guides No. 29 'Protocols for the Joint Global Ocean Flux Study (JGOFS) core measurements. He reported that a JGOFS Training course, included in the IOCINCWIO-III work plan, had taken place in 1993 in Mombasa, Kenya. In that meeting it was agreed that research vessels, planned to visit the region between 1994 and 1996, would take on board IOCINCWIO Member State scientists. It was regretted that this had not happened,

27 Dr. Okemwa noted that the planned Group of Experts on ODC had not been established during the Intersessional and invited the Committee to revisit this issue in the IOCINCWIO-IV work plan.

28 Mr. Odido, Rapporteur of the *Ad Hoc* Working Group on ODC then provided a report on the discussions of his Group. It was noted that most of the international programmes such as JGOFS have been discussed during various meetings but that little action has been taken. The Regional Committee recognized the importance of long term monitoring of all oceanographic parameters as a basis for participation in such programmes. With regard to JGOFS in particular the Regional Committee felt that one of the main priorities is the improved accessibility to data and information (such as experiments carried out, methods used and results obtained) from these programmes.

4.1.1.2 TOGA Data Dissemination

29 Mr. Odido, Rapporteur of the *Ad Hoc* Working Group on ODC, reported that RECOSCIX-WIO has obtained copies of various ocean data CD-ROMs and that data sets relevant to the IOCINCWIO region have been extracted. These will be included in the RECOSCIX-WIO CD-ROM which will be distributed free of charge to institutions in the region. He announced that a preview of the CD-ROM will be organized during the Session. He also reported that France's SISMER (IFREMER, Brest) has made a complete data set of TOGA data available on the World Wide Web. France's ORSTOM station in Seychelles will soon load sets of XBT, O_2 and nutrient data on the World Wide Web. Mr. Odido informed the Committee of the availability, free of charge, of the computer software GAO (Gestionnaire d'Applications Océanographiques) through ORSTOM.

30 The Regional Committee noted with appreciation the TOGA-related services and products provided by RECOSCIX-WIO, SISMER and ORSTOM.

4.1.1.3 Oceans and UNFCCC

31 The Chairman introduced this item referring to Document IOCINCWIO-IV/9. Discussions on this item will be reported under Agenda Item 4.2.2

4.1.1.4 WOCE

32 This item was discussed under Agenda Item 4.2.2.

33 The Regional Committee stressed the need for visiting expeditions to include scientists from the region in the planning as well as implementation and analysis stages of the expeditions.

34 The Regional Committee encouraged Member States in the region to develop long-term monitoring programmes as a solid basis for participation in international projects such as JGOFS.

35 The Regional Committee requested that a Group of Expert on Ocean Dynamics and Climate should be established in the region in order to stimulate oceanographic research, and in particular to address the analysis and interpretation of data collected in the region from global programmes such as JGOFS, TOGA and WOCE.

4.1.2 Ocean Science in Relation to Living Resources (OSLR)

4.1.2.1 Harmful Algae

36 The Chairman introduced this item referring to Document IOCINCWIO-IV/10 'A Proposal for Harmful Algae Research in the IOCINCWIO region' . The IOC Secretariat, through Mr. Barbière, provided information on the IOC Science and Communication Centre on Harmful Algae in Copenhagen, Denmark. Mr. Barbière stated that the Centre should be considered by the region as a resource for training and information related to harmful algae. He also referred to the IOC-SAREC-DANIDA training course, which was held in Mauritius, 1996 where it was recommended that the course should be followed up by a more advanced and specialized training activity. Support for individual training and upgrading of microscope facilities were identified as requirements. The project proposal detailed in Document IOCINCWIO-IV/10 proposes to establish a regional network of harmful algae researchers in the IOCINCWIO region and thus to (i) enhance research capability in the region; (ii) produce a guide for the identification of potentially harmful marine microalgae in IOCINCWIO coastal waters.

37 The Representative of the Indian Ocean Commission informed the Committee of activities related to harmful algae research, in particular dinoflagellates, as part of the COI/UE programme, and implemented by La Réunion. She invited the Member States in the region to make use of the experience gained in this project.

38 The Delegate from Madagascar reported that toxic blooms had been a regular problem in his country since 1994 and that there exists an urgent need to investigate this problem in Madagascar. He noted that a scientist from CNRO had participated in a course in Copenhagen, but that lack of equipment in CNRO had prevented the application of the acquired knowledge.

39 The Chair of the *Ad Hoc* Working Group on OSLR, Dr. Ngoile, then reported on the discussions of his Group. Cases of ciguatera poisoning have been reported in Madagascar, La Réunion and Mauritius, and potentially toxic species have been observed in some mangrove areas in Kenya. The Island States are in the process of conducting a feasibility study of a monitoring project of algal blooms including the

development of taxonomic keys. However, data on harmful algae are insufficiently available for the mainland countries. The Group proposed that (i) a baseline monitoring programme should be established encompassing all microalgae, not limited to harmful algae, as this will contribute to biodiversity research; (ii) a manual including identification keys and methodologies be developed; (iii) a training course be organized for participants from the mainland States inviting local experts from the Island States as trainers. This will constitute a case of South-South co-operation. The Group further recommended that data should be collected as soon as possible in order to present during IOCINCWIO-V, planned for 2001.

40 The Regional Committee recommended that the project proposal as detailed in Document IOCINCWIO-IV/10 should be modified by the IOC Secretariat to reflect the recommendations made by the Group. The Regional Committee also called attention to the need to assess the unknown impact of harmful algae on human health including awareness campaigns, for the benefit of the coastal communities in particular. The Regional Committee recommended that a regional co-ordinator be identified for the project to ensure timely implementation of the programme

41 The Regional Committee endorsed the project proposals with its modifications.

4.1.2.2 Marine Biodiversity

42 *The* Chairman introduced this item referring to Document IOCINCWIO-IV/l2 ‘Identification of Priority Actions in the Field of Marine and Coastal Biodiversity in the IOCINCWIO region’.

43 The Regional Committee stressed the need to integrate biodiversity into the on-going research projects in the region.. The Regional Committee recommended that a database be established and that scientists need to be encouraged and assisted to contribute information on biodiversity of the different species in the database, and noted that data obtained within the framework of the GCRMN could easily be included in the database, as could the data on algae (including harmful algae). The Regional Committee recommended that the database be maintained by the RECOSCIX-WIO project.

44 In order to address biodiversity, specialists (taxonomists) need to be identified. National co-ordinators also have to be identified for biodiversity related activities. The Regional Committee stressed the importance of capacity building and recommended to undertake a desk study to assess the level of biodiversity capacity in the region.

45 Mr. Barbiere informed the Regional Committee about the existence of the UNESCO-IOC Register of Marine Organisms (URMO) which could provide a tool for building up database of marine organisms in the region using internationally agreed taxonomic terminology.

46 The Regional Committee underlined the need to make use of the work done by other programmes such as the ICRI and GCRMN, in order to co-ordinate activities.

4.1.2.3 *Recruitment and Stock Assessment*

47 *The* Chairman introduced this item referring to the recommendations of the First Session of the IOC-FAO Group of Experts on Ocean Science in Relation to Living Resources for the IOCINCWIO Region (Mombasa, Kenya, 13-17 September 1994). The Group of Experts recognized the failure of fisheries management measures due to lack of understanding of the interactions fish-fish, fish-fisheries and fish-environment.

48 The Regional Committee emphasized that fisheries are of high importance to the Member States and noted that the IOC Regional Committee for the Central Indian Ocean (IOCINDIO) had done the same during their Second Session recently.

49 The Regional Committee noted that, in order to understand fish stocks and recruitment, sufficient knowledge must be acquired about the physical environment, oceanographic conditions, trophic linkages, etc. and that this is where the IOC programmes can contribute substantially. The Regional Committee concluded that ecosystem management methodologies should be applied to fisheries.

50 The Delegate of the Seychelles reported on the co-operation with FAO in terms of providing assistance in the development of fishery management Plan. The Regional Committee expressed its appreciation for the support provided by FAO in this regard.

51 The Regional Committee stressed the need to promote interactions between the scientific and local communities as the latter have extensive knowledge on traditional management techniques.

52 The Delegate from France reported that the Indian Ocean Commission implemented a 'Projet Thonier Regional' from 1987 to 1996 aiming at promoting fishery, and oceanographic data exchange and analysis, including stock assessment, Countries involved are Comores, La Reunion, Madagascar, Mauritius and Seychelles. He also announced that the Indian Ocean Tuna Commission has been setup in 1996 with its Secretariat in Seychelles.

4.1.2.4 Inventory of Critical Habitats

53 This item was introduced by the Chairman by referring to Document IOCINCWIO-IV/l1 'Project Proposal: Mapping Seagrass Beds from Satellite Images in the IOCINCWIO Region for Management Purposes'. The project is an IOC-UNEP extension of UNEP's EAF/14 project entitled 'Eastern African Coastal and Marine Environment Resources Database and Atlas Project' and will make use of the digital satellite imagery acquired for that project which cover Kenya and northern Tanzania.

54 The Regional Committee noted with appreciation the objectives of the project proposal but commented that the budget was too limited. It was also recommended that the satellite images provided by UNEP should be used for the identification of other critical habitats such as mangroves and coral reefs as part of a multi disciplinary approach.

.55 The Regional Committee recommended that the methodology, training and expertise which is planned to be obtained for the project be made available to all IOCINCWIO Member States.

56 The Representative of the Indian Ocean Commission noted that the proposed activities are most relevant, but to some extent overlapping, with those planned by the Indian Ocean Commission within the framework of the Regional Environment Programme (Programme Régional Environnement). This programme focuses on (i) monitoring of coral reefs; (ii) ecotoxicology; and (iii) the development of an environmental information system.

57 The Regional Committee recommended the development of common tools and methodologies and noted that this could best be achieved by the setting up of a regional co-ordinating mechanism such as the one recently created as a follow-up to the Nairobi Convention and established in Seychelles.

58 The Delegate of France announced that the training materials which had been used for the IOC Training Course on the use of Satellite Images (Nairobi, 1995) could easily be summarized into a manual-type publication. This could be combined with additional material of a course on the extraction and analysis of Satellite Images which will be held in La Reunion in June 1997. He also underlined the capacity of the SEAS station based in La Réunion as a potential organizer of relevant training courses. He also pointed out the possible use of low cost technologies such as ULM (ultra light aircraft) for mapping of shallow coastal areas such as lagoons and reefs.

59 The Delegate of Kenya thanked Belgium for its support to the EAF/14 project. He noted the need to map beach areas as this would contribute to the monitoring of coastal change.

60 Mr Barbière provided an overview of the latest developments related to the Global Coral Reef Monitoring Network (GCRMN), and in particular the establishment of a sub-regional node in Mauritius (at the Indian Ocean Commission). A second regional node is being identified for the mainland States.

61 The Regional Committee called for national institutions in the region to participate actively in the GCRMN, and recommended the establishment of a regional mechanism to co-ordinate the activities of the national and sub-regional nodes.

4.1.2.5 Large Marine Ecosystems (LME)

62 The item was introduced by the Chairman by referring to the First Session of the IOC-FAO Group of Experts on Ocean Science in Relation to Living Resources for the IOCINCWIO Region (Mombasa, Kenya, 13-17 September 1994), the International Symposium and Workshop on “Status and Future of Large Marine Ecosystems (LME) of the Indian Ocean (Mombasa, 1993) and to the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (Paris, 23-24 January 1997).

63 It was noted that two LMEs have been identified in the region: (i) the Somali Current (which covers Comores, Kenya, Somalia and Tanzania); and (ii) the Agulhas Current (which covers Madagascar, Mozambique and South Africa).

64 The Regional Committee recommended that the Mascarene Plateau be recognized as an LME including La Réunion, Madagascar, Mauritius, and Seychelles.

65 It was reported that, as a follow-up to the 1994 GE-OSLR meeting, a proposal had been prepared for the Somali Current LME, in co-operation with IUCN for submission to the GEF through UNDP. However, this proposal has meanwhile been overtaken by a UNEP proposal which has received favorable consideration from GEF.

66 The Regional Committee was informed of a planned 3-year expedition (shoals of Capricorn) starting in March 1998, covering the Mascarene Plateau, organized jointly by the Royal Geographical Society of the United Kingdom, the Royal Society, and the British Geographers Institute. Seychelles and Mauritius are participating in the planning and implementation of the project.

67 The Regional Committee emphasized the importance of scientists from the region taking part in this expedition as this would provide an opportunity for the better understanding of the Mascerene Plateau LME.

68 The Regional Committee adopted Recommendation IOCINCWIO-IV.1

4.1.3 Ocean Mapping; IBCWIO

69 The Chief Editor, Prof. W. Bettac, provided a report on intersessional activities related to the IBCWIO. Prof. Bettac informed the Regional Committee that the Editorial Board for IBCWIO had met in Zanzibar, Tanzania between 3 and 8 October, 1994.

70 The Editorial Board is now composed of representatives from France, Germany, Kenya, Mauritius, Mozambique, South Africa, the Russian Federation, Tanzania, United Kingdom and United States and, *ex officio* IHO and IOC. The Board had not been able to attract participation from Madagascar and Somalia.

71 The Delegate of Madagascar expressed his intention to take up the matter of Madagascar's membership.

72 The Chief Editor reported that the sheet Assembly diagram for the IBCWIO now consists of a network of 21 sheets which corresponds with an increase of three sheets. He announced that the plotting sheets together with the collected depth figures on CD-ROM, will be distributed before the end of May 1997, and that the first charts of the IBCWIO will be printed in 1998. The next Session of the Editorial Board for the IBCWIO is planned to take place in September or October 1997.

73 The Committee adopted Resolution IOCINCWIO-IV/1.

4.1.4 Ocean Science in Relation to Non-Living Resources (OSNLR)

74 The Chairman introduced the item by referring to Document IOCINCWIO-IV/16 'Summary of the State of Implementation of the OSNLR Pilot Study relative to Coastal Erosion of the Western Indian Ocean Region'.

75 Dr. Claude Latouche, IOC Consultant for OSNLR, briefed the Regional Committee on the objectives of the OSNLR programme. He recalled that this IOC/UN(DOALOS) programme is aimed at providing guidance to Governments on planning of programmes for the rational management of the potentially valuable non-living resources such as the coastal zone which should be considered as a ressource in its own right (CZAR concept).

76 He stressed that the main focus of the OSNLR programme in the region is on coastal changes, and that as a result of the Coastal Change Conference (Bordomer, Bordeaux, February 1995), and the IOC-UNEP-SAREC planning workshop on Integrated Approach to Coastal Erosion, Sea Level Changes and their Impacts (Zanzibar, January 1994), it was decided that a 'Regional Manual on Guidelines for Assessment, Interpretation and Management of Coastal Changes for the Western Indian Ocean and Island States' should be developed.

77 Mr. K.K. Kairu then provided details on the status of development of the regional manual. He informed the Committee that the Manual was being developed jointly by experts from Comores, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania. Mr. Kairu reported that the first draft of the Manual is ready and has been sent to the participating Member States for comments. He noted that additional chapters would be added on the use of modem technologies for the monitoring of coastal changes, such as GIS, as well as on socio-economic aspects. A second draft of the Manual is planned to be prepared by the end of June 1997. This to be tested *in situ* before its publications.

78 The representative of UNESCO reported that the UNESCO Nairobi office had sponsored a survey on the socio-economic impact of coastal erosion along the Kenyan and Tanzanian coastline. The survey is targeted at government decision makers, tourism operators, hotel managers and other investors in the coastal area, and coastal communities including fishermen. He announced the organization of a National Seminar on Coastal Erosion, sponsored by IOC and UNESCO, in Mombasa between 23 and 25 June 1997. The Seminar is expected to attract over 300 participants. It will include presentations on the scientific aspects, the socio-economic survey, coastal erosion mitigation options including those currently applied by the Kenya Government, and on existing legislation. The Seminar will also include a field trip to illustrate the existing problem areas. It is expected that the Seminar will formulate strategies to mitigate the effects of coastal erosion in Kenya.

79 The Delegate of Seychelles informed the Committee that La Reunion through the Indian Ocean Commission is assisting Seychelles in a Beach Erosion Study (sediment transport), hydrodynamics studies and management.

80 The Representative of LOICZ reported that LOICZ is developing a global coastal typology database and that this information is available for sharing with the region.

81 *The* Representative of France pointed out that coastal sediments are of vital importance for island States as a construction material and accordingly this issue is part of national ICAM plans of Island States.

82 The Regional Committee stressed the importance of the study of shoreline change, as a pre-requisite of Integrated Coastal Zone Management (ICZM), with the following observations:

(i) there is a need for a common methodology in the assessment and monitoring of shoreline change;
(ii) geological and hydrodynamic techniques, as well as hydrological data can be used to recall as well as anticipate the impact of shoreline change;
(iii) it is essential to state the timescale of coastal change (seasonal, annual, pluri-annual, historical, geological);
(iv) socio-economic considerations should also be an integral part of the study.

83 The Regional Committee recommended the organization of a meeting, preferably before the end of 1997, in order to clarify, finalize, and adopt the Manual, and to agree upon the implementation of the common methodology in selected pilot study sites.

4.1.5 Marine Pollution

4.1.5.1 Regional Nutrient and Water Quality Monitoring Network Project

84 The Chairman introduced the item referring to Document IOCINCWIO-IV/19 ‘Coastal Monitoring in East Africa’, as well as to the IOC-SAREC Field Study Exercise on Nutrient in Tropical Waters (Mombasa, Kenya, 1994) where the expert group recommended to establish Base Line Stations under the GIPME/MARPOLMON Programme.

85 It was noted that institutions in the region have been contacted and invited to submit a project proposal for the monitoring of nutrients, sediment load and turbidity.

86 The Regional Committee invited the Member States, in view of the limited budget available for this activity, to prepare implementation plans for a period not exceeding two years, renewable. In those cases where nutrient studies have already been undertaken during the intersessional, the implementation plan should aim at long-term monitoring.

87 The Regional Committee emphasized the need for measurements of physical oceanographical and hydrological parameters, along with the monitoring of nutrients.

88 The Regional Committee agreed that the type of pollutants to be monitored in the Member States should be based on national priorities and available institutional and human capacity. The Regional Committee further recommended that monitoring programmes of heavy metals, pesticide residues and hydrocarbons should be preceded by a baseline study of 6-12 months. The baseline study should consider contaminant loads due to land-based sources such as river discharge, runoff from agriculture and municipal sewage, in line with the Global Programme of Action for Protection of the Marine Environment against Land-Based Activities (GPA-LBA), and the baseline study should be followed by a regional workshop on data quality control and inter calibration.

89 The Regional Committee recommended the initiation of studies on the bio-accumulation and bio-concentration of heavy metals, pesticide residues and hydrocarbons in marine biota.

90 The Regional Committee recognized the importance of marine debris as a pollutant and recommended the organization of a symposium of this subject in 1997.

4.1.5.2 International Musselwatch Programme

91 Reference was made to IOCINCWIO-III where the Regional Committee had recommended that a regional sentinel organisms monitoring programme be initiated, using oysters and modelled on the IOC-UNEP International Musselwatch Project. Due to other priorities this activity had not been implemented during the inter sessional.

92 The Regional Committee re-iterated the importance of the implementation of the mussel/oyster watch programme, and recommended that baseline studies on “Oyster watch” should be initiated for a period of six months, after which a workshop on inter calibration and data quality control should be organized. The Committee noted that because of some common aspects in the implementation of the water Quality Monitoring Project (see agenda item 4,1.5. 1), there should be coordination in the implementation of the bio-accumulation studies and the “Oyster Watch” programme.

93 It was observed that several laboratories have found it difficult to maintain equipment for marine pollution monitoring, especially the analytical equipment supplied through the EAF/6 UNEP project. This problem had been raised during the 3rd session of the Regional Committee. The Regional Committee recommended that future project proposals should include a budget for the maintenance of such key equipment.

4.1.6 Integrated Coastal Zone Management

94 The item introduced by the Chairman referring to Chapter 17 of Agenda 21 which recommended that coastal nations establish appropriate mechanisms for ICZM at both national and regional levels, prepare coastal management plans, adopt guidelines and build national capacity for the management of their coastal zones. He further referred to the 1993 Workshop and Policy Conference on Integrated Coastal Zone Management (Arusha, Tanzania), to the Seychelles Conference (October 1996), and to the

Madagascar and Comores ICZM workshops, supported by IOC. The Regional Committee was also referred to the GESAMP Report No. 61.

95 The Delegate from France informed the Regional Committee that three french institutions (IFREMER, ORSTOM and CIRAD) participate actively in the GREEN group (Groupe de renforcement des efforts environnementaux nationaux) which provides technical assistance to the environmental programme of the Indian Ocean Commission In particular, GREEN assists the General Directorate of the programme and the National Co-ordinators of the five COI Member States (Comores, Madagascar, Mauritius, La Réunion and Seychelles) in the development of: (i) national and regional environmental audits; (ii) standardized information and management information systems; (iii) ICZM pilot study projects; and (iv) sustainable coastal zone management plans for which a regional workshop will be organized between 12 and 15 May 1997..

96 The Regional Committee expressed its appreciation for the efforts made by, amongst others, SAREC of Sida, IOC, UNEP, the World Bank, FAO, the Indian Ocean Commission and the European Union in playing a catalytic role in the ICZM process and called for continued support for ICZM related capacity building activities.

97 The Regional Committee noted with satisfaction the high priority given by the Member States to ICZM, and welcomed the development of national ICZM plans.

98 The Regional Committee noted that many case studies have been undertaken during the inter sessional and encouraged networking of ICZM case studies, possibly through the RECOSCIX-WIO network.

99 The Regional Committee emphasized the need for scientists to provide information to, and interact with government policy makers, as a way to facilitate and strengthen the ICZM process.

100 The Regional Committee further noted that the study of shoreline change presently underway within the framework of the OSNLR programme is highly relevant to, and can provide a basis for ICZM.

4.2 OCEAN SERVICES AND GOOS: REGIONAL PERSPECTIVES

4.2.1 Regional Component of the Global Ocean Observing System (GOOS)

101 The Chairman introduced this item referring to Document IOCINCWIO-IV/9 ‘Activities in relation with GOOS capacity building and TEMA/CB’. He explained that the Global Observing System is a scientifically designed permanent, international system for gathering, processing and analyzing oceanographic observations, as well as for the development of data products.

102 The Delegate from Germany provided details on the discussions during the GOOS Awareness and capacity building workshop, held in Goa, India (18-19 November 1996). He noted that GOOS is composed of five modules including the coastal module, living resources module, climate module, health of the ocean module, and marine services module. As a first step towards developing national GOOS programmes and to provide focus as per national priorities, the Workshop had identified a ranking of GOOS module priorities for the IOCINDIO region: coastal, living resources, climate, health of the ocean and marine services. The report of the Workshop was submitted to IOCINDIO-II which was held immediately following the Workshop. IOCINDIO-II decided to set up an *Ad hoc* working group on GOOS which will work during the intersessional period.

103 The Representative of LOICZ proceeded providing a report on the 'Regional Partners in Marine Science workshop' which had been held in Mombasa, Kenya (1 0-14 March 1997). The objective of the Workshop was to draft a five year marine science plan as a contribution to the Coastal Zone Module of GOOS and the implementation of LOICZ activities in Africa. The Workshop identified the following draft content for the plan: (i) indicators of Ecosystem health and Sustainability in the Eastern Africa Coastal Zone; (ii) Freshwater-Seawater linkages; (iii) impact of Tana-Sabaki basin discharge in the coastal zone, a case study of Eastern Africa major rivers; (iv) history and prediction of geomorphological change in relation to coastal typology; (v) the relationships between the climate variability and coastal processes; (vi) possible cruise in the Eastern Africa region 1998. The Workshop set itself a deadline for the final report and science plan of 30 June 1997.

104 The Delegate from France announced that his country is now actively involved in merchant ship-based XBT observations, which are made available to GOOS through SISMER (Brest). He also announced that France and GOOS are launching a pilot project on ocean modelling for the Indian Ocean (MERCATOR) which is expected to be operational by the year 2001.

105 The Delegate from Seychelles informed the Regional Committee that purse seiners take random XBT profiles outside the merchant ship routes. He announced that ORSTOM-SFA expect to have XBTs permanently on about ten purse seiners, which will cover the WIO tuna fishing areas.

106 The Regional Committee recommended to organize a regional awareness workshop on GOOS.

107 The Regional Committee stressed the need for other ongoing oceanographic projects to feed their data into GOOS.

108 The Regional Committee requested Dr. Okemwa and Dr. Stel to prepare a work plan aimed at accelerating the process of GOOS implementation in the region,

4.2.2 Global Sea-Level Observing System (GLOSS)

109 The item was introduced by Mr. M. Odido, GLOSS Regional Co-ordinator. Reference was made to Document IOCINCWIO-IV/8 'Sea Level observation in the IOCINCWIO region' in general and to the included 'Proposed Project on Sea Level Data and Information in the IOCINCWIO region' in particular. In his report Mr. Odido mentioned that the GLOSS implementation plan had proposed the establishment of 17 sea level stations in the region. At the end of 1996, 9 of these stations were operational. During IOCINCWIO-III, the Regional Committee had endorsed the addition of another 15 stations. Of these, 5 are now installed and operational. It was pointed out that the capacity of maintenance of the gauges has been limited and needs attention.

110 The Representative of WMO announced that his organization has previously offered support for a Pilot Activity on Sea Level Changes. Meteorological services in the region had identified national focal points to participate in the project. The project aimed at the use of meteorological data for the interpretation of sea level changes. The Representative stressed the great continued interest in and support for the GLOSS project. However this is to the extent already indicated.

111 Mr. Odido explained the aim of the proposed project: to bring together and analyse all sea level data which have been collected in the Western Indian Ocean region with a view to identifying gaps in observations that need to be filled, and assessing variability of sea level and long term trends in the region.. The study will also include the preparation of a comprehensive report on the tide gauges which have operated in the region, the volumes and quality of data collected, bibliography of sea level literature

from and on the region, and what needs to be done to complete and improve the GLOSS Regional and National Networks.

112 Mr. Odido informed the Regional Committee that the sea level data are currently sent to the participating institutions on diskette, but are also available on CD-ROM (produced by IOC and the United Kingdom's PSMSL), or through the WWW (University of Hawaii). He also announced that a subset for the IOCINCWIO region would be included in the RECOSCIX-WIO CD-ROM.

113 The Delegate of Madagascar reported that his country maintains three sea level stations (Nosy Bé, Tuléar and Fort Dauphin). He noted that, whereas the stations in Nosy Bé and Tuléar are monitored regularly, the Fort Dauphin station is 2000 km away from Nosy Bé which is a great strain on financial resources. It was noted that this station could possibly be replaced by an automatic station relaying data by satellite.

114 The Regional Committee adopted the proposal, and noted that the project would play an important role in achieving the training needs of technicians and of maintenance requirements of the sea level measurement equipments in the region.

4.2.3 International Oceanographic Data and Information Exchange (IODE)

4.2.3.1 Data-exchange - ODINEA

115 This item was introduced by Mr. M. Odido referring to Document IOCINCWIO-IV/13 'Development of a Regional Ocean Data and Information Network for the IOCINCWIO region'. He recalled that during its Third Session, the Regional Committee stressed the need to (i) strengthen the national data management capacities; and (ii) develop a regional data and information network, noting that RECOSCIX-WIO could be adapted to serve these needs.

116 He reported that during the intersessional period several actions had been undertaken contributing to the development of a regional data exchange network. These included : (i) submission by Kenya of a draft project proposal for a regional ocean data and information network in the IOCINCWIO region (ODINEA) to the 15th Session of the IOC Committee for Oceanographic Data and Information Exchange (IODE-XV) (Athens, Greece, January 1996). The IODE Committee endorsed the project proposal and called on IOC Member States to provide support for its implementation; (ii) an expert mission to identify capacity in the region for collection, storage, analysis and interpretation of data in national institutions (1996). The mission concluded that there is limured amount of data which is stored in different media; (iii) establishment of a National Oceanographic Data Centre (NODC) at KMFRI, Kenya; (iv) issuing of IOC Circular Letter 1513 'Development of a Regional Ocean data Network in the IOCINCWIO region' (January 1997). In response to Circular Letter 1513, national co-ordinators were identified by France (La Réunion), Kenya, Mauritius and Seychelles. Tanzania confirmed the existence of a Designated National Agency (DNA) at the Institute of Marine Sciences, Zanzibar; hands-on training of data centre staff at KMFRI, Kenya (March 1997).

117 Mr. Odido then provided details on the project proposal ' Development of a Regional Ocean Data and Information Network for the IOCINCWIO region (ODINEA)'. The network shall:

- provide a regional co-operative structure linking national oceanographic data centres (NODC). This will ensure linkage of all scientists in the region to the data collected by national stations;
- ensure data involvement of national institutions in the IODE programme;
- adhere to the IODE data management procedures and ensure the use of standard methods for data collection and storage in the region;

- ensure access of scientists in the region to datasets not located in the region including satellite datasets;
- develop and disseminate data products for the benefit of scientists and policy makers in the region;
- establish exchange of data and information with the WDCs Oceanography.

118 The Delegate from UNEP emphasized the need for such a network to link with the already existing initiatives such as the EAF/14 project on an Eastern African Coastal and Marine Environment Resources Database and Atlas Project.

119 **The Regional Committee adopted the project proposal.**

4.2.3.2 Information Exchange: RECOSCIX-WIO

120 This item was introduced by Prof. L. Egghe, Project Co-ordinator of RECOSCIX-WIO. Reference was made to Document IOCINCWIO-IV/14 'RECOSCIX-WIO - Providing Scientific Information to Marine Scientists in the Western Indian Ocean region'. The RECOSCIX-WIO project was started in 1989 with the objectives to (i) provide marine scientists in the Western Indian Ocean region with bibliographical information (abstracts of publications, hard copies of documents, . ..). (ii) prepare and distribute various data-products relevant to marine sciences of the WIO region (directory of marine scientists, bibliography of WIO marine scientists, . ..). (iii) promote communication between WIO marine scientists and marine scientists of other parts of the world; (iv) publicize marine science of the WIO region in the WIO region and in other parts of the world; and (v) provide information equipment, software and training.

121 During its Third Session, the Regional Committee gave RECOSCIX-WIO a clearly expanded mandate to include both information and data in its terms of reference. Based upon the recommendations by IOCINCWIO-III, the Limburg University Centre (LUC), in collaboration with the University of Antwerp, and with advice from the IOC, submitted a new project proposal entitled RECOSCIX-WIO-11. The new project (January 1996- March 1999) proposed to continue the already established services and products, but added a new component: development of WWW and CD-ROM products containing information, metadata and data. The project was submitted to, and approved by VLIR and BADC with a budget of approx. US$ 250,000 over a period of three years. A counterpart project manager is provided by Belgium.

122 Prof. Egghe called the attention of the Regional Committee that as the usage of the project's services had come to exceed the planned targets, the project required additional funding for the next two years in order to maintain its current level of services and products. He also emphasized that alternative funding sources need to be identified after March 1999, when the Belgium support will terminate.

123 The Regional Committee was informed that the Western Indian Ocean Directory of Marine Scientists (WIODIR) has been included in the IOC's Global Directory of Marine (and Freshwater) Scientists (GLODIR), which has been launched in February 1997. The WIODIR will also be published in printed form (2nd Edition) by the IOC. It was noted that WIODIR will also be included in the RECOSCIX-WIO CD-ROM.

124 *The* Regional Committee was informed that within the framework of a joint IOC/RECOSCIX-WIO initiative, most Member States in the region are being provided with subscriptions to the CD-ROM version of the ASFA (Aquatic Sciences and Fisheries Abstracts) bibliographic database.

125 The Regional Committee recognized the importance and valuable services and products provided by the RECOSCIX-WIO project and thanked the Government of Belgium for the provided support.

126 The Regional Committee recommended that support be secured for the RECOSCIX-WIO project in order to maintain its services and products.

127 The Regional Committee stressed the need for e-mail facilities and an efficient and appropriate means of communications between the marine scientists in the region. In this regard it was regretted that RECOSCIX-WIO had not been able to assist at the regional level. The Technical Secretary recalled that the IOC had provided e-mail support to several IOCINCWIO Member States in 1995 and 1996.

128 The Regional Committee recommended that e-mail support be provided where necessary.

4.3 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED) AGENDA 21: FOLLOW-UP SUMMARY

4.3.1 ACC Sub-Committee on Oceans and Coastal Areas

129 This item was introduced by the Chairman. He reported that, following the 1992 United Nations Conference on Environment and Development (UNCED) the ACC Sub-Committee on Oceans and Coastal Areas was established. During its two first sessions (Rome, 1994; Geneva, 1995) agreements were reached between the Sub-Committee Members in regard to timely completion of its report for submission to the Fifth Session of the Commission on Sustainable Development (CSD) to be held in 1997. The IOC Executive Council, during its Twenty-ninth Session (Paris, 1996) agreed that the post-UNCED process in regard to implementation of Chapter 17 at the national level would be facilitated by the establishment and strengthening of national co-ordination mechanisms for ocean and coastal areas together with an appropriate interface amongst and between the various UN structures, in particular the Commission for Sustainable Development. The Executive Council strongly endorsed the role of the IOC in the ACC Sub-Committee and the related follow-up to UNCED, particularly the Global Programme of Action for Protection of the Marine Environment against Land-Based Activities (GPA-LBA).

130 The Regional Committee urged the Member States to actively participate in the follow-up to UNCED and re-emphasized the need for dialogue with other parts of society.

4.3.2 Follow-up to the International Conference on Small Island Developing States (SIDS), including relation to CSI

131 The Twenty-eight Session of the UNESCO General Conference approved the interdisciplinary project on coastal zones and small islands. The IOC Assembly, during its Eighteenth Session, through Resolution XVIII-7 welcomed this initiative. Subsequently the UNESCO Director-General established the Coastal Zones and Small Islands (CSI) unit under the Science Sector. The Director-General also established a management committee for the CSI project involving the directors of IOC, MAB, IHP, IGBP and MOST. The IOC participates in two specific pilot projects: one on Coastline Change in the IOCINCWIO region, and one on small island coastal zone management in the Caribbean. The former project is an integral part of the IOC OSNLR programme detailed under Agenda Item 4.1.4.

132 The Representative of the UNESCO Office in Nairobi, Dr. G. Kitaka recalled his statement made under Agenda Item 4.1.4 on a socio-economic survey and the planned National Seminar on Coastal Erosion.

133 Several delegates expressed their concern about the possible overlapping between UNESCO/ CSI and UNEP activities. The Regional Committee stressed the need for co-ordination between the different agencies active in the region.

134 The representative of the Indian Ocean Commission informed the Committee that a delegation of the Commission had visited the IOC Executive Secretary in Paris recently with the objective of initiating collaboration and co-ordination between the Indian Ocean Commission and the Intergovernmental Oceanographic Commission (of UNESCO).

135 The Regional Committee was informed that, following the ratification of the Nairobi Convention, a Regional Co-ordinating Unit had been established in Seychelles.

5. CAPACITY BUILDING - TEMA

5.1 CAPACITY BUILDING IN THE IOCINCWIO REGION

136 This item was introduced by Prof. Polk. The Regional Committee recognized that there is a need for both short and long-term courses in marine sciences but it emphasized that capacity building can only be realized when there is a strong linkage between education, infrastructure and research projects. The Committee recognized that there are different levels of capacity building addressing different needs e.g.. MSc courses address one level, short-term training courses and workshops another.

137 The Delegate of Germany stated that his country has regularly conducted IOC training courses in the Indian Ocean and Southeast Asian waters, in which many young scientists from African and Western Indian Ocean countries participated (e.g. Mombasa, 1993; Karachi, 1994; Dubai and ‘Meteor’, 1995).

138 The Regional Committee expressed its gratefulness to Germany for the support provided by Germany and looked forward to further assistance from Germany in this regard.

139 The Representative of the Kenya Belgium Project in Marine Sciences announced that the MSc. Course ‘Ecological Marine Management’ (ECOMAMA) has been approved for funding by the Belgian Government with a budget of US$ 3.6 million over a period of twelve years The course will have a duration of two years and will be organized in Belgium, hosted by the Free University of Brussels (VUB) and the University of Antwerp (UA).

140 The Regional Committee welcomed the establishment of the Course and thanked the Government of Belgium for its support.

141 It was observed that it may be appropriate to organize a MSc course at the regional level, combining the educational resources of the IOCINCWIO Member States. Emphasis was put on the use of local lecturers in this regard. In order to accommodate training requirements related to national or local priorities it was suggested to base the MSc programme on a core curriculum, complemented by optional courses. The course should be followed by a research projects to be undertaken in one of the student’s national institutions.

142 The Delegate from Comores observed that not all Member States in the region are at the same level of development with regard to capacity in marine science and that it is essential to identify the specific capacity building requirements of the individual Member States, and to provide support enabling

them to develop their capacities progressively.

143 It was noted that trainees cannot apply the acquired knowledge upon return to their home institutions due to lack of equipment. In this regard the Regional Committee noted with appreciation the provision of computer equipment to the trainees following the RECOSCIX-WIO librarian training course and considered this is an example of the linkage between education and equipment. The Regional Committee stressed the need to ensure the availability of necessary infrastructure as a follow-up to training activities.

144 The Regional Committee was informed of a 2-month field course , funded by Belgium, which will be organized in Kenya and will include students from Belgium, Eritrea, Ethiopia, Kenya, The Netherlands and Tanzania), Lecturers will be invited from Belgium, Italy, Kenya, South Africa, United States and Tanzania. After two years the course may be expanded to a regional FAME programme (Fundamental and Applied Marine Ecology).

145 The Regional Committee endorsed the course but called for the inclusion of economics, socio-economic and other ICZM related topics. The Regional Committee recommended the identification of funds for additional fellowships for students from the region for the field course.

146 The Regional Committee recommended that IOC should collaborate with the Commonwealth Science Council's CORP-WIO programme which utilizes research projects as a base for capacity building.

147 The Regional Committee recognized the bilinguality of the region and recommended that this should be built into the capacity building programmes.

148 The Regional Committee recommended that a continuous assessment should be made of the impact of reports, manuals and training tools on their target audience.

5.1.1 Feasibility Study of an 'Eastern African Journal of Marine Sciences'

149 Mr. M. Odido reported on the Feasibility Study of an 'Eastern African Journal of Marine Sciences' carried out by RECOSCIX-WIO and funded by the IOC. Reference was made to Document IOCINCWIO-IV/Inf. 3 ' Feasibility Study for Eastern African Journal of Marine Sciences'. The amount of research carried out in the IOCINCWIO region has increased dramatically in recent years. Although some results find their way to international journals, a substantial number of findings remain obscure in internal/technical reports. A study has been undertaken to assess the feasibility of an ' Eastern African Journal of Marine Sciences'. The recommendations of the study are: (i) the Journal should start as soon as possible...; (ii) the Journal should cover marine sciences only and should collaborate with the East African Journal of Tropical Hydrobiology and Fisheries (Kampala); (iii) the Journal should be published at least twice a year ; (iv) Sponsorship should be identified for at least two years after which self-sufficiency should be aimed for.

150 The Regional Committee expressed its concern with regard to the viability of the Journal in terms of attracting sufficient articles, and referring to the inability of marine science institutions to pay subscriptions to Journals. The Regional Committee recommended that more consultation be undertaken with existing (but possibly dormant) journals and requested Mr. Odido to proceed accordingly.

5.2 WIOMSA

151 The Chairman introduced this item referring to Document IOCINCWIO-IV/17' Western Indian Ocean Marine Science Association (WIOMSA)' and invited the WIOMSA Chairman, Dr. M. Ngoile to report on the Association. The full report is available as Annex III-J

152 The Western Indian Ocean Marine Science Association (WIOMSA) extended its deep gratitude to IOCINCWIO for endorsing the establishment of the Association and for according the Chairman of WIOMSA liaison function between the Association and the Committee. WIOMSA also thanked the donor agencies e.g. Sida-SAREC and IOC for providing support to the Association. WIOMSA expressed special appreciation to the IOC Secretariat for providing the administrative backstopping related to the WIOMSA Marine Research Grants, and for the support provided for the WIOMSA Scientific Seminar, Board of Trustees and General Assembly.

153 Recognizing the importance of sustaining the use and conservation of the marine resources of the Western Indian Ocean region, WIOMSA is actively participating in the building of marine science and technological capability of the WIO region by focusing on the following activities: (i) improving communication among the scientific community of WIO states; (ii) assisting in the development of institutional linkages within the region; (iii) defining and developing research into problems which may require a national and/or regional approach to their solution; (iv) identifying workable mechanisms for the coordination of marine science research and development within the region; (v) strengthening the awareness of marine sciences research and its importance in the development and management of the marine sector of WIO states; (vi) fostering the linkage between policy/management, science and stakeholders (community, NGOs, and private sectors); and (vii) development and management of marine research grant programme. The Regional Committee noted with appreciation the complementarily between the IOCINCWIO and WIOMSA objectives which are mutually reinforcing.

154 During the period 1994-1997, WIOMSA focused its activities on : (i) promote membership to the Association; (ii) promote networking amongst its membership. This was achieved through nomination of national coordinators, improved e-mail communication, production of WINDOW newsletter and WIOMSA Newsbrief; (iii) establishment of partnerships with international organizations; (iv) convening of meetings on specific issues; (v) collection of scientific information through MARG programme; and (vi) provision of scientific advice for management to member states.

155 The WIOMSA Chairman then reported on the First WIOMSA Scientific Symposium which was held in Mombasa, Kenya on 2 and 3 May 1997. The main theme of the Symposium was "Advances in Marine Science in Eastern Africa: Application of Scientific Knowledge in Marine and Coastal Management". In line with this theme, the objectives of the Scientific Symposium were: (i) assessment of scientific information in relation to coastal and marine management; (ii) critically examine the MARG programme and provide recommendations as to how the Programme could be strengthened from the perspective of individual grantees as well as the overall coverage and focus; and (iii) to increase awareness of the MARG Programme.

156 The workshop brought together approximately fifty participants from eight countries in the Western Indian Ocean region (Comoro, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Tanzania and Reunion), as well as other participants from countries such as Sweden, Nigeria, Germany, France, UK, and Belgium and representative from international organizations such as IOC of UNESCO and Sida-SAREC.

157 The Symposium acknowledged and commended the production of WIODIR by RECOSCIX-WIO and Marine Science Country profile (MSCP) as tools for assessing capacity in marine sciences in the region. However, in order to match and identify gaps, the Symposium recommended that an assessment of capacity requirements on existing projects and programmes be undertaken. Efforts should be made to direct research towards tapping indigenous knowledge and experience in resource use and management. There is a need for producing periodic documents on the state of marine and coastal environment of the region which should be based on assessment and synthesis of existing information, for better management advice and future research work. This will avoid duplication.

158 The Symposium recognized the need to promote research aimed at assessing "carrying capacity" and/or "resilience" of ecosystems and their response to pressures generated by natural forces and human activities. This should be achieved through granting of MARG to inter-disciplinary teams comprised of scientists examining a) condition of habitats, b) Environmental pollution and c) the resource users (management systems and socio-economics). Furthermore, concentrate an amount of research on a long-term basis in specific study sites to promote integrated research programs in areas reflecting regional issues as well as provide the basis for development of predictive models.

159 Significant development activities along the coast and nearshore waters such as mariculture and waste disposal systems, require oceanographic information in order to rationally manage them. The Symposium therefore recommended that research efforts concentrate in the coastal zone. However, every effort should be made for the experts from the region to participate in research cruises organized in the region including the planning for these cruises. This is in the realisation that the region does not have a dedicated regional oceanographic research vessel. The externally supported cruises should take cognizance of the deep sea water priorities set by regional processes in WIO.

160 The Symposium noted the significant contribution made by MARG and strongly recommended its continuance. Increasing the source of funds for MARG is crucial.

161 The WIOMSA Chairman reported that the Board of Trustees had met on 4 May 1997 in Mombasa, Kenya. The Board, following elections is now composed of: Dr. E. Okemwa (representing the Mainland States), Prof. A. Semesi and Dr. J. Francis (for the host country Tanzania), Dr. N. Shah (representing the Island States), and Prof. O. Linden and Dr. M. Ngoile (free seats). Dr. Ngoile announced that he would resign as Chairman of the Association.

162 Finally, Dr. Ngoile reported on the WIOMSA General Assembly which met on 5 May 1997. During its meeting the WIOMSA General Assembly recognized and endorsed the 1997 International Year of the Reef and the 1998 International Year of the Ocean and recommended: (i) the preparation of a poster on coral reef research and conservation in the Western Indian Ocean region; and (ii) the compilation of a directory of activities in the region related to the two events, and their presentation in the WIOMSA Newsbrief and WINDOW Newsletter.

163 The Regional Committee recommended that WIOMSA's activities and Marine Research Grants (MARG) be more equally distributed amongst the all IOCINCWIO Member States.

164 A full statement of the WIOMSA Chairman is attached in Annex III.

16.5 **The Regional Committee adopted** Resolution IOCINCWIO-IV.2.

5.2.1 Marine Science Country Profiles

166 Dr. Julius Francis, Member of the WIOMSA Board of Trustees, provided information on the Marine Science Country Profiles (MSCP). Included in the IOCINCWIO-III Workplan, the MSCP is a tool designed to assist individuals, local and international organisations and governments, in making informed decisions regarding allocation of funds to marine sciences programmes, and identification of programmes to be undertaken. It provides an overview of infrastructure in terms of facilities, training and education which may be required to support proposed programmes. In short, the MSCP is supposed to reveal the true picture of the marine sciences in a country, with respect to the available resources (e.g. personnel, facilities, etc.) as well as strengths and deficiencies in the national marine sciences capabilities. As a joint WIOMSA-IOC project funded by IOC, MSCPs have been planned in 1997 for Comores, Kenya, Madagascar, Mauritius, Mozambique, Seychelles and Tanzania. Except for Mozambique first drafts of all MSCPs were received and were submitted to the Regional Committee as Document IOCINCWIO-IV/Inf. 4, Inf. 5, Inf. 7, Inf. 10, Inf. 6 and Inf. 8 respectively.

167 The Regional Committee was invited to review the Marine Science Country Profiles for their respective countries, consult with the authors and provide WIOMSA with a final draft by the end of June.

5.3 METHODS AND TECHNOLOGIES: PREPARING FOR THE 21ST CENTURY

168 This agenda item was introduced by P. Pissierssens of the IOC. Since the first Session of IOCINCWIO the region has made substantial achievements in human and infrastructure capacity building. As for IOC-supported human capacity building activities these mostly concerned group activities (workshops and training courses). This has created a wide base of competence in the region. However, it must be recognized that training and education must be a continuous process. As such one-shot training activities are insufficient. On the other hand it must be appreciated that the scope of the IOCINCWIO workplan has continued to increase, whereas the available funds, both at the national and regional level have not increased accordingly. Often therefore, it has been observed that no continuity could be achieved in training exercises for particular fields. As funds are not likely to increase in the foreseeable future we must therefore consider ways and means to strengthen training efforts at minimal cost. new technologies such as CD-ROM, Internet or video could be affordable alternatives to group training as far as update training is concerned. In this regard reference is made to the RECOSCIX-WIO CD-ROM project as well as to Distant Learning projects.

169 The Regional Committee recommended the organization of a survey to assess available modem technology training tools relevant to required capacity building activities and ongoing research programmes.

5.4 UNCLOS AND RELATED TECHNICAL CO-OPERATION AND TECHNOLOGY TRANSFER

I 70 Mr. Barbiere of the IOC introduced this item by referring to latest development of UNCLOS. He reported that the International Seabed Authority, the Secretariat of the authority together with its Secretary general have now become fully operational, and that the programmes identified by the authority cover the study and assessment of the impact of the activities in the international sea bed area of the marine environment, and also the reduction and control of pollution of the marine environment from the activities in the area, as well as related marine scientific research and monitoring. Those programmes promises broad aspect of cooperation between the IOC and the Authority. He informed the Committee that IOC and the International Hydrographic Organization (IHO) had been invited to prepare a review on science and technology associated with the continental shelf definition under UNCLOS.

171 He reported the establishment of an International Working Group on IOC's Possible Role in Relation to UNCLOS which should submit its final recommendations at the 19th Assembly of IOC. Recommendations emerging from the progress report of the Working Group advised that IOC regional subsidiary body such as this one should be invited to assist coastal states in formulating national legislations, rules and administrative practices. Another example of recommendations, is the promotion of specific cooperation between IOC and the Scientific group of the London Convention 1972 in the development and updating of scientific guidelines on dumping. This work could be done within GESAMP. Cooperation has also been requested by IMO and UNEP in studying the dynamics and impact of the foreign species to ecosystem and biodiversity and provide scientific information for management.

172 The Regional Committee recommended that activities to publicize UNCLOS should be carried out in the region, especially in the framework of the 1998 International Year of the Ocean.

6. CO-OPERATION WITH OTHER BODIES (e.g. IOCINDIO), PROGRAMMES, DONOR AGENCIES AND REGIONAL ORGANIZATIONS

173 The Chairman introduced this item. On request of the Secretary general of the Indian Ocean Marine Affairs Co-operation (IOMAC), Dr. Giermann drew the attention of the Regional Committee to the fact that a Memorandum of Understanding (MOU) had been signed between IOC and IOMAC, and that as a first example of the new co-operation, a joint IOC/IOMAC/Germany training course on coastal and near-shore geology was held in Karachi, Pakistan, in November 1994. He reported that the course was also attended by trainees from Kenya, Mauritius, and Mozambique. He also informed the Regional Committee that during the Second Session of IOCINDIO in Goa (November, 1996), IOMAC tabled a project proposal entitled "Management of the Indian Ocean Environment: Identification of Priority Areas and programmes of Concerted Action in the Context of Integrated Regional Management of Marine and Coastal Biodiversity, and Prevention and Protection of Pollution of International Waters." The project is regional in scope and will be implemented by the individual countries of the Indian Ocean. He reported that the project will be submitted to GEF for Programme Development Funds and that IOCINDIO had agreed in principle to endorse the proposal and that, IOCINCWIO will also be invited to consider the project once the text of the proposal will be available.

174 The Delegate of Kenya informed the Regional Committee that his country supported this proposal and that a national reviewing panel had approved it.

175 The Chairman referred to Document IOCINCWIO-IV/15 'Co-operation between the IOC and WMO'. He informed the Regional Committee with regard to the project proposal for the establishment of a 9 month post-graduate course in marine meteorology and physical oceanography for marine meteorologists and physical oceanographers of African countries and island states of the Western Indian Ocean. The proposal has been submitted to UNDP, other donors and Member States of WMO and IOC. However, no substantive response has been forthcoming from any agencies or other countries despite many reminders and appeals at various fora. This issue will again be discussed at the first WMO/IOC Implementation Planning Meeting for the Enhancement of Marine Services in Southern and Eastern Africa. (Mauritius, 20-22 May 1997). A proposal to modify the approach so as to conduct part of the course by distant learning has been made. This will cut down on expenses. There is hope that with the preparation of a new budget on this basis, the course could be implemented. He recalled that WMO and IOC have already organised two workshops in collaboration with other organizations (the IOC-SAREC-KMFRI regional workshop on causes and consequences of sea-level changes on the Western Indian Ocean Coasts and Islands (Mombasa, June 1991); and the IOC-UNEP-WMO-SAREC planning workshop on an integrated approach to coastal erosion, sea-level changes and their impacts (Zanzibar,

January 1994) as contributions to minimize negative impacts on coastal development. CMM during its 12th session (Havana, March 1997) has appointed a rapporteur on coastal monitoring and services to consider all relevant aspects of coastal problems. The Chairman informed the Regional Committee on the development of an Indian Ocean Drifting Buoy Programme with the purpose of obtaining oceanographic data such as sea-surface temperature and ocean current, and meteorological data such as atmospheric pressure and air temperature in the data sparse region of the Indian Ocean. He stressed that the data will be very beneficial for many research and operational purposes in the region. He then outlined a number of areas where both WMO and IOC could collaborate in order to provide guidance and assistance to Member States, such as coastal marine activities, marine pollution, living resources, GOOS, sea-level rise and Climate Change activities.

176 The WMO representative emphasized the importance of having a postgraduate training course on marine meteorology and physical oceanography in the region and he invited Member States and international organizations to contribute to the implementation of such a course. He called for even closer cooperation between IOCINCWIO and WMO. WMO supports the general thrusts and conclusions of Document IOCINCWIO-IV/15.

177 The Regional Committee noted with appreciation the collaborative efforts that IOC and WMO had undertaken in the region.

178 The Regional Committee supported the proposal of the regional post-graduate course on marine meteorology and Physical oceanography, stressed the need to review its curriculum since the initial programme of the course was drafted in 1989, ensuring involvement of all IOCINCWIO Member States, and recommended that Member States be consulted in its preparation.

179 The Regional Committee considered that the merging of the IOCINDIO and IOCINCWIO regional bodies into an Indian Ocean Sub-Commission was not desirable at this time. The Committee stressed that IOCINCWIO constituted a coherent geopolitical body, and that all its Member States had ratified the Nairobi Convention, providing a framework for sustainable development of the region's coastal areas.

180 The Regional Committee recommended the establishment of linkages between the IOCINCWIO and the newly established Regional Coordinating Unit (EAF/RCU), which is hosted by the Government of Seychelles at St. Anne island, Mahé, Seychelles, following the first meeting of the contracting parties of the Nairobi Convention.

181 The Regional Committee stressed the need to take into account several regional GEF initiatives as closely related to the implementation of the Action Plan of the Nairobi Convention..

182 The Regional Committee recommended the establishment of a project information database as a co-ordination tool providing details on the content, functioning, and development of on-going regional/national projects and programmes related to coastal areas. The database would be developed by the Regional Coordinating Unit (EAF/RCU) in the Seychelles in co-operation with the RECOSCIX-WIO Project.

183 The Regional Committee encouraged the development of a co-operation agreement between IOC and the Indian Ocean Commission, as well as between the Indian Ocean Commission and UNEP.

184 The Regional Committee supported further co-operation between IOC and the Commonwealth Science Council, and although not represented at this Session, with the AUPELF-UREF

(Association des Universités pour l'Enseignement en Langue Française).

7. 1998 INTERNATIONAL YEAR OF THE OCEAN

185 The Chairman introduced this item by referring to Document IOCINCWIO-IV/Inf.1 ' 1998 International Year of the Ocean' as well as to Document IOCINCWIO-IV/Inf.2 'Pan-African Conference on Sustainable Integrated Coastal Management (PACSICOM)'. He recalled that the idea for 1998, the International Year of the Ocean, came from the Seventeenth Session of the IOC Assembly (March 1993) which adopted its Resolution XVII- 17, making the proposal. This was endorsed by the 27th General Conference of UNESCO (November 1993) and by ECOSOC in July 1994. The UN General Assembly formerly adopted the proposal through its Resolution A/RES/49/13 (December 1994).

186 The Regional Committee was reminded the objectives of the International Year of the Ocean were to: *create awareness and obtain commitments from governments to take action, provide adequate resources and give priority to the oceans and coastal areas which they deserve as finite-sized economical assets.* Finite size must be emphasized.

187 The Regional Committee expressed its wish to see the establishment of the 1998 International Year of the Ocean national focal points in all IOCINCWIO Member States, with the task of setting up a national committee to coordinate the events taking place a the national level.

188 The Regional Committee recommended the following activities:

(i) the development of public awareness campaigns, which should be based on media facilities available, (e.g.: short clips, radio, press); as well as on village communication campaigns;

(ii) education campaigns, such as essay competitions, poster competitions, the use of NGOs, talk and lectures, diving clubs;

(iii) the participation of IOCINCWIO focal points in PACSICOM (July 1998, Maputo);

(iv) publication and wide circulation of ocean related materials to Member States.

(v) the issuing throughout the region of a special series of stamps to celebrate the event.

189 The Regional Committee welcomed the initiative of Mozambique and the UNESCO Director-General to organize PACSICOM.

190 The Delegate of Madagascar, Dr. J. Maharavo, referring to 1997 International Year of the Reef offered to host an international seminar in order to celebrate this event. He envisaged this event as a joint Madagascar-IOC-Indian Ocean Commission activity.

191 The Regional Committee felt that WIOMSA had a strong role to play in the celebration of the Year of the Ocean as it provides linkages between scientists and local communities.

192 The Regional Committee suggested that a regional co-ordinating group for regional activities related to the 1998 International Year of the Ocean could be established at the Regional Coordinating Unit (EAF/RCU) in Seychelles, and that this group could rely on media facilities provided at KMFRI (Kenya) and the Indian Ocean Commission (Mauritius).

193 The Regional Committee urged Member States and individuals to sign the Ocean Charter.

194 The Regional Committee invited India to provide more information on the cruise planned by India from Goa to Mombasa to arrive in Lisbon and return to Goa, and looked forward to active participation of IOCINCWIO scientists in the cruise.

195 Mr. P. Pissierssens of the IOC informed the Committee of the 1998 International Year of the Ocean which will be launched soon by the IOC. He invited IOCINCWIO Member States to make active use of this server for publicizing their activities related to the 1998 International Year of the Ocean.

196 The Regional Committee agreed that 1998 International Year of the Ocean activities in the region should be on a common approach to integrated coastal zone management.

8. PROGRAMME OF WORK 1997-2001

197 The Chairman recommended to the Regional Committee that it prepare a Workplan for the period 1997 to 2001, on the basis of the deliberations of the previous Agenda Items. He requested the Committee to include the estimated years of implementation as well as an estimate of the financial implications.

198 The Regional Committee reviewed its discussions of the Agenda items and drafted a comprehensive Workplan (attached as Annex to Recommendation IOCINCWIO-IV.2 to this Report.

199 The IOC Technical Secretary announced that SAREC of Sida had approved further support for the region through IOC for the period 1997 to 1999, amounting to approximately US$ 300,00 per year. He pointed out that the Workplan's financial requirements exceeded these resources quite considerably.

200 The Regional Committee encouraged Member States to identify donors to complement the IOC support in order to enable satisfactory implementation of the Work Plan.

201 The Regional Committee adopted Recommendation IOCINCWIO-IV.2

9. NATIONAL LIAISON ARRANGEMENTS WITH IOC AND FOR THE IOCINCWIO REGION

202 The Regional Committee was requested to monitor the situation regarding the question of improving communications between Member States and the IOC Secretariat, and also with respect to the national liaison arrangements in marine scientific affairs.

10. ELECTION OF OFFICERS

203 The Delegate of France recalling the stimulating chairmanship alternance between island states and mainland states, proposed Dr. Ezekiel Okemwa as the new Chairman for the next intersessional period. He underlined the active role that Kenya has played for many years in promoting marine sciences. He expressed the wish to the see the involvement of most research institutions of the Member Sates in the activities of the IOCINCWIO. This was seconded by the Delegate of Mozambique. The Regional Committee elected Dr. Ezekiel Okemwa with acclamation for the intersessional period and the next session of the Regional Committee. The Delegate of Kenya then proposed the Delegate of Madagascar, Dr. Jean Maharavo as Vice-Chairman. This was Seconded by the delegate of Seychelles. The Regional Committee elected Dr. Jean Maharavo as Vice-Chairman with acclamation.

11. DATE AND PLACE OF THE FIFTH SESSION

204 The Regional Committee agreed that the next Session should be held in 2001, The Delegate of Madagascar expressed the wish of his country to host the next Session.

12. ADOPTION OF THE DRAFT SUMMARY REPORT OF THE SESSION

20.5 The Regional Committee adopted the Draft Summary Report, Workplan and Recommendations of the Session.

13. CLOSURE

206 The Session closed on Saturday 10 May 1997 at 13h30.

ANNEX I

AGENDA

1. OPENING

2. ADMINISTRATIVE ARRANGEMENTS

- 2.1 ADOPTION OF THE AGENDA
- 2.2 DESIGNATION OF THE RAPPORTEUR
- 2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

3. REPORT OF THE EXECUTIVE SECRETARY ON INTERSESSIONAL ACTIVITIES

4. PROGRAMME MATTERS

- 4.1 OCEAN SCIENCES: REGIONAL PERSPECTIVES
  - 4.1.1 Ocean Dynamics and Climate
    - 4.1.1.1 JGOFS
    - 4.1.1.2 TOGA Data Dissemination
    - 4.1.1.3 Oceans and UNFCCC
    - 4.1.1.4 WOCE
  - 4.1.2 Ocean Science in Relation to Living Resources (OSLR)
    - 4.1.2.1 Harmful Algae
    - 4.1.2.2 Marine Biodiversity
    - 4.1.2.3 Recruitment and Stock Assessment
    - 4.1.2.4 Inventory of Critical Marine Habitats
    - 4.1.2.5 Large Marine Ecosystems
  - 4.1.3 Ocean Mapping: IBCWIO
  - 4.1.4 Ocean Science in Relation to Non-Living Resources (OSNLR)
  - 4.1.5 Marine Pollution Research and Monitoring (GIPME/MARPOLMON)
    - 4.1.5.1 Regional Nutrient and Water Quality Monitoring Network Project
    - 4.1.5.2 International Musselwatch Programme
  - 4.1.6 Integrated Coastal Zone Management
- 4.2 OCEAN SERVICES AND GOOS: REGIONAL PERSPECTIVES
  - 4.2.1 Regional Component of the Global Ocean Observing System (GOOS)
  - 4.2.2 Global Sea-Level Observing System (GLOSS)
  - 4.2.3 International Oceanographic Data and Information Exchange (IODE)
    - 4.2.3.1 Data Exchange - ODINEA
    - 4.2.3.2 Information Exchange - RECOSCIX-WIO
- 4.3 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED) AGENDA 21: FOLLOW-UP SUMMARY
  - 4.3.1 ACC Sub-Committee on Oceans and Coastal Areas
  - 4.3.2 Follow-up to the International Conference on Small Island Developing States (SIDS) including relation to CSI

5. CAPACITY BUILDING - TEMA

5.1 CAPACITY BUILDING IN THE IOCINCWIO REGION
5.1.1 Feasibility Study of an Eastern African Journal of Marine Science

5.2. WIOMSA
5.2.1 Marine Science Country Profiles

5.3 METHODS AND TECHNOLOGIES: PREPARING FOR THE 21ST CENTURY

5.4 UNCLOS AND RELATED TECHNICAL CO-OPERATION AND TECHNOLOGY TRANSFER

6. CO-OPERATION WITH OTHER BODIES (e.g. IOCINDIO), PROGRAMMES, DONOR AGENCIES AND REGIONAL ORGANIZATIONS

7. 1998 INTERNATIONAL YEAR OF THE OCEAN: REGIONAL AND INDIAN OCEAN PERSPECTIVES - INDIAN OCEAN SUB-COMMISSION

8. PROGRAMME OF WORK 1997-2001

9. NATIONAL LIAISON ARRANGEMENTS WITH IOC AND FOR THE IOCINCWIO REGION

10. ELECTION OF OFFICERS

11. DATE AND PLACE OF THE FIFTH SESSION

12. ADOPTION OF THE DRAFT SUMMARY REPORT OF THE SESSION

13. CLOSURE

ANNEX II

RESOLUTIONS AND RECOMMENDATIONS

Resolution IOCINCWIO-IV.1

INTERNATIONAL BATHYMETRIC CHART OF THE WESTERN INDIAN OCEAN (IBCWIO)

The Regional Committee,

Noting with appreciation that two further Member States have joined the Editorial Board, namely the Russian Federation and South Africa,

Taking note that the assembly diagram had been modified and the number of sheets increased by 3 to 21,

Taking also note that the preparatory work has been successfully completed, that the plotting sheets together with a diskette are being distributed now to sheet co-ordinators, and the first 2 sheets will be printed in 1998,

Stresses the great importance of an early presentation of the whole Chart in particular for the benefit of the countries of the region;

Invites Member States to further closely co-operate in the finalization of the Chart;

Thanks the German government for its continuous support of the work of the Chief Editor to enable him to issue the Chart in time.

Resolution IOCINCWIO-IV.2

WIOMSA CONTRIBUTION TO IOCINCWIO ACTIVITIES

The Regional Committee,

Recalling its endorsement of WIOMSA as a tool which can enhance the development of marine sciences in the region, during its Third Session,

Further recalling the endorsement by the Regional Committee during its Third Session, of the request to support WIOMSA,

Noting the establishment of the WIOMSA Marine Research Grants programme and their provision to over twenty marine scientists in the region since the Association's registration in 1994,

Noting further the registration by WIOMSA of over 300 members,

Recognizing the relevance of the objectives and activities of WIOMSA which are attached in Annex to this Resolution,

Encourages IOC Member States, other international organizations, and donors to provide support to assist in the further development of the Association, especially to its Marine Research Grants programme,

Requests IOC to continue its assistance to WIOMSA through support of its Secretariat and its operational activities.

Annex to Resolution IOCINCWIO-IV.2

Aims and objectives of WIOMSA

- to promote and advance the educational, scientific and technological development in all aspects of marine sciences in the Western Indian Ocean region;
- to encourage the support of marine science research, development and educational activities undertaken by governments and private sectors;
- to provide forum for discussion and dissemination of information and organise meetings, seminars and workshops for the presentation of findings and experiences on subjects related to marine science;
- to collect and disseminate scientific, technical and other information relevant to marine sciences;
- to foster the linkage between scientists, government policy-makers, managers and stake-holders (coastal community and private sector)
- to promote and foster inter-institutional linkages within and outside the region.

Activities of the Association

- improving communication among the scientific community of the IOCINCWIO region;
- assisting in the development of institutional linkages within the region;
- defining and developing research into problems which may require a national and/or regional approach to their solution;
- identifying workable mechanisms for the coordination of marine science research and development within the region;
- strengthening the awareness of marine sciences research and its importance in the development and management of the marine sector of the IOCINCWIO region; and
- development and management of marine research grant programme.

Recommendation IOCINCWIO-IV.1

LARGE MARINE ECOSYSTEMS (LME)

The Regional Committee,

Noting the recommendations made by:

(i) the International Symposium and Workshop on "Status and Future of Large Marine Ecosystems (LME) of the Indian Ocean" held in Mombasa 1993 and the First Session of the IOC-FAO Group of Experts on the Programme on Ocean Science in Relation to Living Resources for the IOCINCW1O Region held in Mombasa, 1994,

(ii) IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems (LME) held in Paris, January 1997,

(iii) First WIOMSA Scientific Symposium on Advances in Marine Science in Eastern Africa: Application of Scientific knowledge in Marine and Coastal Management (Mombasa, Kenya, 2-3 May 1997).

Recognizing that two large Marine Ecosystems have been identified in the Western Indian Ocean Region, namely the Somali Current and Agulhas Current LMEs,

Recommends the recognition of the Mascarene Plateau as a third LME in the WIO Region because:

(a) it is a shallow topographic ridge extending in an area over 2200 km from Mauritius to the Seychelles;

(b) it is a large area of more than 115,000 sq km of banks and shoals which are largely between 33-90 m with a shallow rim of 8-20 m depth;

(c) it spans between South Equatorial Current and the north Equatorial Current;

(d) it is a highly productive area, of significant importance to the IOCINCWIO region.

Recommends:

(i) capacity building to meaningfully address LME activities. Lack of expertise both scientific and technical as well as scientific understanding of the biological and physical components of LMEs inhibit assessments of pollution, habitat degradation and over exploitation of resources;

(ii) development of project proposals for GEF and other donor funding for the implementation of the three LMEs in the WIO Region for submission to GEF and other donors;

Requests IOC to provide support for development of these proposals and identification and establishment of a Group of Experts (minimum of three experts [Somali Current, Agulha Current and Mascarene Bank LME]) to co-ordinate the LME activities in the region;

Recommends that, in developing these proposals, consideration should be given to:

(i) application of new technologies and techniques, such as airborne instruments e.g., compact airborne spectrophotometric instruments, acoustic assessments of sedimentary habitats, GIS and assessment on the status and changes in LMEs;

(ii) analysis of existing information and programmes with a view of providing a basis for further investigation of topics, such as the dynamics of the ecosystems, socio-economic and impact of human activities and degree of resistance and resilience, ecological role, maintenance of biodiversity, and existing management systems. The scientific information will assist in the formulation of policies and management strategies for the protection and conservation of marine ecosystems.

Recommendation IOCINCWIO-IV.2

PROGRAMME OF WORK 1997-2001

The Regional Committee,

Recalling the successful implementation of its programme during the past intersessional period 1992-1997;

Noting with satisfaction that a considerable amount of training activities have been carried out;

Noting the results of UNCED and the importance of its follow-up at the national and regional level;

Noting further the 1998 International Year of the Ocean and its objectives to create awareness and to obtain commitments from governments to give priority to the Oceans;

Decides to adopt the programme of work for IOCINCWIO for the period 1997-2001 and indicated in the Table annexed to this Recommendation;

Expresses its appreciation to the Member States, donors and organizations who have provided support to IOCINCWIO during the intersessional;

Urges Member States to actively participate in the IOCINCWIO programme in accordance with their national priorities, interests and capabilities;

Urges the IOC, other organizations and donor agencies to assist in the implementation of the 1997-2001 Programme of Work.

Annex to Recommendation IOCINCWIO-IV.2

WORKPLAN 1997-2001

(Budget in thousands of US Dollars); 'x' indicates implementable with no cost

	Para. No.	1997	1998	1999	2000	2001
4.1.1 OCEAN DYNAMICS AND CLIMATE						
- Co-operation in CORP-WIO (CSC): Chairman to correspond with CSC	*21*	*x*				
- Establishment GE-ODC						
= Send out invitation to Member States to identify experts	*35*	*x*				
= Meeting of the GE-ODC	*35*		*15*			15
4.1.2 OSLR						
4.1.2.1 *HAB*						
- Nomination of Regional Co-ordinator	*40*	*x*				
- Manual	*40*	15(E,F)				
- Training Course	*40*		*25*			
- Baseline monitoring	*40*			40	15	15
4,1.2.2 *Biodiversity*						
- Set up and maintain biodiversity database	*43*	5	*5*	5	5	5
- Desk study available biodiversity capacity (to be implemented by RECOSCIX-WIO)	*44*	x				
4.1.2.3 *Recruitment and Stock Assessment*						
- Training on sampling strategies for assessment of artisanal fisheries, including manual and planning of operational workplan (sampling of fish eggs and larvae in coral reefs, mangroves and inshore waters)	*48, 49*		*15*			
4.1.2.4 *Inventory Critical Habitats IOC/UNEP* - Seagrasses + other habitats	*53-57*					
- Phase 1: Kenya and Northern Tanzania (North)		12				
- Phase 2: Comores, Madagascar, Mauritius, Seychelles, La Reunion, Mozambique, and Southern Tanzania			40			

	Para. No.	1997	1998	1999	2000	2001
4.1.2.5 *LME*						
Establishment GE-LME	68 *(Rec. 1)*	*x*				
- Meeting GE-LME			25			
. Consultative meeting for drafting proposals for submission to GEF			10	-		
. Including support of scientists in 'Shoal of Capricorn' Cruise			10	10	10	-
4.1.3 Ocean Mapping						
- Next Session of IBCWIO	72	10	-	10	-	
4.14 OSNLR						
- Finalization of draft manual	77	10	-			
- Workshop on Methodology and Selection of Sites	83	20	-			
- Monitoring - Pilot Studies (Kenya, Tanzania, Madagascar, Comores, La Reunion, Seychelles, Mozambique)	82		50	50	50	-
- Provision of equipment			130	-		
4.1.5 Marine Pollution - Operational Activities (*)						
4.1.5.1 *Regional Nutrient and Water Quality Monitoring Network*						
- Nutrients, Sediment transport and Turbidity monitoring	86	18	18	27	27	36
- Intercalibration exercises	86		20	-	20	-
- Organic Pollutants, heavy metals	88		6	6	6	6
- Marine Debris Study	90	25	-			
4.1.5.2 *Musselwatch*	*92*		*6*	*6*	*6*	*6*
(*) no allocation made for data management guidelines						
4.1.6 Integrated Coastal Zone Management	94-100					
- Workshop on data and information requirements and standardization for ICZM (Output: manual/report)			30 (E,F)	-	-	-

ANNEX III

ADDRESSES AND STATEMENTS

III.A OPENING ADDRESS DR. E. OKEMWA

Hon Mr. Sajaad, Assistant Minister of Research, Technical Training and Technology,
Mr. Wamatu Njoroge, Permanent Secretary, Ministry of Research, Technical Training and Technology,
Dr. S. Ragoonaden, Chairman of the IOC Regional Committee for the Co-operative Investigation of the North and Central Western Indian Ocean
Mr Peter Pissierssens, Representative of the Executive Secretary of IOC,
Delegates and Representatives of International Organizations,
Distinguished Guests,
Ladies and Gentlemen,

It is indeed a great pleasure for me to be with you at this important Session of the IOC Regional Committee for the Co-operative Investigation of the North and Central Western Indian Ocean with acronym of IOCINCWIO. On behalf of the Chairman of the Board of Kenya Marine and Fisheries Research Institute (KMFRI), staff, and my own behalf, it gives me great pleasure to welcome you all to this opening session.

Mr. Minister let me highlight the scientific problems in Kenya.

1. SCIENTIFIC PROBLEMS

(i) In early 1980's KMFRI was lacking scientific literature
(ii) Operational funds for research

1.1 WAY OUT OF THESE SCIENTIFIC PROBLEMS

Through bilateral collaboration between Kenya Marine and Fisheries Research Institute and the Free University of Brussels in Belgium, support was given to the Regional Information Exchange Project (RECOSCIX-WIO). Scientists from the Western Indian Ocean Region are now able to get their scientific literature through CD-ROM, on-line search or on request from collaborating libraries.

1.2 OPERATION FUNDS

Some funds have been got through bilateral co-operation. In 1991 a Western Indian Ocean Marine Science Association (WIOMSA) was formed. There is need for the marine scientists of the region to act as a team/group/one community.

1.3 WIOMSA'S ACTIVITIES

WIOMSA is actively participating in the building of marine science and technological capability of the WIO region by focusing on the following activities:

(i) improving communication among the scientific community of WIO States;
(ii) assisting in the development of institutional linkages within the region;
(iii) defining and developing research into problems which may require a national and/or regional approach to their solutions;
(iv) identifying workable mechanisms for the co-ordination of marine science research and development within the region;
(v) strengthening the awareness of marine sciences research and its importance in the development and management of the marine sector of WIO States; and
(vi) development and management of marine research grant programme.

WIOMSA is guided in these activities by its Board of Trustees elected every three years from amongst its members.

Mr. Minister, we have just concluded a Scientific Symposium on Advancement of Marine Science in the Western Indian Ocean. I am pleased to say that this was a successful symposium and we congratulate them all for high level of scientific presentation.

1.4 SYMPOSIUM AND ASSEMBLY OUTPUTS

During the two-day deliberations, the Scientific Symposium highlighted:

(i) research grants should promote projects of an interdisciplinary nature comprised of small teams of scientists (3-4) where the team contains members examining (a) habitat, (b) environmental resource, and (c) the resource users;
(ii) concentrate an amount of research in specific study sites to promote integrated research programmes in areas reflecting regional issues on a larger scale and which require an integrated, interdisciplinary approach.;
(iii) WIOMSA should promote local community participation in research activities.

1.5 MARINE SCIENCE IN KENYA

I shall now dwell briefly on a few examples to illustrate our involvement in the field of marine sciences. Kenya is actively participating in the monitoring of sea level, We have established two sea-. level stations, one in Mombasa in 1975 and the second in Lamu in 1995. The Kenyan sea-level station was recently upgraded and became one among the few set of stations to transmit sea-level data in real-time, via satellite. The Malindi sea-level gauge will soon be upgraded too. We have been quite active during the intersessional period in promoting regional activities and implementing some of the decisions taken during the Third Session of this Regional Committee in Mauritius.

The types of activities undertaken include the following: project development studies and reports, regional co-ordination and policy meetings, WIOMSA development and marine research grants, workshops and group training activities, individual training grants and operational programme activities (including equipment).

Mr. Chairman, I am sure that the Fourth Session will give such thought to the major environmental issues currently confronting mankind.

These issues concern the protection of the marine environment and the effects of climate change on the oceans and coastal areas. Public awareness related to marine environment should be given priority.

The issues relating to climate change are at the centre of the international debate these days. This was particularly highlighted during the Earth Summit in Rio de Janeiro in June 1992. I know that it is no longer a matter of dispute that the ocean plays a key role on weather and climate. I understand that IOC is making a substantial contribution to the follow-up of the Conference through the development of a Global Ocean Observing System.

Such a system will fill a long-felt vacuum and will contribute significantly to the understand and prediction of climate variability and climate change and other important environment issues. Kenya fully supports this programme. We will consolidate our current marine programme and will participate in other activities within our capabilities. We also support and participate in biodiversity and climate change programmes in the region.

But Mr. Minister, we need new technologies and their application to marine research in the

region. These will include the following:
(i) observation platforms,
(ii) sampling equipment,
(iii) information/data storage devices,
(iv) data analysis facilities including computers and software,
(v) dissemination (communication) facilities: Journals, CD-ROM, E-mail, Internet.

This issue will be discussed during this Session.

I have noted that on account of the multidisciplinary nature of this meeting, the Kenyan delation comprises of at least twelve (12) scientists from different local institutions involved in marine sciences.

I wish to emphasize the need for such co-operation at the national level as we believe, little progress would be achieved without the effective interaction of experts having different marine backgrounds.

I now have the honour to invite Dr. Ragoonaden, Chairman of IOCINCWIO to say few remarks.

Thank you.

III.B OPENING ADDRESS MR. S. RAGOONADEN

Hon Mr. Sajaad, Assistant Minister of Research, Technical Training and Technology,
Mr Peter Pissierssens, Representative of Executive Secretary of IOC,
Dr. Ezekiel Okemwa, Director of the Kenya Marine Fisheries Research Institute,
Distinguished Delegates,
Mr. Wamatu Njoroge, Permanent Secretary, Ministry of Research, Technical Training and Technology,
Distinguished Representatives of International Organizations,
Professor Mohammed Hyder, Retired Professor of Zoology and Principal of the College of Biological and Physical Sciences of the University of Nairobi,
Ladies and Gentlemen,

It is indeed with great pleasure that I welcome you to the Fourth session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean. I would first like to express my appreciation to the Government of Kenya and the Director of the Kenya Marine and Fisheries Research Institute for hosting this session and making such excellent arrangements for the meeting.

I am sure that all the distinguished delegates have come here with the firm determination to participate actively in the work of this session and contribute to discussion and decisions which will enhance the marine programmes in this region for the benefit and welfare of all IOCINCWIO Member States. This is the last meeting of the Committee this century and it will be called upon to take decisions and approve marine programmes which will lead us to the years beyond 2000.

It is a pity that South Africa is not here as the nominee could not come in the last minute. Anyway we have pleasure to welcome in our midst South Africa who is now a member of IOCINCWIO. This additional participation will certainly boost up marine activities in this region as South Africa is already well-advanced on many aspects of oceanography. Its contributions will certainly be of immense benefit to the enhancement of marine sciences and services in this part of the world.

I believe, it is my duty, to look back as far as the last session and try briefly to analyse and evaluate the past activities. I am sure you will agree with me that in the field of Education and Training, much activities have taken place. Many training Workshops and Seminars have been organized on such varied

topics as sea level analysis, bathymetric charting, harmful algae blooms, integrated coastal zone management, nutrient analysis and data management. Individual travel grants have also been provided to enable scientists to participate in international conferences and workshops. On marine research, thanks to the Western Indian Ocean Marine Science Association (WIOMSA), many marine research grants have been granted to scientists in the region to implement relevant marine research studies. RECOSCIX has played an important role in the exchange and dissemination of information. An E-mail network has been established in the IOCINCWIO region, thanks to funds made available by IOC. This communication system, has, in fact, facilitated tremendously exchange of information with IOC and also among countries in the region. Meetings of the Regional Groups of experts on living resources and bathymetric charting have been held to discuss and review program in the implementation of these projects as recommended by IOCINCWIO-III. Experts missions were also organized in the region to provide advice and guidance to IOCINCWIO Member States.

Distinguished delegates, Ladies and gentlemen

We have now qualified and well-trained personnel in all the disciplines of marine sciences who have the capabilities to implement many of the regional marine projects which have been approved so far. You may recall that regional project proposals, among which are: the co-operative investigations on Pelagic living resources, marine pollution research and monitoring, Global sea-level observing system and scientific Information Exchange, Bathymetric Chart of the Western Indian Ocean, Integrated Coastal Zone Management, Coastal erosion and sea-level rise in the Western Indian Ocean region “Scientific appraisal and Management” have been recommended and approved by the Regional Committee during past sessions. However, it is fair to say that, though some progress had been noted on some of the above projects, little activities have taken place with regards to others in spite of experts missions. With the capabilities currently available, I firmly believe that we should now identify a couple of these projects which are of most direct relevance to the region and concentrate in the next few years on their gradual effective implementation.

In our future activities we should, however, be guided by the progress of two events which has taken place recently at world level, co-ordinated by the United National System. The first concerned the United Nations Convention on the law of the sea (UNCLOS) which came into force on 16 November 1994 and the second is the follow-up activities to the United Nations conference on Environment and Development (UNCED). “UNCLOS” defined the New “Ocean Regime” and endorsed the Exclusive Economic Zone (EEZ) concept. This implies that ninety percent or more of traditional fishing areas that used to be in international water are now under the jurisdiction of individual coastal and island states. UNCED through its conventions on Biological Diversity and climate change put emphasis on ocean-atmosphere dynamics, evaluation and prediction in sea-level and ocean absorption of carbon dioxide. We should bear in mind also the statement made by chairpersons of many International Organizations during the 27 General Conference of UNESCO of the need to concentrate much effort for more interdisciplinary co-operation on such areas as coastal zone management and small islands environments, biological diversity and natural disaster reduction, We should also note the proposal made by Mr. Federico Mayor, Director General of UNESCO at the second International Conference on Oceanography held in November 1994 in Lisbon that “an interdisciplinary project on coastal zones and small island states as an experiment for the next Medium Term period should be established”.

In fact, much of the present population lives and a majority of the future may live and work within the coastal areas. This makes these areas very vulnerable to physical and other natural and human induced disturbances and changes. This strong emphasis from the open-sea to the coastal zone implies that IOCINCWIO will be called upon to assume a more important responsibility to implement projects which will have direct positive bearing on the national socio-economic development of countries and small island states within IOCINCIWO region.

Consequently, it is proposed that the main thrust be directed towards programmes which have a strong

bias towards coastal areas and Exclusive Economic Zones. These may include marine pollution, coastal erosion, impacts of sea-level and living resources in these regions.

The issues related to global change, in particular global warming and impacts of sea level rise, are at the center of international debate to-day. The second assessment report of the Intergovernmental Panel on climate change (IPCC) indicates that it is certain that temperature has increased since the Industrial revolution at a rate which natural causes only cannot account for. However, there are much uncertainties about the rate the temperature is increasing due mainly to lack of reliable data. As you aware, IOC has been given the leading role to develop within the framework of Agenda 21 of UNCED the Global Ocean Observing System (GOOS) to make available, inter-alia, reliable oceanic data. It should be admitted that participation in GOOS has been quite low in the region. These maybe due to many factors. Among these are: lack of awareness of the economic importance of GOOS, lack of human resources and poor infrastructure, and a shift of priority to other issues with more visible economic gain. GOOS, when it is implemented, will revolutionize operational oceanography. However, it is imperative that we get ourselves prepared to participate actively in the development of GOOS in this region. Perhaps the organization of a regional GOOS workshop could excite the interest and raise awareness of its importance.

Another issue requiring the urgent attention of the Regional Committee is the need for closer cooperation and co-ordination with other organizations involved in marine sciences in the West Indian Ocean. This should be encouraged in order to avoid duplication and take advantage of scarce resources. The Indian Ocean Commission has already embarked on an ambitious Environmental program including the implementation of an integrated coastal zone management programme and the International Maritime Organization (IMO) is proposing a marine programme to the Southern African Developing Community (SADC countries) which include protection of the marine environment and maritime safety. It is not without reason that during 1996, the Executive Councils of both WMO and IOC have recommended closer cooperation between the two organizations for more effective implementation of many current joint activities and towards the development of new marine projects of mutual interest. Both organizations have already cooperated and collaborated towards the preparation of a project proposal for the establishment of a post-graduate course in marine meteorology and Physical Oceanography at Nairobi for the benefit of the African countries. A First Implementation Planning WMO/IOC meeting for marine sciences enhancement in Eastern and Southern Africa will be organised from 20-22 May 1997 in Mauritius to develop inter alia, a project proposal for the establishment of a Regional marine meteorological and physical oceanography centre in this region. The Commission for Marine Meteorology (CMM) during its Twelveth Session in Cuba in March 1997, despite recognizing that many constitutional, financial and technical questions have still to be clarified, recommended that possibilities of closer co-operation between CMM and IOC be explored.

As you are all aware, the International year of the ocean (IYO) will be celebrated in 1998. This will be a unique opportunity for marine Institution in the region to create increased public awareness of the important role of the ocean in many socio-economic fields.

I am sure that this is one of the agenda which will be given high priority during the deliberation of the Committee and concrete proposals how IOCINCWIO countries will celebrate IYO to enhance public awareness and publicize their marine activities will emerge.

I am looking forward to an inspiring and useful debate on all those important issues during the next few days and I am sure that the concern and wisdom of the delegates to this Fourth Session of IOCINCWIO will lead to decisions which will be of great importance for. the future of the Regional Committee.
In conclusion, I should like to express my sincere thanks to the Executive Secretary of IOC, Dr. Gunnar Kullenberg who provided crucial support to the progress made by the Committee towards the implementation of its programme during the past intersessional period. He will not be among us during the next session as he is retiring soon from IOC. We will miss a lot his valuable guidance and unfailing

commitment to the advancement of marine sciences in general and the development of IOC . It has been a pleasure to work with him. I wish him a fruitful retirement.

Thank you.

III.C OPENING ADDRESS IOC EXECUTIVE SECRETARY (Presented by P. Pissierssens))

Hon. Minister, Mr. Permanent Secretary, Your Honour, Distinguished Delegates, Mr. Chairman, Mr. Vice Chairman, Representatives of Organisations, Guests, Ladies and Gentlemen,

I would first like to express, on behalf of the IOC, my appreciation to the Government of Kenya for hosting this Fourth Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean and for making such excellent arrangements for the meeting. This will certainly contribute to a successful session. I also wish to welcome South Africa as a new Member State of IOCINCWIO.

It has been a little over 4 years since the previous Session met in Mauritius in December 1992. Since then, I am pleased to say, we have seen a great number of activities in the region, and implementation of the programme adopted by the Committee for the period 1993 to 1996.

In fact if we go back ten years the difference between then and today is dramatic. Ten years ago few countries in the region had marine science institutions. Those who had such facilities were mostly poorly equipped. In 1989 we counted 100 marine scientists in the region. 25% had a BSc, 60% had an MSc and only 15% had a PhD. Ten years later we count nearly 300 marine scientists in the region. Of this impressive number, 30%. have a BSc, 50% an MSc and 20% a PhD or equivalent. In less than 10 years the region has thus tripled its human capacity in this field. Infrastructure has improved considerably as well..

Looking at the IOCINCWIO activities over the same period we can clearly observe a gradual shift from human capacity building activities such as workshops and training courses between 1989 and 1995 towards operational activities in 1996 and 1997. This clearly shows that the region's scientists have reached maturity. Whereas efforts in the past were geared mainly towards education we are now working mainly on operational activities.

As said before the years between the Third and Fourth Session have seen a tremendous activity in this region. Going through the major subject areas we can highlight the development of a Coastal Erosion programme as part of the Ocean Sciences in Relation to Non Living Resources (OSNLR), the creation of a Group of Experts on Ocean Sciences in Relation to Living Resources (OSLR), the development of national and regional plans for Integrated Coastal Area Management, the development of a regional data management network, and the setting up of the Western Indian Ocean Marine Sciences Association (WIOMSA).

I believe WIOMSA has great potential as a grassroots linkage between the scientists, the local communities the national and local governments and the international community. Already we are witnessing the success of WIOMSA's Marine Research Grants which have supported research projects of over 20 young scientists. The quality of their work was demonstrated during last week's WIOMSA Science Seminar. I therefore complement WIOMSA with this programme. However I also feel that we need to strive to better integration of the WIOMSA Research Grants in terms of the subjects into the IOCINCWIO Work Plan., Another priority should be the creation of linkages between the science community and other communities through public awareness campaigns.

One of the reasons we were able to have such a successful inter-sessional period has been the several donors. First I wish to mention SAREC of Sida. In 1989 IOC a successful partnership between

IOCINCWIO Member States IOC and SAREC agreed on a joint programme in the western Indian Ocean region to support the implementation of the IOCINCWIO programme with emphasis on research relevant to integrated coastal zone management and related capacity building. A Memorandum of Understanding was signed and the programme started in 1990-1991. Under the agreement SAREC, during the past inter-sessional period, has provided approximately US$ 1,000,000 to the IOC for the IOC-SAREC Marine Science Programme. In 1995 SAREC reviewed its bilateral, regional and multilateral programmes and as such the IOC-SAREC programme was also reviewed. The report prepared by the IOC Secretariat for the review has been included in this Session's working documents as Document IOCINCWIO-IV/7. The reviewers considered the programme successful and subsequently recommended continuation of the cooperation until the end of 1999. The Committee is invited to provide its views and advice on this development.

I also wish to mention the support provided by Belgium to the RECOSCIX-WIO project. As you may remember RECOSCIX-WIO was started by the IOC and KMFRI in 1989. After laying solid foundations between 1989 and 1991, the project's core funding was taken over by Belgium in 1991 for a period of 4 years and a budget of US$ 500,000. Substantive in-kind support was also provided by the RDC host, the Kenya Marine and Fisheries Research Institute. I am pleased to add that Belgium, in view of the success of the project, approved the second phase of RECOSCIX-WIO which started in 1996 for a period of 3 years and with a budget of about US$ 300,000.

Would all this have happened if IOC and IOCINCWIO had not been involved or not existed? This is of course a difficult question to answer. However, it is clear that the regional programme formulated through identified priorities and needs by IOCINCWIO, the IOC support including some financial support, and this in combination with the IOC-IOCINCWIO implementation mechanisms and linkages to national institutions, are attractive to donors and to the governments. It is my humble conclusion that much of the development here would not have occurred if IOC-IOCINCWIO had not existed.

These are only two examples of support provided by donors to the region on a bilateral, regional or multilateral basis of course there were many more: France, Germany, UK, USA, EU and of course several UN agencies and others. During this past inter-sessional, the IOC has continued its effort to bring together donors interested in this region in an attempt to better coordinate activities. Two such meetings were organized in 1993 and 1995 respectively. Although some success was achieved it is clear that the request for donor collaboration should also come from the recipient countries in the region. It is only then that we can achieve coordination and avoid duplication of efforts and thus wasting of already scarce resources. Within the United Nations system I am pleased to report an increased and closer collaboration of the IOC with UNEP and WMO. We hope others will be forged as a result of this session.

I also wish to emphasize the great importance of active involvement of the Member States in programme activities. Although substantial support has been obtained by the region during the past ten years we must realize that this support is not totally open ended. Furthermore, the programme activities which are now starting to develop may require funding beyond the capacities of the IOC. I wish to remind you that the IOC is not a funding agency. The IOC can only assist in capacity building and provide some money for operational activities. Large operational programmes may require funding from UNDP, the Global Environment Facility (GEF) or from bilateral donors. However, increasingly donors require substantial input and participation by the recipient country. It has to be clear that Member States need to show clear commitment by allocating funds from the national budget to marine related research. The marine science community, on the other hand, needs to assist in translating it scientific work into clear advice and products for management purposes. A balance needs to be found between pure science and applied science.

In this regard I also wish to refer to the Arusha and Seychelles Conferences where Ministers of IOCINCWIO Member States made clear statements on their commitments to the marine environment and

sustainable development, IOC is endeavoring to support the follow-up to these and UNCED.

We are also looking forward to actual involvement of IOCINCWIO member states in the International year of the ocean in 1998.

The Committee is now required to review the achievements and maybe failures made during the past inter-sessional period. The Committee is also requested to identify a realistic work plan for 1997-2001, based upon national priorities and national programmes, but within the spirit of regional collaboration.

Thank you for your attention.

III.D OPENING ADDRESS HON. R. SAJJAD

Chairman, Representatives of Member States, Senior Government Officials, Distinguished Guests, Ladies and Gentlemen.

It gives me great pleasure to be here with you this morning to share some thoughts with you as you begin the Fourth Session of the IOC Regional Committee for Co-operative Investigation in the North and Central Western Indian Ocean Region (IOCINCWIO).

On behalf of the Government and the people of the Republic of Kenya, and on my own behalf, I wish to extend a warm welcome to our guests from outside. Kindly take sometime off and enjoy our magnificent tourist attractions.

Ladies and gentlemen, you will recall that the idea of creating the IOCINCWIO regional programme was first mooted by Kenya to the Eighth Session of the IOC Assembly in 1973.

Subsequently, various meetings were convened in Nairobi in 1976, in which various regional research strategies for marine resource managements were laid. These mainly included: undertaking marine: scientific research and ocean services in the region, training, the establishment of an information network and laying down adequate research facilities.

These recommendations were adopted in 1979 by the Tenth Session of the IOC Assembly which also passed a resolution creating IOCINCWIO.

We feel honoured to be hosting the Fourth Session of this Regional Committee. It is a good opportunity to reflect on our achievements and to focus afresh on new goals.

Ladies and gentlemen, it will be noted that whereas many countries from Asia bordering the Indian Ocean have managed to a large extent to increase and utilize their marine resources, this has not been the case for many African countries in the region.

Kenya, for example, has yet to come up with a comprehensive workplan to protect its resources in the coastal zone. We are still experiencing some difficulties with:

(a) inadequate protection of coral reefs which hamper easy landings for fishermen and which destroy the breeding grounds for fish. Indeed, this has been so severe that fishing has been reduced by over 40 percent;

(b) increased populations putting unsustainable pressure on marine resources and the environment, and leading insufficient food for families along the coast.;

(c) uncontrolled deep-sea fishing by huge trawlers leading to indiscriminate depletion of vital marine life and on the other hand inappropriate fishing technologies used by local people;

(d) the wanton clearing of mangroves needed by local populations for their basic needs;

(e) continuous and haphazard oil spills, domestic effluents, increased sediment flow into coastal waters at the mouth of the Tana and Athi rivers leading to severe water pollution;

(f) other factors include the vagaries of weather, unfavorable world economic structures, poor planning and misguided policies.

As already pointed out, the marine resources available in the deeper waters are beyond the reach of many local fishermen. This is an area that we, as a country, are seeking to seriously address.

Mr. Chairman, I am happy to inform you the Kenya Marine and Fisheries Research Institute (KMFRI) which the Kenya Government created in 1979 to undertake marine research, has made considerable progresses in its programmes on marine resource database and atlas of the Kenya coast. We are pleased that with its multidisciplinary approach KMFRI has developed into research in fisheries, aquiculture, environmental and ecological problems and natural products.

I am happy to report that so far, KMFRI has produced a draft document that specifically outlines its research priorities and expansion programmes.

These programmes lay emphasis on ecosystem health and influence off anthropogenetic forces, and have concentrated with considerable success, on six priority areas which include the improvement of

(a) coastal, lacustrine and marine biodiversity
(b) exotics
(c) sustainable production
(d) habitats
(e) contaminants, and
(f) aquiculture

KMFRI has also extended its parameters inland, and has been at the core of the Lake Victoria Fisheries Research Project, which is supported by the European Community.

The project aims at establishing relevant and rational management of resources in the lake. A formulation mission has already set up a programme for the three riparian countries. Yet another marine programme has been ratified by our three Governments.

Mr. Chairman, despite limited resources KMFRI has also participated in a few regional marine programmes, among them the “Law of the Sea Project”, otherwise known as the “Regional Co-operation in Scientific Exchange in Western Indian Ocean (RECOSCIX-WIO)”, and the E.E.C. STD-3 Project on Interlinkages between Eastern African Coastal Ecosystem. This project includes the biotic factors of coastal ecosystems.

Mr. Chatrman, I am pleased to say that our efforts have borne fruit. KMFRI has been able to successfully:

(a) in large quantities of artemia or shrimps in the saline water of North Kenya coast;
(b) intensify its oyster research project by involving the local community;
(c) increase its fish stock assessment;
(d) improve the Kenyan coastal reef management and introduce anthropogenic induced changes;

(e) diversify its sea-weed and mangrove population, and
(f) expand its research work on aquiculture, leading to increased fish growth rates and yields compared to natural waters.

In general, we believe that we have a better understanding of applied fishery situations in our country.

All these undertakings and successes fall in line with the objectives of the Twelfth Session of the IOC Assembly meeting of 1982, which aims at bringing specific achievements to the local population:

(a) ensuring that by the end of the century the majority of the coastal States attain sufficient capability or undertaking marine scientific research and ocean services activities;
(b) absorbing the benefits of scientific and technological transfer so as to resolve issues of rational management of marine resources;
(c) protection of the marine environment; and
(d) balancing multiple uses of ocean space.

Mr. Chairman, as we approach the end of the century, it is time to assess our achievement as a region in the comprehensive plan.

We are encouraged that in recent years, major international initiatives have been undertaken to increase man's understanding of the ocean and its effect on regional climates. These include the Tropical Ocean and Global Atmosphere Experiment (TOGA), the World Ocean Circulation Experiment (WOCE) and the Joint Global Ocean Fluxes Study (JGOFS).

The United Nations General Assembly for one, has declared 1988 the International Year of the Oceans. with a view to creating awareness of the threats caused to them by human activities.

The November 1994 United Nations Convention on the Law of the Sea and the 1992 United Nations Brazil Conference on Environment and Development (UNCED) will further enhance the status of the seas and oceans. However, as pointed out in other sea conferences unless urgent measures are taken, the marine scientific and technological gap between developed and developing countries may widen and thus endanger the new regime.

I wish to take this opportunity to urge the East African States represented here today to initiate activities that can increase their public awareness on ocean related issues.

We hope that the IOC will also devise ways in which this region can benefit from regional oceanic experiments.

Today, we can speak proudly of the Eastern African Action Plan which will facilitate more balanced marine ecosystems. We have also enacted the Convention for the Development of the Eastern African Environment. Alongside this are two protocols dealing with the protection of wild fauna and flora, as well as co-operations in combatting marine pollution in emergencies.

These invariably provide a wholesome legal framework for the sustenance of marine life. The Governments of the region should now make a follow upon these initiated projects.

I am aware that the East African Ministers Environment have already met to discuss policies on integrated coastal zone management in the region. Indeed, they have ascertained that their governments would use a common approach to integrated coastal zone management. This is a very encouraging move.

The pilot projects initiated from these meetings provide a starting point for a comprehensive integrated coastal management strategy.

Ladies and gentlemen, it is worthwhile to note that African countries are becoming more self-reliant in addressing issues that affect them. This is evident from the Scientific Conference of the Western Indian Ocean Marine Science Association held last week.

We would like to thank IOC and other national and international agencies for their assistance on marine scientific research, training, support for workshops and symposia, ad equipment.

Mr. Chairman, we look forward to the recommendations of this workshop and hope they will address the issues raised herein.

We know that where experts fail to give guidance, people use poor means at their disposal for solutions. These rarely lead to rational use of the resources or environment. It is now upon the people charged with this responsibility to come to their aid.

With these remarks, I now have the honour to declare Fourth Session of the IOC Regional Committee for Co-operative Investigation in the North and Central Western Indian Ocean (IOCINCWIO) officially open.

Thank you.

III.E GERMANY

Mr. Chairman, ladies and gentlemen,

I have the honour and pleasure to convey to you the sincere wishes of the German Government for a successful Fourth Session of IOCINCWIO. Germany has regularly participated in the meetings of the Regional Committee, and has provided, since its inception, the Chief Editor for the International Bathymetric Chart of the Western Indian Ocean (IBCWIO), a milestone in IOCINCWIO's activities.

Over decades Germany has given high priority to scientific research in the Indian Ocean. Its two major research vessels "Sonne" and "Meteor" only recently carried out important investigations in relation to JGOFS, WOCE and OSNLR. At present RV "Sonne" sails in the waters of the Arabian Sea contributing again to JGOFS.

Furthermore, Germany has conducted IOC training courses in the Indian Ocean and Southeast Asian waters, in which many young scientists from African and Western Indian Ocean countries participated.

In order to express its interest in the whole of the Indian Ocean, the German Government had also sent me as delegate to the Second Session of the IOC Regional Committee for the Central Indian Ocean (IOCINDIO) which had taken place in Goa, from 20 to 22 November 1996. There I had the great pleasure to meet you, Mr. Vice-Chairman. Your presence showed the interest countries from all over the Indian Ocean have to more closely co-operate. My government would favour the idea to establish a common IOC Subcommission for the Indian Ocean with its own regional Secretariat in one of the Member States.

My Government also shows interest to further develop the Indian Ocean Marine Affairs Co-operation (IOMAC). IOC has signed a Memorandum of Understanding on co-operation with IOMAC. As the IOMAC Secretariat is based in Colombo, it might be a good idea to also locate IOC's future secretariat for the whole region there.

Mr. Chairman, I wish to express my appreciation to our host country to hold this eminent meeting

in such a beautiful environment not far from the renowned Kenya Marine and Fisheries Research Institute (KMFRI) located in the heart of Mombasa. It is a pleasure for me to be there.

Thank you

III.F UNITED NATIONS ENVIRONMENT PROGRAMME

Mr. Chairman, Distinguished Delegates, Dear Colleagues,

I would like to thank, on behalf of UNEP, and the Director of the UNEP Water Branch in particular IOC and the Government of Kenya for hosting the meeting, and for inviting UNEP to participate in the deliberations of this fourth session of IOCINCWIO.

Mr. chairman, with your approval, I want to take this opportunity to brief this meeting on recent developments in the Regional Seas Programme of UNEP in the Eastern African Region, and on some of the ongoing global UNEP activities with a regional delivery related to East Africa and the island states.

First of all, I would like to draw your attention to the fact that the Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region, which was signed by 9 states of the Eastern African region in 1985, entered into force in May 1996. The first meeting of the contracting parties was held in Seychelles from 17-18 March 1997. This first meeting of the contracting parties came up with a number of recommendations and decisions which are highly relevant to this IOC Regional Committee. So was there the approval of the establishment of a Regional Coordinating Unit (RCU/EAF), which is hosted by the Government of Seychelles at St. Anne island, Mahé, Seychelles. The EAF/RCU became operational in February 1997, with the appointment of an interim coordinator, who is responsible for the coordination and secretarial responsibilities related to the Nairobi Convention, its Action Plan, and its two related Protocols, one concerning the protected areas and wild fauna and flora, and one concerning the cooperation in combating marine pollution in cases of emergency. I may inform the meeting here as well that the contracting parties have welcomed the interest shown by the representative of South Africa, and that they had requested the Secretariat to facilitate the accession of South Africa to the Nairobi Convention.
Before elaborating on some of UNEP's global activities with a special reference to this region, I would like to briefly refer to the contracting parties meeting Decision CP. 1/8., which deals with the co-ordination with other programmes.

> *The contracting Parties,*
> *Considering: The objectives and activities common to the Plan of Action of the Nairobi Convention and to some other programmes, particularly the Regional Environment Programme of the Indian Ocean Commission in support of the Integrated Coastal Area Management Project, the IUCN and WWF activities, IMO programme and other relevant agencies/programmes implemented in the Eastern African Region (such as IAEA, FAO, UNESCO, UNDP, WHO, . ..)*
>
> *Urge: The Bureau with the assistance of the secretariat to take necessary action, including the institutional agreements, in order to avoid any delays between the activities of the different programmes, to look for acceptable complementarily and reciprocal programming adjustments and to co-ordinate, to their ability, the implementation of the programmes in order to ensure synergy.*

I would like to inform this committee that as a response to this request, UNEP and the Indian Ocean Commission, are presently negotiating cooperation agreements both at the agency level and at the project or national level.

The following are the ongoing projects under the Nairobi Convention:
1) the EAF/5 project: Protection and management of the marine and coastal areas in the Eastern African Region;
2) the EAF/14 project: Eastern African coastal and marine environment resources database and atlas;
3) the GEF project: Preparation of a transboundary diagnostic analysis and a strategic action programme for the marine and coastal environment of the Western Indian Ocean.

Mr. Chairman, allow me now to inform this meeting on the following global activities with a regional delivery:

Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.
The Washington Conference (23 October -3 November 1995) adopted a Global Programme of Action (GPA) for the protection of the marine environment from land-based activities, which aims at preventing the degradation of the marine environment from land-based activities by facilitating the realization of the duty of States to preserve and protect the marine environment. More specifically, the GPA aims at the identification and assessment of problems, the establishment of priorities, the setting of management objectives for priority problems, and the identification, evaluation and selection of strategic measures.

The Global Plan of Action for Marine Mammals
The Global Plan of Action for Marine Mammals was developed jointly by UNEP and the Food and Agriculture Organization (FAO) of the United Nations, in collaboration with other bodies concerned with marine mammals issues. The basic objective of the Plan is to promote the effective implementation of a policy for conservation, management and utilization of marine mammals which would be widely accepted by governments and the public. UNEP, as the Secretariat of the Marine Mammals Action Plan, is assisted by a Planning and Coordinating Committee (UNEP, FAO, IOC/UNESCO, IUCN, WWF, Greenpeace, the Inter-American Tropical Tuna Commission) in the policy formulating of the Action Plan. In 1994 and 1996, the Action Plan has served as a suitable vehicle to contribute and support efforts and challenges facing the Kenya Wildlife Service (KWS) in conserving the endangered dugong (Dugong dugong) in Kenya. UNEP, in collaboration with IUCN, KWS and the Eastern African database and atlas project, has supported to aerial surveys in 1994 and 1996.

The International Coral Reef Initiative ICRD, which will be discussed in detail during this meeting when is comes to the “Global Coral Reef Monitoring Network GCRMN).

The Global Environmental Outlook
One of the major components of the new UNEP’s State of the Environment (SOE) Programme is the Global Environment Outlook (GEO) project. GEO is a region based, participatory, global assessment project, addressing current and emerging environmental issues, within the socio-economic development context. GEO consists of a series of biennial reports to keep under review the state of the world’s environment, identify major current concerns, trends and emerging issues, their causes and impacts and possible international policy options and actions to address them. The first GEO report was published in January 1997 and launched at the 19th session of UNEP’s Governing Council. A second report is under preparation for the 20th session of the Governing Council in May 1999. Discussions are ongoing to prepare GEO-associated reports that cover in detail major regions of the world. One such region would consist of the countries covered by the European Union Programme of the Indian Ocean Commission

I wish all the delegates a successful and profitable Regional Committee Session.

Thank you.

III.G COMMONWEALTH SCIENCE COUNCIL

Honorable Assistant Minister for Research, Technical Training and Technology Government of Kenya.
Permanent Secretary, Ministry of Research, Technical Training and Technology
Chairman, IOCINCWIO
Secretary IOC
Government Representatives
Representatives of International Organisation and programmes
Fellow Scientists
Distinguished Ladies and Gentlemen

I would like to thank the Government of Kenya and the International Oceanographic Commission for the inviting the CSC to participate at this meeting - the fourth session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean. The great effort and elaborate arrangements made towards the organisation of the meeting has created an atmosphere conducive for successful deliberations.

I bring you greetings of the secretary of the Commonwealth Science Council, Dr Trotz and of the Secretary General of the Commonwealth Secretariat both of whom wishes you successful deliberations. The Secretary of the Commonwealth Science Council would like me to express his regret in not being able to be here, in person. He is at present involved, as some of you may know, in the preparation for the Council of the CSC who will be having their Biennial Meeting in Lilongwe, Malawi next week.

The CSC is particularly happy to be here for two reasons. Many of the countries here today are members of the Commonwealth family and we would like to meet, interact, renew acquaintances and discuss issues and/or projects of common concerns.

We are also very keen to keep in touch with the work of the IOC in ocean sciences as both organisations (the CSC and the IOC) are working in the same environment, on similar issues, using similar tools and interacting with the same scientists. We are always conscious of the need to avoid duplication and build synergies and co-operative mechanisms, not only as a means of stretching the limited resources but also of achieving maximum impact and benefit to our member states.
The CSC as some of you are aware is a new player in marine sciences in the Indian Ocean. We cut our teeth I suppose in the Caribbean where we ran a major research cruise a few years ago and have been supporting institutional development and capacity building in ocean sciences and management since the cruise. We now provide almost a standing support to the Caribbean Community Ocean Sciences Network (CCOSNET).

We are now in the process of developing a similar project in the Indian Ocean with the participating of Kenya, Tanzania, Mozambique and South Africa. We are discussing the participating of other Commonwealth member countries as well as non-Commonwealth countries. This projects the Commonwealth Ocean Resources Programme for the Western Indian Ocean (CORP-WIO) focuses essentially on capacity building in understanding and management of the ocean. It hopes to interact with several programmes and projects of the IOC, UNEP, UNESCO, bilateral organisations and other major players and stakeholders in the subject area. The CSC is inviting theses organisations and regional bodies to participate in this exciting activity. I hope, Mr Chairman that I have an opportunity to elaborate on this and other activities of the CSC during the session that will consider co-operation with international organisations and regional bodies - Agenda item 6.

Finally Mr Chairman I would once again like to thank the Regional Committee for IOCICINWO and yourself for having given me the opportunity to say a few words.

Thank you.

III.H WORLD METEOROLOGICAL ORGANIZATION

REGIONAL COMPONENT OF GOOS (Item 4.2.1)

Ocean Observing Networks

In 1996 an International Buoy Programme for the Indian Ocean IB PI0 was established as a regional Group for the WMO/IOC Date Buoy Cooperational (DBCP).

Participation is from Meteorological and Oceanographic Institutions with interest in the Indian Ocean from several countries and the Indian Ocean from several countries and its primary objectives is to coordinate and enhance the deployment and maintenance of a drifter Network in the Indian Ocean in support of Meteorological and Oceanographic Services, global climate studies and regional research interests. The programme has resulted in an increase in deployments, usually on an inter agency co-operative basis using the multi-purpose SVP-B drifter.

WMO strongly supports the IBPIO and Oceanographic institutions in the region should be encouraged to participate. Participation could include the provision of buoy deployment opportunities on research and merchant vessels and may not necessarily involve actual operation of buoys,

Further information on the IBPIO can be found on the programme homepage on the world wide web at:
http://www.shom.fr/meteo/ibpio

INTEGRATED GLOBAL OCEAN SERVICES SYSTEM (IGOSS)

The IOC/WMO Integrated Global Ocean Service System (IGOSS) has recently established an operational ship of opportunity programme (SOOP) to maintain a long-term basis a global network of ships deploying expendable bathythermographs (XBT's) to obtain upper ocean temperature data for global climate studies and in support of GOOS and GLOS.

A meeting of the SOOP Implementation Panel took place in Capetown in April 1997. Some lines exist already in the Indian Ocean, but it remains largely data sparse. Ocean institutes may therefore be encouraged to participate in the programme, in particular through the identification and maintenance of ships of opportunity for which the XBTS, launch equipment and training maybe provided externally.

Regional Development Project

Board on experience gained elsewhere WMO/IOC regional cooperative project is being planned for the Western Indian Ocean as a cost-effective means of providing marine data and services required by users in the region. The project will seek to combine resources and expertise from both meteorological and oceanographic agencies to produce better services beyond that which would be possible through a single Institution a even country including the wishing of the operational, service-oriented capabilities and facilities of meteorological services with the specific ocean expertise of ocean institutes.

The project might include two components:

a component to enhance regional, operational marine observing networks and related communications in a sustainable way;

a component to provide a specialized, regional, operational marine modelling and product preparation capability, perhaps through a single agreed marine modelling centre attached to an existing operational meteorological centre in the region, this centre would collect data, operate various marine models and generate products for distribution to participatory agencies for use at the national level, to produce services to their users.

A first joint WMO/IOC planning meeting for the project will take place in Mauritius, 20-22 May, 1997.

The session will be invited to comment on and eventually support the overall project concept and suggest ways to assist in its eventual implementation.

GLOSS- Global Sea Level Observing System

(Item 4.2.2)

WMO previously offered support for a proposed sea level project in the Indian Ocean;

National Meteorological Services in the region have nominated focal points for the project;

National Meteorological Services focal points are willing to participate particularly in the provision of meteorological data necessary for the full interpretation of measured sea level changes.

WMO assures members of the continuing interest in and support for the project, to the extend already indicated.

III.1 UN ECONOMIC COMMISSION FOR AFRICA

Au nom de la CEA, je remercie la COI pour son invitation, et le Gouvernement du Kenya pour son accueil.

La CEA n'est pas un bailleur de fonds ; sa mission est d'appuyer les Etats membres dans leurs objectifs de développement économique et social, et notamment dans leur objectif de sécurité alimentaire, en stimulant la création des capacités et en encourageant la mise en oeuvre de strategies pour une exploitation durable des resources.

Dans le domaine des resources marines vivantes, la CEA tient à souligner l'importance de la contribution du secteur des pêches à la sécurite alimentaire ainsi qu'au bien-être économique et social, en Afrique.

Pour la CEA, les actions susceptibles d'améliorer et d' accroître cette contribution se situent dans les domaines suivants :

(i) amélioration de la gestion des resources et de l'aménagement des pêcheries ;
(ii) développement des pêches artisanales ;
(iii) développement de l'aquaculture.

La CEA recommande que ces actions soient élaborées et mise en oeuvre dans un cadre sous-régional ou régional, et insiste sur la pertinence et l'efficacité de la coopération régionale dans les domaines de la formation, de la recherche scientifique, de l'harmonisation des législations, du transfert de technologies, et du commerce.

Grâce à des financements obtenus dans le cadre de coopération bilatérales, la CEA peut également être amenée à s'impliquer directement dans des projets de développement. C'est ainsi qu'une étude de préfaisabilité pour le développement d'une aquaculture industrielle de crevettes marines vient d'être réalisée en Tanzanie.

III.J WESTERN INDIAN OCEAN MARINE SCIENCE ASSOCIATION

WIOMSA ACTIVITIES DURING 1994-1997 WIOMSA ACTIVITIES DURING 1994-1997
INTRODUCTION

The Western Indian Ocean Marine Science Association (WIOMSA) wishes to extend its deep gratitude to IOCINCWIO for endorsing the establishment of the Association (Third Session in 1992 in Mauritius, IOCINCWIO-III\III\99). WIOMSA is grateful to IOCINCWIO for according the Chairman of WIOMSA liaison function between the Association and the Committee (IOCINCWIO- III\III\108). WIOMSA also would like to extend its gratefulness for the support provided by donor agencies e.g. Sida-SAREC and IOC

Recognizing the importance of sustaining the use and conservation of the marine resources of the Western Indian Ocean region, WIOMSA is actively participating in the building of marine science and technological capability of the WIO region by focusing on the following activities:

- improving communication among the scientific community of WIO states;
  assisting in the development of institutional linkages within the region;
  defining and developing research into problems which may require a national and/or regional approach to their solution;
  identifying workable mechanisms for the coordination of marine science research and development within the region;
- strengthening the awareness of marine sciences research and its importance in the development and management of the marine sector of WIO states;
- fostering the linkage between policy\management, science and stakeholders (community, NGOs, and private sectors)
  development and management of marine research grant programme.

ACTIVITIES

During it's first triennium, the focus of WIOMSA was;

  promote membership to the Association
  to promote networking amongst its membership. This was achieved through nomination of national coordinators, improved e-mail communication, production of WINDOW newsletter and WIOMSA Newsbrief
- establishment of partnerships with international organizations
- convening of meetings on specific issues
  collection of scientific information through MARG programme
- provision of scientific advice for management to member states.

In this context, WIOMSA presented the following key activities which were undertaken during the Inter-sessional period. These activities have been guided by very active and capable Board of Trustees, whose members have met five times.

Membership

WIOMSA has over 250 members - individuals and institutions - in the Western Indian Ocean (WIO) Region which includes the island states of Comoro, Madagascar, Mauritius, Seychelles and La Réunion (France), as well as mainland states Kenya, Mozambique, Somalia, South Africa and Tanzania. In addition, our 60 or more associate members are spread across some twenty countries outside the WIO region, from Sweden to Australia, Brazil to Japan.

Records of all members have been entered into a database set up in Microsoft Access at the

Secretariat.

Marine Research Grant Programme (MARG)

The support provided by MARG covers all subject areas of marine science and technology. However, particular emphasis is given to those areas that have received high priority within the development plans of the member states and as prioritized by Regional Committee for Investigations in the North and Central Western Indian Ocean (IOCINCWIO) and other regional action plans.

Over 20 MARG have been granted in the two years during which the programme has been operational, mainly for specific research projects based at scientific institutions of the region, but also to enable travel within the region for research or to participate in conferences and workshops in a overseas countries such as, South Africa, Netherlands and the USA.

As well as enabling young scientists of the region to develop their research skills and experience, these projects are demonstrating how marine science in the Western Indian Ocean can and must guide management decisions relating to sustainable utilization of coastal resources and conservation and development of coastal areas.

WIOMSA has worked closely with IOC in the management of these grants. Since the MARG grantees received the funds on their individual capacities and have been able to produce results and account for the funds, capacity for managing projects and grants is beginning to emerge in the region.
WorkshopsWorkshops

In response to requests from around the region to visit comparable areas where Integrated Coastal Area Management (ICAM) is being implemented WIOMSA has organized “The Experts and Practitioners Workshop on Integrated Coastal Area Management for Eastern Africa and the Island States” Tanga, Tanzania, 11-16 August, 1996. The workshop brought together approximately fifty participants from nine countries in the Western Indian Ocean region (Comoro, Eritrea, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, Tanzania), as well as experts from international organizations who supported the meeting. These included; The University of Rhode Island Coastal Resources Center; IUCN - The World Conservation Union; The United Nations Environment Programme; Food and Agricultural Organization of the United Nations; United States Agency for International Development (USAID); Swedish International Development Agency (Sida- SAREC), The World Bank and The Indian Ocean Commission Regional Environment Programme. Additional support to the meeting came from the Royal Netherlands Embassy (Local Environment Fund), Irish Aid, WWF Tanzania, and the KWS Netherlands Wetlands Conservation and Training Programme.

This provided a forum for exchange of information, ideas and expertise among the growing number of coastal management professionals who are attempting to implement ICM field programmes in the Western Indian Ocean region.

Marine Science Country Profile

The Marine Science Country Profile (MSCP) were produced within the framework of Intergovernmental Oceanographic Commission (IOC) - Western Indian Ocean Marine Science Association (WIOMSA) co-operation and as a contribution to the International Oceanographic Data and Information Exchange (IODE) programme. The Profiles have been prepared for the following countries in the region; Kenya, Tanzania, Mozambique, Seychelles, Comoro, Madagascar and Mauritius.

Partnerships and Support

Core support for the WIOMSA secretariat, including for the MARG Programme, has over the

past three years been and continues to be provided by the Swedish Agency for Research Co-operation with Developing Countries (Sida-SAREC) through the Intergovernmental Oceanographic Commission (IOC) of UNESCO under the East African Regional Marine Science Program.

WIOMSA is a member of IUCN - The World Conservation Union, and has worked closely with IUCN's regional office in Nairobi (EARO).

THE FIRST WIOMSA SCIENTIFIC SYMPOSIUM 2-3 MAY, 1997 MOMBASA, KENYATHE FIRST WIOMSA SCIENTIFIC SYMPOSIUM 2-3 MAY, 1997 MOMBASA, KENYA

The main theme of the Symposium was "Advances in Marine Science in Eastern Africa: Application of Scientific Knowledge in Marine and Coastal Management". In line with this theme, the objectives of the Scientific Symposium were as follows;

- assessment of scientific information in relation to coastal and marine management
  Critically examine the MARG programme and provide recommendations as to how the Programme could be strengthened from the perspective of individual grantees as well as the overall coverage and focus.
- to increase awareness of the MARG Programme

The workshop brought together approximately fifty participants from eight countries in the Western Indian Ocean region (Comoro, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Tanzania and Reunion), as well as other participants from countries such as Sweden, Nigeria, Germany, France, UK, and Belgium and representative from international organizations such as IOC of UNESCO and Sida-SAREC. Financial and material support for the Symposium was provided by Swedish International Development Agency (Sida-SAREC), IOC of UNESCO, Canadian International Development Agency (CIDA) and the Kenya Marine and Fisheries Research Institute (KMFRI)(host).

The symposium covered most fields of marine research including:-

- marine living resources - research for sustainable utilization
  ecosystem assessments - multidisciplinary research
  biodiversity assessments
  Pollution impacts- monitoring and evaluation techniques
  Physical environment - monitoring and assessments A total of 21 papers were presented including 13 papers of original studies.

RECOMMENDATIONS:

The following are areas which the Scientific Symposium highlighted:-

The Symposium acknowledged and commended the production of WIODIR by RECOSCIX-WIO and Marine Science Country Profile (MSCP) as tools for assessing capacity in marine sciences in the region. However, in order to match and identify gaps, the Symposium recommended that an assessment of capacity requirements on existing projects and programmes be undertaken.

Efforts should be made to direct research towards tapping indigenous knowledge and experience in resource use and management.

There is a need for producing periodic documents on the state of marine and coastal environment of the region which should be based on assessment and synthesis of existing information, for better management advice and future research work. This will assist in avoiding duplications and re- inventing the wheel!

The Symposium recognized the need to promote research aimed at assessing “carrying capacity” and/or “resilience” of ecosystems and their response to pressures generated by natural forces and human activities. This should be achieved through granting of MARG to inter-disciplinary teams comprised of scientists examining a) condition of habitats, b) Environmental pollution and c) the resource users (management systems and socio-economics). Furthermore, concentrate an amount of research on a long-term basis in specific study sites to promote integrated research programs in areas reflecting regional issues as well as provide the basis for development of predictive models.

WIOMSA recognizes the existence of large volumes of oceanographic date in isolated data basis in the region in manuscript forms. Such data are threatened to be lost and hence WIOMSA recommends the co-lation and rescue of historical oceanographic data under the GODAR

WIOMSA recognizes the importance of ecosystem approach to managing marine and coastal resources. In this regard the Symposium noted that two LMEs namely, the Somali Current and Agulhas Current have been identified in the WIO region which are of direct economic importance to Eastern Africa. However, based on existing information on bathymetry, hydrography and productivity, the Symposium recognize the Mascarene Plateau of the Indian Ocean as a discrete LME.

Significant development activities along the coast and nearshore waters such as mariculture and waste desposal systems, require oceanographic information in order to rationally manage them. The Symposium therefore recommended that research efforts concentrate in the coastal zone. However, every effort should be made for the experts from the region to participate in research cruises organized in the region including the planning for these cruises. This is in the realisation that the region does not have a dedicated regional oceanographic research vessel. The externally supported cruises should take cognizance of the deep sea water priorities set by regional processes in WIO.

The Symposium noted the significant contribution made by MARG and strongly recommended its continuance. Increasing the source of funds for MARG is crucial.

WIOMSA BOARD OF TRUSTEES AND GENERAL ASSEMBLY WIOMSA BOARD OF TRUSTEES AND GENERAL ASSEMBLY

Meeting of the outgoing Board of Trustees

The outgoing Board of Trustees met on the morning of 4th May 1997 and its main activity was to process and count election ballots for the electing new members of the Board . The balloting was cast by member through mail. A total of 144 ballots were received. The results of the voting (roll-call) was presented to the General Assembly for approval.

The role of WIOMSA and its relationship to IOCINCWIO was discussed and the following elaboration was made.

WIOMSA is a non-governmental, non-profit scientific organization. Its role is to stimulate marine scientific development in the region as specified in the objectives of the Association. WIOMSA facilitates the linkage of science to coastal communities and the private sector. WIOMSA provides management advice, based on the best science, at all levels of society. WIOMSA is in a unique position to be able to influence the sustainability of use of marine and coastal resources in WIO Region through the network of its members.

WIOMSA’s participation in IOCINCWIO provides a unique opportunity for the delivery of advice to the Committee as well as learning at first hand issues which are confronting the region identified by the Member States of the Region.

The work plan and activities of WIOMSA are therefore guided by priorities set by its General Assembly, national priorities of the countries in WIO Region and regional processes such IOCINCWIO.

WIOMSA First General Assembly:

The First General Assembly of WIOMSA met on 6th May 1997. To facilitate its work the members of the General Assembly set in five committees:

Constitutional Committee
Sustainability Committee (Fund raising)
- MARG Committee
- Programme Committee

National Coordination Committee

These committee discussed and deliberated on issues within their terms of reference and made recommendations for the approval of the WIOMSA General Assembly.

In summary, the General Assembly of WIOMSA:

- Approved the Constitution with minor amendments. However, directed the Board of Trustees to study and recommend addition of an article that will guide the election process of Board Members. The Board should also study and recommend the best representation of the Membership.
  Discuss and provide guidance on sustainability of WIOMSA activities including the development of a strategy for fund raising
- Approved the suggested national coordinators and the recommended Terms of Reference. However, directed the Board to study and recommend to the next General Assembly the best method for selecting national coordinators
  Approved new members of the Board according to the election results.
- Approved the recommended improvements on applications of MARG grants
- Endorsed the recommendations of the Scientific Symposium as further elaborated by the Programme Committee
  Recognises and endorses International Year of the Reef (IYOR) and International Year of the Ocean (IYO). Specifically recommends the following;
  the preparation of an IYOR poster on coral reef research and conservation in the WIO.
  compilation/directory of IYOR/IYO activities in the region and their presentation in WIOMSA Newsbrief and Windows Newsletter.

The new Board members are as follows:

- Dr. E. Okemwa of Kenya, representing members from Mainland states
  Prof. A. Semesi and Dr. J. Francis from the host country
  Dr. N. Shah of Seychelles, representing members from the islands states
  Prof. O. Linden and Dr. M. Ngoile, free seats

ANNEX IV

LIST OF WORKING DOCUMENTS

WORKING DOCUMENTS

Document Code	Title	Lang.
IOCINCWIO-IV/1 prov.	Provisional Agenda	E, F
IOCINCWIO-IV/1 Add. prov.	Provisional Timetable	E
IOCINCWIO-IV/2	Annotated Provisional Agenda	E, F
IOCINCWIO-IV/3	Draft Summary Report (prepared during the Session)	E
IOCINCWIO-IV/4 prov.	Provisional List of Documents	E
IOCINCWIO-IV/5 prov.	Provisional List of Participants	E, F
IOCINCWIO-IV/6	Report of the Executive Secretary on Intersessional Activities	E
IOCINCWIO-IV/7	The IOC-SAREC Marine Science Programme 1990-1995: A Review	E
IOCINCWIO-IV/7 Add.	The IOC-SAREC Marine Science Programme September 1995 - April 1997	E
IOCINCWIO-IV/8	Sea Level Observation in the IOCINCWIO region	E
IOCINCWIO-IV/9	Some aspects of Ocean-related links to the UNFCCC	E
IOCINCWIO-IV/10	A Proposal for Harmful Algae Research in the IOCINCWIO region	E
IOCINCWIO-IV/11	Project Proposal: Mapping Seagrass Beds from Satellite Images in the IOCINCWIO Region for Management Purposes	E
IOCINCWIO-IV/12	Identification of Priority Actions in the Field of Marine and Coastal Biodiversity in the IOCINCWIO region	E
IOCINCWIO-IV/13	Development of a Regional Ocean Data and information network for the IOCINCWIO region (ODINEA)	E

IOCINCWIO-IV/14	RECOSCIX-WIO: Providing Scientific Information to Marine Scientists in the Western Indian Ocean region	E
IOCINCWIO-IV/15	Co-operation between the IOC and WMO	E
IOCINCWIO-IV/16	Summary on the State of implementation of the OSNLR Pilot Study Relative to Coastal Erosion of the Western Indian Ocean	E
IOCINCWIO-IV/17	Western Indian Ocean Marine Science Association (WIOMSA)	E
IOCINCWIO-IV/18	Recommendations from the IOC-IUCN-NOAA Consultative Meeting on Large Marine Ecosystems 23-24 January 1997	E
IOCINCWIO-IV/19	Coastal Monitoring in East Africa	E

ANNEX V

LIST OF PARTICIPANTS

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ANNEX VII

LIST OF ACRONYMS

ACC	Administrative Committee on Coordination (UN)
ASFA	Aquatic Sciences and Fisheries Abstracts
AUPELF-UREF	Association des Universités pour l'Enseignement en Langue Française (France)
BADC	Belgian Administration for Development Co-operation (Belgium)
CD-ROM	Compact Disk - Read Only Memory
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (France)
CMM	Commission for Marine Meteorology (WMO)
CNRO	Centre National de Recherches Océanographiques (Madagascar)
COI	Commission de l'Océan Indien (Indian Ocean Commission)
COI/UE	Commission de l'Océan Indien / Union Européenne
COI/FED	Commission de l'Océan Indien / Fonds de Développement Européen (replaced by COI/UE)
CORP-WIO	Commonwealth Ocean Resources Programme for the Western Indian Ocean (CSC)
CSC	Commonwealth Science Council
CSD	Commission on Sustainable Development (UN)
CSI	Coastal Regions and Small Islands (UNESCO)
CZAR	Coastal Zone as a Resource by itself
DANIDA	Danish Agency for International Development (Denmark)
DBCP	Data Buoy Co-operation Panel (WMO-IOC)
DNA	Designated National Agency (IODE)
EAF	East African Action Plan
EAF/RCU	East African Action Plan/ Regional Co-ordinating Unit (UNEP)
ECA	Economic Commission for Africa (UN)
ECOMAMA	Ecological Marine Management
ECOSOC	Economic and Social Council (UN)

FAME	Fundamental and Applied Marine Ecology (Belgium)
FAO	Food and Agriculture Organization of the United Nations
GAO	Gestionnaire d'Applications Océanographiques (ORSTOM)
GE-OSLR	Group of Experts on OSLR
GCOS	Global Climate Observing System (WMO-ICSU-IOC-UNEP)
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environment Facility (World Bank-UNEP-UNDP)
GEO	Global Environment Outlook
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (IMO-FAO-UNESCO-WMO-WHO-IAEA-UN-UNEP)
GIPME/MARPOL MON	Global Investigation of Pollution in the Marine Environment/Marine Pollution Monitoring System (IOC)
GIS	Geographic Information System
GLODIR	Global Directory of Marine (and Freshwater) Scientists (IODE)
GLOSS	Global Sea-Level Observing System (IOC)
GODAR	Global Oceanographic Data Archaeology and Rescue Project (IODE)
GOOS	Global Ocean Observing System (IOC-WMO-UNEP-ICSU)
GPA-LBA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
GREEN	Groupe de renforcement des efforts environnementaux nationaux (France)
ICZM	Integrated Coastal Zone Management
IHO	International Hydrographic Organization
IHP	International Hydrological Programme (UNESCO)
IBPIO	International Buoy Programme for the Indian Ocean (DBCP)
IBCWIO	International Bathymetric Chart of the Western Indian Ocean /IOC/
ICAM	Integrated Coastal Area Management (see also ICZM)
ICRI	International Coral Reef Initiative
IFREMER	Institut français de recherche pour l'exploitation de la mer (France)
IGBP	International Geosphere-Biosphere Programme A Study of Global Change (ICSU); also known as: Global Change Programme
IGOSS	Integrated Global Ocean Services System (IOC-WMO)
IOC	Intergovernmental Oceanographic Commission (UNESCO)

IOCINCWIO	IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean; short name: IOC Regional Committee for IOCINCWIO
IOCINDIO	IOC Regional Committee for the Central Indian Ocean; short name: IOC Regional Committee for IOCINDIO
IMO	International Maritime Organization
IOMAC	Organization for Indian Ocean Marine Affairs Co-operation
IODE	International Oceanographic Data and Information Exchange (IOC)
IUCN	World Conservation Union
JGOFS	Joint Global Ocean Flux Study (SCOR-IOC)
KBP	Kenya Belgium Project in Marine Sciences (Kenya, Belgium)
KMFRI	Kenya Marine and Fisheries Research Institute (Kenya)
LME	Large Marine Ecosystems
LOICZ	Land-Ocean Interaction in the Coastal Zone (IGBP)
LUC	Limburgs Universitair Centrum (Belgium)
MAB	Programme on Man and the Biosphere (UNESCO)
MARG	Marine Research Grant (WIOMSA)
MMAP	Global Plan of Action for Marine Mammals
MOST	Management of Social Transformations (UNESCO)
MOU	Memorandum of Understanding
MSCP	Marine Science Country Profile
NGO	Non Governmental Organization
NOAA	National Oceanic and Atmospheric Administration (USA)
NODC	National Oceanographic Data Centre (IODE)
ODC	Ocean Dynamics and Climate (IOC)
ODINEA	Ocean Data and Information Network for Eastern Africa (IODE)
ORSTOM	Institut français de recherche scientifique pour le développement en coopération (France)
OSLR	Ocean Science in Relation to Living Resources
OSNLR	Ocean Science in Relation to Non-Living Resources
PACSICOM	Pan-African Conference on Sustainable Integrated Coastal Management (Mozambique-UNESCO)

PSMSL	Permanent Service of Mean Sea Level (United Kingdom)
RECOSCIX-WIO	Regional Co-operation in Scientific Information Exchange in the Western Indian Ocean Region
SAREC	Swedish Agency for Research Co-operation with Developing Countries (of Sida)
SEAS	Survey of Environment Assisted by Satellite
SFA	Seychelles Fishing Authority (Seychelles)
Sida	Swedish International Development Agency (Sweden)
SIDS	Small Island Developing States
SISMER	Systemes d'informations scientifiques pour la mer (IFREMER)
SOOP	Ship-of-Opportunity Programme
TEMA	Training, Education, and Mutual Assistance (IOC)
TEMA/CB	Training, Education, Mutual Assistance and Capacity Building (IOC)
TOGA	Tropical Ocean and Global Atmosphere (WCRP)
UA	University of Antwerp (Belgium)
ULM	Ultra Léger Morotorisé (Ultralight Aircraft)
UN	United Nations
UNCED	United Nations Conference on Environment and Development (Rio de Janeiro, 1992)
UNCLOS	United Nations Convention on the Law of the Sea (Montego Bay, 1982)
UN/DOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
URMO	UNESCO-IOC Register on Marine Organisms (URMO)
VUB	Free University of Brussels (Belgium)
VLIR	Flemish Inter-University Council (Belgium)
WCRP	World Climate Research Programme (WMO-ICSU-IOC)
WDC	World Data Centre (IODE)
WINDOW	Western Indian Ocean Waters (RECOSCIX-WIO)
WIO	Western Indian Ocean

WIODIR	Western Indian Ocean Directory of Marine Scientists (RECOSCIX-WIO)
WIOMSA	Western Indian Ocean Marine Science Association
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment (WCRP)
WWW	World Wide Web
XBT	Expendable Bathythermograph