



Seventeenth Session of the Assembly

Paris, 25 February – 11 March 1993

UNESCO

In this Series

Languages

Reports of Governing and Major Subsidiary Bodies, which was initiated at the beginning of 1984, the reports of the following meetings have already been issued:

1. Eleventh Session of the Working Committee on International Oceanographic Data Exchange E, F, S, R
2. Seventeenth Session of the Executive Council E, F, S, R, Ar
3. Fourth Session of the Working Committee for Training, Education and Mutual Assistance E, F, S, R
4. Fifth Session of the Working Committee for the Global Investigation of Pollution in the Marine Environment E, F, S, R
5. First Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions E, F, S
6. Third Session of the *ad hoc* Task team to Study the Implications, for the Commission, of the UN Convention on the Law of the Sea and the New Ocean Regime E, F, S, R
7. First Session of the Programme Group on Ocean Processes and Climate E, F, S, R
8. Eighteenth Session of the Executive Council E, F, S, R, Ar
9. Thirteenth Session of the Assembly E, F, S, R, Ar
10. Tenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific
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12. Sixth Session of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment E, F, S
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14. Second Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions E, F, S
15. First Session of the IOC Regional Committee for the Central Eastern Atlantic E, F, S
16. Second Session of the IOC Programme Group on Ocean Processes and Climate E, F, S
17. Twentieth Session of the Executive Council E, F, S, R, Ar
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20. Eleventh Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific E, F, S, R
21. Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean E, F
22. Fourth Session of the IOC Regional Committee for the Western Pacific English only
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Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies

Seventeenth Session of the Assembly

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1. OPENING

1 The Chairman, Dr. Manuel Murillo, opened the Seventeenth Session of the IOC Assembly at 10:00 on 25 February 1993.

2 The Assembly received and noted with appreciation statements by the Chairman and by the Director-General of UNESCO, Mr. Federico Mayor, on the occasion of the opening of the Assembly (Annex III - A and B).

3 The Chairman called on the participants to stand in silence for one minute as a mark of respect for distinguished oceanographers who had passed away since the Sixteenth Session. Special reference was made to Roger Revelle, Henry Stommel and Börje Kullenberg.

2. BRUUN MEMORIAL LECTURES

4 The Assembly noted that the theme of the Bruun Memorial Lectures, to be given on 25 and 26 February, would be "The Role of Marine Research, Systematic Observations and Related Capacity Building and Technology Development for Ocean and Coastal Zone Sustainable Development". These would be presented by Dr. John D. Woods and Dr. G.O.P Obasi. (Abstracts are given in Annex V). The texts will be published in the IOC Technical Series. The Assembly noted the substantial exhibition on new ocean observation technology, including hardware and software, with related information on technology transfer, that had been arranged in the Conference hall in response to the proposal of the Sixteenth Session of the Assembly, and expressed its appreciation to those involved in the organization of this exhibition.

3. ADMINISTRATIVE ARRANGEMENTS

3.1 ADOPTION OF THE AGENDA

5 The Assembly adopted the Agenda (Annex I, hereto).

3.2 DESIGNATION OF THE RAPPORTEUR

6 The Assembly accepted the proposal by Norway, seconded by Colombia, to designate Dr. Juan Accorinti of Argentina as Rapporteur for the Session

3.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

7 The Assembly noted United Nations General Assembly Resolution 47/1, adopted on 22 September 1992, and Decision No. 86 of the 140th Session of the UNESCO Executive Board, concerning the continued membership of Yugoslavia in United Nations bodies. The Assembly voted to follow the example of the UNESCO Executive Board, deciding that Yugoslavia should not be allowed to participate in the Assembly.

8 The Assembly noted that, under Rule of Procedure No. 12 (2), the Executive Council, acting as the Steering Committee for the Assembly, had decided that the Nominations Committee for the Seventeenth Session should be composed of Poland (Chairman), Argentina, China, France, Islamic Republic of Iran, Kenya, Republic of Korea, Russian Federation, and the United States of America.

9 As proposed by the Executive Council, the Assembly accepted the establishment of a Technical Review Committee for Resolutions with the following composition: Egypt (Chairman), Algeria, Argentina, Brazil, China, France, Russian Federation, United Kingdom and United States of America.

10 The Assembly adopted the timetable (Document IOC-XVII/1 Add. prov. rev.) with minor modifications.

- 11 The List of Working Documents is given in Annex VIII. The list of Participants is given in Annex VII. The List of Acronyms is given in Annex IX.

4. REPORT ON THE ACTIVITIES, 1991-1992

4.1 SECRETARY'S REPORT ON INTERSESSIONAL ACTIVITIES

- 12 In presenting his Report on Intersessional Activities (Documents IOC-XVII/6 and 6 Suppl.), the Secretary provided an overview of the major activities which had been carried out, and highlighted those trends that had influenced IOC programme implementation during the 1991-1992 period. He reviewed in particular the implementation of the Resolutions of the Sixteenth Session of the Assembly.

- 13 He pointed to the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, June 1992) as a major factor influencing the work of the IOC during the intersessional period. Substantial efforts had been made to prepare for and participate in this event, and had resulted in the recognition of the IOC in Agenda 21, the framework for action resulting from UNCED. The work of IOC should also contribute to the implementation of the Conventions signed at UNCED, namely the UN 1992 Framework Convention on Climate Change (FCCC) and the Convention on Biological Diversity (CBD). As a consequence, IOC now has a responsibility to implement certain actions and this will necessitate an increase in Member State recognition of and participation in IOC.

- 14 IOC intends to play a leading role in the implementation of GOOS and in related training, education and technical assistance. The Secretary stressed the importance of efficiency, stability and continuity of existing IOC programmes.

- 15 The regional perspective had been emphasized at the UNCED; thus the IOC regional subsidiary bodies need to be used as mechanisms for pursuing IOC activities in the follow-up to the Conference. This is particularly true in the case of coastal and shelf sea areas, which were also a focus of UNCED, and IOC needs to ensure the provision of scientific input to enable responsible decision-making in the context of sustainable development.

- 16 He summarized the staffing and resource situation of the Secretariat, noting with appreciation the contributions made by a number of Member States as well as the commitment of the Director-General to provide additional resources.

- 17 Many Delegations commented with appreciation on the report on intersessional activities and emphasized the need for a balanced or equitable programme, including ocean sciences, ocean observations and related services and training, education and mutual assistance, and capacity building. The development of GOOS was strongly supported, but should not occur at the expense of other programmes. The great importance of TEMA activities was stressed, *inter alia* in view of the need to ensure that all Member States can participate in international co-operative research and related services and thus make use of the data and information to be obtained through GOOS. The need to work more at a regional basis was emphasized, including strengthening the regional subsidiary bodies, as the major mechanism to implement the IOC programmes at this level.

- 18 The Delegate of Germany stressed that IOC's structure, budget and secretariat are tailored to the promotion and co-ordination of science and of services in support of science. Any transition to the operation of large-scale monitoring, observing and forecasting systems, is still far beyond the present scope of IOC. He went on to state that, while recognizing the importance of services in IOC, Germany continues to emphasize TEMA in its IOC-related activities.

- 19 Germany will support further IOC training courses in the Indian Ocean and Pacific regions, thereby strongly supporting the development of GOOS. The Centre for Tropical Marine Ecology in Bremen offers specialized courses in various fields of coastal ecology and plans training projects in various regions.

- 20 Delegations emphasized the role of the IOC as a promoter of marine sciences and their role in ensuring sustainable development and in helping to solve problems of importance to society. In this context, the need for the IOC programmes to provide practical, useful results and products was stressed. The great importance of UNCED was acknowledged. It was considered essential to demonstrate that marine research and systematic ocean observations can respond and provide solutions to many societal problems identified by UNCED. The need to address the problems of the coastal zone was emphasized as well as the concept of integrated management, and to provide the scientific and fact-finding bases to that effect. Much emphasis was placed on the need for IOC follow-up to the Conference.
- 21 The Assembly also stressed the need to support the least developed countries, and to devote as much effort as possible to reducing the gap between the various stages of economic development. Requirements in this respect would call for a well-balanced programme with a large TEMA component. The need to strengthen IOC's visibility within UNESCO, as an affiliated body with functional autonomy, was firmly placed on record.
- 22 In this context, the Assembly reiterated its directive that any formal negotiation by IOC Officers and the Secretariat on matters of policy, including location or co-location of the IOC Secretariat or part of it, requires a previous decision by the major governing body of the Commission, namely the IOC Assembly.
- 23 On the same topic, the Delegate of the USA requested permission to read a statement on behalf of the Delegate of Australia, who had previously departed the Assembly.
- 24 The Chairman having granted the requested permission, the Delegate of the USA read the statement reproduced hereunder:
- 25 *"The Delegate of Australia encourages informal discussions and points out their value. He therefore requests that no inference be made to there having been a consensus on any contrary view on the part of the Assembly. UNCED had urged organizations to explore better ways of conducting business, the Director-General's speech to the Assembly had encouraged this, and IOC's financial deficiencies mandate new approaches".*
- 26 The Delegate of the USA expressed full confidence in the Secretary's exploring any new management options and reporting back to Member States for guidance, and opposed any measures or instructions that would hamper or interfere with such explorations which might, conceivably, solve some of the management, technical, programme and financial problems confronting the IOC.
- 27 The Chairman acknowledged the statement and entertained clarifications from some other delegates. The Chairman then ruled that the statement read by the Delegate of the USA should be included in the report of the Session, on the understanding that discussions had centred around divergent opinions on informal negotiations.
- 28 The IOC has an important role to play in awareness creation at the governmental level, in mobilizing the scientific communities in the follow-up to UNCED and in helping to implement the Conventions (FCCC and Biodiversity). Initiatives already taken to start the follow-up to UNCED were noted with appreciation, and it was stressed that full advantage should be taken of the potential role of the IOC in relation to marine biodiversity and of the relevance of IOC programmes to this follow-up process.
- 29 The Assembly suggested that future reports on intersessional activities should be structured into three or four major sections, and welcomed the overview provided on the implementation of the Resolutions of the last Assembly and Executive Council.
- 30 The Assembly agreed that there is a need to prioritize, and emphasized this as a matter to be considered in relation to DOSS. An overall guiding principle must be a well-balanced and equitable programme. The Assembly noted the need to strengthen the IOC Secretariat and its ties with UNESCO, including provision by UNESCO of a larger portion of staff to the Secretariat than is at present the case.

31 **The Assembly recognized and emphasized the need for a stronger involvement of Member States in the activities of the IOC and urged delegations to make all efforts in this direction at the national level. The IOC must be recognized by the Member States as their mechanism and tool for co-operation purposes.**

32 **In conclusion, the Assembly endorsed the report on intersessional activities and expressed their thanks and great appreciation to the Secretary and to the staff of the Secretariat for the work done, as was well reflected in the report.**

33 **The Delegate of Portugal stated that, in connection with the discussion of the Report of the Secretary on Intersessional Activities, the Assembly had urged that effective implementation be given to the decisions of the IOC and UNESCO governing bodies, as well as to the directives of the Director-General of UNESCO, aimed at an integrated programme covering both IOC and marine science-related issues.**

4.2 REPORT OF THE COMMISSION'S ACTIVITIES 1991-1992

34 **The Secretary presented the draft Biennial Report (Document IOC-XVII/9) to the Commission which, in accordance with the IOC Statutes, will be transmitted to the 27th General Conference of UNESCO. He reminded Delegates, that in view of the limited number of pages allocated for this report, it could only provide highlights of achievements during 1991-92. He referred to the importance of the Commission's regional activities addressing issues defined within the relevant regions. He also recalled that very promising results had been achieved through TOGA as regards ability to adequately forecast climate variabilities and environmentally-related disasters with socio-economic consequences. This ability would in turn undoubtedly lead to an enhanced competence in peace-keeping and in prevention of conflicts.**

35 **Many Delegations took the floor to approve the Biennial Report for 1991-1992 with some minor additions, particularly concerning regional activities, which will be included in the final version.**

36 **The Assembly adopted the Biennial Report for 1991-1992 for transmission to the General Conference of UNESCO. The Assembly instructed the Secretary to combine the reporting of present agenda items 4.1 and 4.2 to future Assemblies, but to continue to present two documents for consideration by future Sessions.**

37 **The Assembly also instructed the Secretary to endeavor to review the state of implementation of resolutions of Assemblies and Executive Councils.**

38 **The Assembly noted with appreciation the offer by the Republic of Korea to use their research vessels in support of WESTPAC-TEMA programme activities.**

39 **The Assembly also noted with appreciation the statement made by the Delegate of the Russian Federation on the intention of his country to continue, probably in 1993 or 1994, the professional staff support for the Commission's Ocean Mapping Programme that had been interrupted in 1992.**

40 **Referring to the potential of many countries to host meetings in support of the Commission's programmes, the Delegate of Poland offered to organize expert meetings in his country. The Assembly noted this suggestion and expressed its thanks to the Delegate of Poland for his generous offer.**

5. OCEAN SCIENCES

5.1 THE OCEAN'S ROLE IN CLIMATE AND GLOBAL CHANGE: OCEAN PROCESSES AND CLIMATE

5.1.1 Report on WCRP and JSC

41 On behalf of the Joint Scientific Committee (JSC), the Director of the World Climate Research Programme (WCRP), Prof. P. Morel, presented a first-time report to the IOC Assembly on this international research programme that, since January 1993, had become a joint activity sponsored by the IOC, WMO and ICSU (Document IOC-XVII/8 Annex 3). Reflecting this new co-sponsorship by IOC, the membership of the JSC was expanded to eighteen to include six ocean scientists. It will hold its first meeting under this new arrangement in March 1993. Prof. Morel briefly described the Global Energy and Water Cycle Experiment (GEWEX), and two new programmes, the Arctic Climate System Study (ACSYS) and Stratospheric Processes and their Role in Climate (SPARC), before reporting on the main ocean-related programmes of the WCRP, i.e., TOGA and WOCE. In so doing, he highlighted the multi-disciplinary nature of the problem of predicting climate variations. Regarding TOGA and WOCE, these are proceeding according to plan with their observational programmes in full swing. The TOGA data set acquired so far is available on CD-ROM upon request. TOGA has already demonstrated that the air-sea coupling in the tropics is strong and that models have achieved remarkable success at predictability of the ENSO up to one year in advance. The establishment of an International Research Institute for Climate Prediction to build on the initial TOGA success will be proposed to the Intergovernmental Meeting on the World Climate Programme (IGMWCP) in April 1993.

42 He remarked that preliminary results from ERS-1 and TOPEX-POSEIDON indicate that these satellites will achieve the promised results. He further asserted that WOCE will meet its objective to describe the global ocean circulation, provided all the commitments already made by nations are adhered to.

43 Prof. Morel pointed out one present shortcoming that needs to be addressed: the lack of a plan to merge all the different types of data being acquired from the various observation platforms, e.g., satellites, floats, ships.

44 The results of TOGA and WOCE are being used as a basis to develop a follow-up programme focused on Climate Variability and Predictability (CLIVAR). It may be launched by JSC at its next session in March 1993. It is envisaged that CLIVAR will address climate variability on all time scales from interannual to decadal or even century.

45 Prof. Morel reminded the Assembly that the OOSDP had been created jointly by CCCO and JSC, initially, as a scientific effort. In view of the operational focus being put on OOSDP by GOOS and GCOS, he requested that JSC be informed in precise language as to any intended re-statement of the OOSDP reporting channels and responsibilities vis-a-vis science and operational requirements.

46 The Assembly expressed continued strong support for the WCRP and put on record its satisfaction with the growing partnerships developing between the ocean and atmospheric science communities, as well as between international and intergovernmental agencies. The Secretary was encouraged to take every opportunity to reciprocate the goodwill being expressed by these organizations and not to retreat from working closely together in the future, particularly with regard to the upcoming IGMWCP, Agenda 21, and the IPCC Working Groups and the Framework Convention on Climate Change (FCCC) in the autumn of 1994. Many nations are establishing national centres/institutes to provide a focus for government efforts related to ocean issues of climate change. Several Delegates pointed out that the Indian Ocean had not been adequately studied and that the early WCRP results demonstrated that climate prediction issues are broader than greenhouse warming; they include processes related to the ENSO phenomenon, western boundary current meanders, the monsoon and storm surges. Other Delegates cautioned that, notwithstanding the early successes in predicting El Niño in the Pacific, the scientific challenges of the coupled ocean-atmospheric system still lay ahead.

47 The Delegation of Brazil informed the Assembly that Brazil had launched a new satellite capable of collecting ocean and meteo data and that some data channels were still available for use by other countries. The Delegation also informed that the Brazilian Agency for Space Research (INPE) is willing to act as a regional centre for the Inter-American Institute for Global Change Research.

48 The Assembly emphasized that balance must be maintained between science, service and training in pursuit of the WCRP and the Global Ocean Observing System, and that TEMA requirements must be met. All nations have to ensure that GCOS and GOOS will be complementary and that their products will lead to better climate services.

49 The Assembly agreed that a new OOSDP would have to be considered as a follow-up to the present Panel when it presents its final report in December 1994. The Assembly suggested that the Secretary review the terms of reference of the present OOSDP in order to define complementary needs for GOOS, and agreed that the present OOSDP should complete the work for and within WCRP, and in support of GOOS and GCOS.

5.1.2 Ocean Dynamics and Circulation on the Continental Shelf

50 Dr. Klaus Voigt, Deputy Secretary IOC, introduced this Agenda Item, referring to the Action Paper for the Assembly (Document IOC-XVII/8), to the Expert Consultation for the IOC Programme on Coastal Ocean Advanced Science and Technology Study (IOC Workshop Report No. 73), and to the Bruun Memorial Lectures, 1991: Modelling and Prediction in Marine Science (IOC Technical Series No. 39).

51 The Deputy Secretary reviewed progress made in this respect during the intersessional period and indicated that consultations and exchange of information had taken place on relevant programmes, e.g., GIPME, OSLR, COMAR, JGOFS and LOICZ. The proposal for the GOOS pilot project on coastal ocean circulation was prepared and distributed to the Second Session of the IOC Sub-Commission for WESTPAC and the First Session of the IOC Committee for GOOS.

52 He emphasized that, also as follow-up of UNCED Agenda 21 (Chapter 17), basic scientific understanding of coastal processes would provide vital information for integrated coastal zone management and sustainable use of marine resources, thereby helping, as has been stated previously, to avoid potential conflicts at national and regional levels.

53 Noting the importance attached by UNCED in Sections "A" and "E" of Chapter 17 of Agenda 21, the Assembly stressed that scientific research in the coastal zone should be an essential element for the coastal zone management and study of climate change and its impacts in the coastal area.

54 Several Delegates informed the Assembly of on-going national and regional projects in the field of scientific research in their coastal areas and expressed the hope that appropriate co-ordination would be further carried out by IOC in order to avoid duplication of efforts due to lack of co-ordination.

55 The Assembly adopted Resolution XVII-1.

5.1.3 IGBP Ocean Related Projects (including JGOFS, LOICZ)

56 Dr. Neil Andersen, who introduced the Item, restricted his presentation to JGOFS and LOICZ, noting that the other important programme, GLOBEC, would be introduced under Agenda Item 5.2, OSLR.

57 Dr. Andersen informed the Assembly that JGOFS, which is a climate change research initiative, is well under way. A North Atlantic Pilot Project has been completed with the results contained in a dedicated issue of Deep Sea Research. A major part of an Equatorial Pacific Ocean Process Study has just been completed and workshops to discuss and evaluate the data are scheduled for late 1993.

58 An Arabian Sea Process Study is scheduled to be launched in October 1994. In preparation for this, IOC, within the framework of the GIPME programme, has produced a set of JGOFS methodology protocols based on those employed at the JGOFS Time Series Station in Bermuda. This is being published in the IOC Manuals and Guides Series and will be distributed shortly. In addition, a number of national and regional training courses to introduce the protocols will be organized by IOC. Two such courses are scheduled already, one in Mombasa in the last quarter of 1993, being supported by Germany, and another in Pakistan in the third quarter of 1993 with support from the Pakistan-USA Joint Co-operation Project. Another course proposed to be held in the Sultanate of Oman is still under discussion as is the proposed establishment of a JGOFS Time Series Station off the coast of Oman. As part of the training scheme, visits are being arranged to JGOFS Time Series Stations in Bermuda and Hawaii. Some Pakistani scientists have already visited Bermuda as part of this scheme. In 1995-96, attention will be turned to the Southern Ocean.

59 With regard to LOICZ, Dr. Andersen said this programme was still in its formulative stage but would be ready for implementation in the near future. He noted, however, that even at this stage, it was essential to ensure close co-ordination of LOICZ with JGOFS as they both represent considerations dealing with the continental margins.

60 The Delegate of Cuba remarked that, as important as LOICZ and IGBP are, on the whole, the information on them from the IOC Secretariat had been minimal. He also asked the Chairman of IOC to enlighten the Assembly on his participation in setting up the Inter-American Institute for Global Change Research. The Secretary IOC responded that there exists a special IGBP Secretariat which is active in disseminating information on the whole IGBP Programme and LOICZ in particular. The Secretary IOC and the Executive Secretary SCOR informed the Assembly that a meeting had been organized by ICSU in January 1993 in Ensenada, Mexico, in order to review the programme. The IOC Chairman and the Delegate of Argentina explained individually that the Inter-American Institute (IAI) for Global Change Research was set-up on 13 May 1992 and that it is envisioned as a distributed network throughout the Americas, which will conduct and sponsor basic research on global change processes of special importance and, in some cases unique to, the region.

61 The Delegate of Venezuela emphasized the need for liaison with IGBP programmes at the national level and informed the Assembly that Venezuela had made considerable progress in planning the establishment of a JGOFS related Time Series Station in the Cariaco Basin in co-operation with the USA.

62 The Representative of SCOR noted that the scientific plan for LOICZ had been accepted at the meeting of the IGBP Steering Committee in Ensenada, Mexico, 6-8 May 1992 and that the Chairmen of LOICZ, GLOBEC and GOEYS (Global Ocean Euphotic Zone Study) would meet in the near future to clarify the role of their various programmes.

63 The Delegate of Canada pointed out the value of geological records in unravelling past climate change processes and expressed the wish to see the issue of IOC-IGBP interaction discussed at the proposed IOC Coastal Zone Meeting.

64 The Assembly expressed satisfaction with the efforts of the IOC Secretary to interface IOC programmes with IGBP projects. The Assembly encouraged the Secretary IOC to continue to pursue even closer collaboration with IGBP and ICSU, leading towards a more formal relation between IOC and IGBP, noting that the full benefits of such collaboration will become even more evident as some of the IGBP projects become fully operational and begin to yield results.

5.2 OCEAN SCIENCES IN RELATION TO LIVING RESOURCES (OSLR)

65 Dr. Geoffrey Laurence, Technical Secretary for OSLR, presented the case for re-focusing OSLR as a result of changing priorities and new emphases.

- 66 He proposed organizational changes, the establishment of a permanent Technical Secretary position, and the formation of an Intergovernmental Committee of National Representatives to replace the existing Guiding Group of Experts. The national representatives will be appointed by the relevant National Committees, in accordance with IOC procedures.
- 67 The proposed structural changes in the OSLR Programme included elements for Harmful Algal Blooms (HAB), the Global Ocean Observing System (GOOS) and Ecosystem Dynamics in Relation to Living Resources (EDLR).
- 68 He also suggested that a higher level of integration be achieved between OSLR activities and the needs of Member States within the Regional Subsidiary Bodies. Regional representatives should be members of the Intergovernmental Committee for OSLR, and the Technical Secretary should attend and participate in regional meetings.
- 69 Special mention was made of the interactive relationships of IOC/OSLR with ICES and SCOR. The partnerships have been beneficial and productive, with each organization jointly supporting a variety of scientific studies.
- 70 The Chairman for the IPHAB, Dr. Bernt I. Dybern, informed the Assembly of the developments of the HAB Programme. Harmful algal blooms should be considered as a global problem. Only a few countries are able to approach these events properly in a multi-disciplinary way. The formation of a group of experts is recommended because of very specific questions related to oceanography, taxonomy, toxicology, etc. The establishment of an IOC Programme Office is required at the IOC Secretariat in order to further develop and co-ordinate programme activities, identification of resources and needs, co-operation between institutes, possible funding, and interaction with other global/regional programmes.
- 71 Dr. John Gamble stressed the importance of using the Continuous Plankton Recorder (CPR) as a component of the Marine Living Resources Module of GOOS. The CPR will be used to identify key components for the evaluation of changes in planktonic ecosystems. Results will establish the relationships between plankton dynamics and climate.
- 72 Dr. Brian Rothschild presented SCOR-IOC co-operation within International Global Ocean Ecosystem Dynamics (GLOBEC-INT). He explained that the main goal of GLOBEC-INT is to understand relationships between living resources within a context of climate changes and anthropogenic variations. The Programme has adopted a general strategy and is now developing the CORE Programme (Population Dynamics and Physical Variability, Sampling and Observations System, Numerical Models, GLOBEC Prudence). A strategy has also been devised for applications in specific ecological provinces and fishery regimes.
- 73 Dr. Kenneth Sherman outlined progress in planning and development of the UN-GEF-LME Regional Studies. He indicated that funding had been secured from the World Bank for two regions - the Gulf of Guinea and the Yellow Sea - and others were under consideration. A core scientific strategy has been developed for these programmes. The inclusion of these studies within the GOOS, as a living resource component, was advocated.
- 74 The Assembly responded strongly to the Session issues with twenty-seven Delegations providing comment regarding their interests and participation in OSLR activities.
- 75 There was a general endorsement of the continuation of a programme on Ocean Sciences in Relation to Living Resources within the IOC and jointly sponsored by FAO.
- 76 The Assembly noted with concern the need for a permanent Technical Secretary for OSLR and emphasized that UNESCO should be urged to provide a full-time staff member for this core programme.
- 77 The Assembly welcomed the indication from the United States that it would consider the partial financing of a permanent post as Technical Secretary for OSLR.

- 78 **The Delegate of Denmark informed the Assembly of the plans to establish a scientific project and communication centre on Harmful Algal Blooms (HAB) at the University of Copenhagen as a Danish contribution to the IOC-FAO HAB Programme. The proposed centre will, in particular, focus on the TEMA and network components.**
- 79 **The Delegate of Spain informed the Assembly of the willingness of Spain to also house a HAB scientific project and communication centre at the Instituto Español de Oceanografía in Vigo.**
- 80 **The Assembly welcomed the establishment by Denmark and Spain of HAB science and communication centres as a contribution to the OSLR/HAB Programme. Such centres should be complementary to and co-ordinated with other HAB Programme activities through the HAB Programme Office at the IOC Secretariat.**
- 81 **The Assembly expressed strong support for the HAB Programme. Many of the Member States told of their active participation in HAB studies. A number of Delegates indicated their willingness to support and participate in OSLR Programmes within a TEMA context.**
- 82 **The Assembly agreed with the focus of OSLR on the UNCED priorities of climate change, biodiversity, and sustainable resources, in particular in tropical and sub-tropical zones.**
- 83 **The Assembly noted with satisfaction the success of the International Seminar/Workshop on Red Tides and Mortality of Marine Organisms held in Cumana, Venezuela, followed by a colloquium concerning Ciguatera, partially financed by IOC.**
- 84 **Several Delegates called the Assembly's attention to the serious problems in the Black Sea regarding the anthropogenic effects on living resources. It was suggested that OSLR become involved in the region.**
- 85 **Some Delegates urged caution in prioritizing programmes because of the multi-disciplinary nature of OSLR activities. They noted a necessity to balance the requests and needs of Member States with the realistic funding and workload of the Secretariat.**
- 86 **Several Member States requested that the traditional OSLR focus on fisheries recruitment studies should not be neglected. They emphasized that the links between biological and environmental variables were important in evaluating the production and sustainability of living resources. Current programmes such as SARP and PREP should be augmented with new resources. Some Delegates recommended that IOC/OSLR strengthen its inter-UN relationships, particularly with FAO and UNEP.**
- 87 **A suggestion was made that OSLR be combined and co-ordinated with OSNLR in multi-disciplinary Regional Programmes.**
- 88 **The Assembly adopted the concept of a joint SCOR-IOC involvement through the International GLOBEC Programme. The implementation of GLOBEC-INT studies within IOC regional subsidiary body areas was proposed.**
- 89 **The Assembly decided that involvement in the UN-GEF-LME Regional Studies in developing countries was appropriate for OSLR.**
- 90 **The Representative of ICES emphasized a number of activities relevant to IOC/OSLR including: (i) joint ICES-IOC sponsorship of a Study Group on HAB which might be upgraded to a Working Group; (ii) co-sponsorship with SCOR, IOC and PICES of GLOBEC-INT and the establishment by ICES of a Working Group on Cod and Climate Change to guide the ICES participation in GLOBEC-INT; (iii) ICES Working Group on Recruitment Processes; (iv) ICES Study Group on Zooplankton Production; and (v) requests for IOC to co-sponsor a Study Group on Spatial and Temporal Integration and a 1994 Symposium on Zooplankton Production.**

91 The Representative of FAO called the Assembly's attention to the support his organization provided to OSLR in terms of funding, direct participation in joint activities and indirect personnel functions. He pointed out the need for locating extra budgetary sources of funding for fisheries-related projects in developing countries. FAO had contributed a great deal of effort to this activity and, while urging caution as regards OSLR's emphasis of new priorities, indicated that FAO wished to be involved in confirmation of changes.

92 The Assembly adopted Resolution XVII-2,

5.3 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)

93 The item was introduced by Dr. Peter Cook, Chairman of the Guiding Group of Experts of OSNLR. Recalling OSNLR sessions and its summaries at the International Geological Congress (Japan 1992), he informed the Assembly of the evolution of OSNLR, with reference to objectives and needs, including training.

94 Great efforts had been made to involve developing countries in deep sea research, ODP and deep sea mining resources, but it is likely that these sub-programmes will have limited progress in such countries due to budgetary constraints.

95 The Continental Margin Environment and Mineral Resources (COMEMIR) sub-programme is relevant, not only because of possible exploitation of these resources, but also for studies of the global environment (upwelling, etc.). The interest of Member States within specific regional contexts is shown by the series of workshops carried out in Portugal, Morocco, Peru, Senegal and Brazil on detailed planning and implementation of actions, including research cruises and applications for funding in target areas. A number of proposals are presently being considered for funding.

96 The OSNLR paleo-geographic mapping projects are also important because knowledge of coastal changes in the past help us to understand past climate change.

97 Taking into account the recommendations of UNCED Agenda 21, OSNLR has followed the evolution of needs, and is now focusing on coastal change and the concept of the coastal zone as a resource in its own right (CZAR). Present priorities of OSNLR also include better protection of shores, forecasting the consequences of exploitation of coastal resources, distribution of existing resources and study of unexploited resources.

98 The significance of the coastal zone and OSNLR results has been evidenced in important meetings such as the International Geological Congress (1992), BORDOMER 92 (IOC Workshop Report No.82) and the Berlin-Dahlem Conference on "Use and Misuse of the Sea Floor".

99 Relevant gaps in knowledge of coastal zones that should be filled include: (i) natural rhythms of coastal change; (ii) environmental references before human and industrial impact; and (iii) inventory of non-living resources.

100 The concept of the "Past as the Key to the Future" and the development of models through use of recent geological records of the coastal zone might offer solutions to several problems. This concept is perfectly tuned to the recommendations of Agenda 21. Long-term systematic observations also need to be carried out. The IOC Assembly, at its Sixteenth Session, and the Executive Council, at its Twenty-fifth Session, had endorsed the OSNLR proposal for an international conference on coastal change. The offer by France to host the Conference in Bordeaux and to support it with relevant funds was discussed during the Assembly, with the participation of 29 delegates from 16 Member States, and a draft resolution was prepared, accepting the offer of France.

101 The Assembly stressed the importance of the OSNLR programme both because of the scientific results and the organization of research projects, meetings and training activities. The Assembly also

stressed the importance of regional OSNLR projects which should be properly co-ordinated by IOC to avoid fragmentation.

102 The Assembly noted that sedimentary dynamics is fundamental in understanding environmental changes, not only as coastal change through erosion and accretion, but also in the understanding of the global environment.

103 The Assembly decided that, through OSNLR studies, long term references in environmental changes could be achieved, particularly in the coastal zone, with strong sediment dynamics and long time scale.

104 The Assembly acknowledged the large number of case studies already available through OSNLR results at the regional level, including in the IOCARIBE, WESTPAC, South-West Atlantic and IOCEA areas.

105 The Assembly stressed that, in accordance with the IOC Statutes, improved implementation and co-ordination with regional bodies was required, in order to ensure a better balance between IOC activities, including TEMA.

106 The Delegate of France informed the Assembly of the official letters sent to the Director-General of UNESCO by the Mayor of the City of Bordeaux and by the President of the Council of the Aquitaine Region, offering to host in Bordeaux and to support the organization of the International Conference on Coastal Change previously endorsed by the Assembly at its Sixteenth Session and by the Executive Council at its Twenty-fifth Session.

107 The Assembly strongly supported the organization of the Conference on Coastal Change in Bordeaux in early 1995, and expressed its appreciation to the Government of France for its generous offer. The Delegate of United Kingdom offered the full co-operation of the British Geological Survey in the organization of the conference.

108 The Delegate of Cuba informed the Assembly of his country's support for the proposed Scientific Conference, and added that, with this in mind, the Third Congress of Sciences of the Sea, to be held in Havana in February 1994, could be the regional forum for initial presentation of investigations and case studies in the IOCARIBE region.

109 The Delegate of the United Kingdom expressed appreciation to Italy for its efforts to support the OSNLR programme, *inter alia* through the provision of personnel to the IOC Secretariat.

110 The Assembly stressed that programmes on the coastal zone have much in common with programmes such as LOICZ/IGBP and GOOS as far as the evolution of the coastal environment is concerned, and emphasized the need for proper co-ordination.

111 The Assembly adopted Resolution XVII-3,

5.4 OCEAN MAPPING

112 The item was introduced by Mr. D.P.D. Scott, referring to Document IOC/INF-899. He reviewed the state of development of the General Bathymetric Chart of the Oceans (GEBCO), the International Geological-Geophysical Atlases of the Atlantic and Pacific Oceans (GAPA), and the regional international bathymetric charts, and, finally, presented the revised Terms of Reference for the Joint IOC-IHO Guiding Committee for GEBCO. He also recalled the statement by the Representative of IHO with respect to the co-operation between IHO and IOC in the ocean mapping programme and related TEMA and VCP activities.

113 Several delegations stressed the importance of the Ocean Mapping programme, jointly sponsored by IOC and IHO.

- 114 The delegations noted that the global programme is developing satisfactorily, and welcomed the digitization programme, noting however that this is based on an interpretative representation. The application of modern observational techniques was considered to be of great importance at this stage of development. These techniques can give additional information of great value for geophysical research.
- 115 Several delegations emphasized the need to pursue the preparations of regional bathymetric charts and noted also the considerable progress made, in particular as regards the International Bathymetric Chart of the Caribbean Sea and Gulf of Mexico, and the International Bathymetric Charts of the Western Indian Ocean, the Mediterranean and the Eastern Central Atlantic.
- 116 Delegations emphasized that the work on the International Bathymetric Chart of the Western Pacific should now proceed as a matter of priority.
- 117 Several delegations informed the Assembly of on-going national programmes contributing to ocean mapping, including in parts of the Caribbean, Southwest Atlantic, Eastern Atlantic, and Western Pacific.
- 118 The Delegate of Germany informed the Assembly of past and planned training activities in bathymetry on board the RV METEOR in the IOCINCWIO region.
- 119 The Delegate of the Russian Federation informed the Assembly of a proposal for a complete world ocean mapping project relevant to various current major problems such as climate change. This proposal will be brought to the attention of the CGOM.
- 120 The Assembly stressed that the Ocean Mapping programme is a priority action of the IOC and should be provided with necessary support.
- 121 The Assembly thanked the Russian Federation for its generous offer to second a staff member to the IOC Secretariat to be assigned to Ocean Mapping activities, and took note with great appreciation that this new staff member would assume his functions as soon as possible.
- 122 The Assembly took note of the information provided in the Action Paper (Document IOC-XVII/8) on the financial requirements for a satisfactory implementation of the Ocean Mapping Programme, including the coverage of training activities and meetings of the regional Editorial Boards.
- 123 The Assembly adopted ~~Resolution XVII-4~~

5.5 MARINE POLLUTION RESEARCH AND MONITORING (GIPME/MARPOLMON) AND RELATED PROGRAMMES

- 124 Dr. Neil Andersen, Chairman of GIPME, referred to relevant documentation on GIPME and informed the Assembly that following successful negotiations by the Secretariat, the International Maritime Organization (IMO) had decided at the 69th Session of its Council (London, 15-20 November, 1992) on the willingness of IMO to co-sponsor GIPME. Earlier in 1992, the Joint IOC-UNEP Intergovernmental Panel for GIPME was formally constituted and held its first meeting in Paris, 4-7 March, 1992. Thus the GIPME Programme is now practically a joint IOC-UNEP-IMO endeavour. The IAEA has continued its co-sponsorship of GESREM, one of three Groups of Experts of GIPME.
- 125 A present activity that can be considered a prototype of continuing efforts needed internationally to monitor the health of the ocean is the Joint IOC-UNEP International Mussel Watch Programme being carried out within GIPME, in collaboration with the US NOAA. An initial field sampling phase from Central and South America, begun in 1991, has been completed, and the analysis of approximately 300 samples from 80 coastal sites is nearing completion. A workshop has been scheduled for April 1993 in Brazil to discuss the results. Supplemented by results from national Mussel Watch projects of USA and Canada, the programme would effectively cover the Americas and aptly represents a field test for a global chemical contaminant monitoring programme such as the measurements envisaged under the Health of the Ocean Module of GOOS.

- 126 Substantial resources valued at over seven hundred thousand US dollars have been made available by Canada and USA in support of the open-ocean baseline cruise in the Northwest Atlantic Ocean on board Canada's R/V HUDSON. Additional resources have been provided by other IOC Member States in support of their scientists who will participate in the cruise.
- 127 Dr. Andersen stated that GEMSI's latest efforts in the development of methodological protocols have been the provision of a new set of protocols for the JGOFS "core project" of IGBP with specific reference to regional activities such as those planned for the Arabian Sea in 1994/95 and a number of related Training Courses including two in Kenya and Pakistan. GEMSI has reviewed a manual for marine debris surveys developed by the US NOAA in collaboration with the US Marine Mammal Commission and this will be published in the near future under the IOC Manuals and Guides Series.
- 128 Dr. Andersen noted that, following testing and evaluations on methods for measuring the effects of pollutants, GEEP has packaged successful techniques into a number of training activities such as benthic community analyses, biochemical and physiological indices of impacts and biological response. Two workshops were organized in 1992; the IOC-UNEP Training Workshop on Techniques for Monitoring Biological Effects of Pollutants on Marine Organisms, Nice, France; the IOC-SOA Training Workshop on Benthic Community Analysis, in Xiamen, People's Republic of China.
- 129 GEEP is also developing the means to establish indices of biodiversity in marine communities.
- 130 Three GEEP manuals on Benthic Community Analysis, Scope for Growth and EROD/P450 were finalized during 1992 and will be published, jointly with IOC, in the UNEP Reference Methods Series, and perhaps also in the IOC Manuals and Guides Series, thus ensuring widest possible distribution.
- 131 The work of GESREM has continued. A mussel tissue reference material GESREM-1, provided by the IAEA Monaco laboratory, has been processed and is being certified for trace metals.
- 132 The Third Session of GESREM in Brussels, September 1992, resulted in a greater co-ordination of the activities of the Community Bureau of Reference (BCR) and GESREM.
- 133 A Workshop on the Results of the IOC-ROPME-UNEP-NOAA Cruise on board the RV MOUNT MITCHELL was convened in Kuwait, 24-28 January 1993. Dr. Andersen referred to the follow-up IOC cruise in co-operation with ROPME and the Tokyo University of Fisheries, 13-26 January 1993, and confirmed that discussions are continuing with ROPME, the Inter-Islamic Network on Oceanography (INOC) and the State of Turkey on another cruise in the summer of 1993.
- 134 An international scientific conference is planned for Tehran, Islamic Republic of Iran, in late 1993, to evaluate progress in the implementation of the IPP, with special emphasis on the Oceanography, Marine Ecology and Environmental Aspects of the Persian Gulf and the Sea of Oman.
- 135 Dr. Andersen concluded by informing that the IOC, pursuant to the decision of the Twenty-fifth Session of its Executive Council, is collaborating on and supporting the Co-operative Marine Science Programme for the Black Sea (COMSBLACK) in an international effort aimed at the establishment of a scientific basis for the effective integrated management of the Black Sea.
- 136 In a complementary presentation, Dr. Mario Ruivo, Chairman of the Joint IOC-UNEP Intergovernmental Panel for GIPME, highlighted the main conclusions and recommendations of the First Meeting of the Bureau of the Joint Panel (Paris, 22-24 July 1992). He drew attention to the regional strategies and approaches defined in the report of the Meeting aimed at achieving a smooth and rapid harmonization of the marine pollution research and monitoring activities of IOC and UNEP, particularly at regional level. He referred to the Caribbean CEPOL project as a good model of an integrated project with a potential to improve coastal zone management. He reiterated the need for the Joint Secretariat of the Panel to produce a costed Work Plan for achieving the objectives for which the Panel was set-up. He sought clarification from the Secretary IOC on why no financial provisions had been made for the agreed activities of the Joint Panel and especially for the second meeting of the Joint Panel in 1993. The

Secretary IOC explained that the funding is part of the GIPME Programme funding in the draft programme and budget, and that provision has been made for a meeting of the Panel in 1994/1995.

137 The Assembly expressed great satisfaction with the accomplishments of the GIPME Programme. It stressed the importance of the work of the GIPME Groups of Experts in the development of common methodologies for marine pollution studies and the organization of inter-calibration exercises based on certified Reference Materials which ensured the intercomparability of whatever results were achieved from the monitoring programmes in different countries and regions under MARPOLMON. Many Delegates informed the Assembly of various national and regional activities being undertaken in the context of the GIPME Programme and stressed the role of GIPME in the implementation of some of the key recommendations contained in UNCED Agenda 21 and especially its Chapter 17.

138 The Delegate of Colombia referred to the Principle of the Rio Declaration which calls for the development of pollution management policies, and stressed the need for future research and monitoring activities under GIPME to focus on pollution control measures and preventive actions, particularly against land based sources of pollution. He recommended the GEF and the application of Rio Principles 13 and 16 as a means of procuring extra-budgetary resources for the sustenance of GIPME and MARPOLMON activities.

139 The Delegates of Turkey and Bulgaria stated that the Black Sea is experiencing adverse environmental problems of dramatic proportions and called for increased support from IOC to COMSELACK. They stated the necessity for co-operation between GIPME and GLOBEC.

140 The Delegate of Argentina informed the Assembly that four years after the sinking of BAHIA PARAISO, the recovery of the cargo (gas-oil), which had posed a threat of pollution, had been secured and clean-up actions had been completed in January 1993 through the joint efforts of the Netherlands and Argentina. He regretted that due publicity was not given to this laudable undertaking.

141 The Delegate of Kenya requested IOC support for national programmes in a regional context, for a project on coastal dynamics related to marine pollution already submitted to IOC, as well as for a JGOFS-related training visit to Bermuda for four Kenyan scientists.

142 The Delegate of the United Kingdom informed the Assembly of the efforts of the United Kingdom to monitor and assess the impacts of the 85,000 tons of light crude oil spilled in the Shetlands. He hoped lessons would be learned from the results of these efforts and said that IOC collaboration in this regard would be welcome.

143 The Delegate of the Islamic Republic of Iran thanked the Secretary IOC for assistance in setting up the Iranian National Centre on Oceanography. He gave details of the planned International Scientific Conference on the Persian Gulf and the Sea of Oman in late 1993 and asked for the support of the Assembly in ensuring optimum participation in and success of the Conference.

144 The Delegate of Nigeria expressed satisfaction at his country's collaboration with IOC, particularly in the organization of recent joint regional training workshops on physical oceanography studies in relation to marine pollution investigation, and congratulated the Secretary IOC for including more experts from developing countries in the activities of the Groups of Experts of GIPME.

145 The Delegates of Portugal, Venezuela and Mexico welcomed the co-sponsorship of the GIPME Programme by UNEP and IMO, and wished to know what additional financial resources the IMO co-sponsorship would bring to the GIPME Programme. The IOC Secretary informed the Assembly that negotiations would be held with IMO to determine their future contributions to the GIPME Programme.

146 The Delegate of Portugal emphasized the need to develop the Health of the Ocean Module of GOOS within the context of GIPME.

147 The Delegate of Cuba pointed out that while it is presently recognized that the GIPME Committee and the Joint IOC-UNEP Intergovernmental Panel for GIPME should function separately, as stipulated in Resolutions XV-5 and EC-XXIII.2, there is a need to avoid a prolonged separate existence of two bodies with similar functions. He expressed the desirability of merging the two bodies and their functions.

148 The Delegate of Malta announced the organization of the biannual Clean Seas Symposium (Malta, 9-11 November 1993) which would focus on pollution monitoring as a tool for pollution management. He invited IOC to participate in the Symposium, especially in presenting its observational (monitoring) programmes, e.g., MARPOLMON and GOOS.

149 The Representative of ICES stated that collaboration with IOC in general, and the GIPME Programme in particular, has been very good. He said that ICES continues to be the source of scientific advice to the North-east Atlantic and Baltic Sea and especially to the Oslo and Paris Commission and the Helsinki Commission, and that IOC is represented on committees of ICES and vice-versa.

150 The Assembly stressed the need to consolidate the existing arrangements between IOC, UNEP and IMO on co-sponsorship of the GIPME Programme and the harmonization of their respective marine pollution research and monitoring programmes, especially at the regional level.

151 The Assembly took note of the pivotal role of GIPME in meeting the objectives and targets specified in Agenda 21 of UNCED and in particular Chapter 17, and urged Developed Member States and Funding Agencies to provide the requisite additional resources in support of the GIPME Programme and activities.

152 The Assembly instructed the Secretary IOC to continue his efforts to identify additional extra-budgetary resources for implementing GIPME activities.

6. OCEAN SERVICES

6.1 GLOBAL OCEAN OBSERVING SYSTEM AND RELATED ACTIVITIES

6.1.1 First Session of the IOC Committee for GOOS

153 The Chairman of the First Session of the IOC Committee for the Global Ocean Observing System (I-GOOS), Dr. Geoffrey Holland, reported on the First Session of I-GOOS (Paris, 16-19 February 1993) referring to Document IOC/GOOS-I/3S. The meeting addressed three major tasks:

- (i) exchange of information among Member States, especially regarding GOOS planning and national organization and activities;
- (ii) the organizational structure for GOOS, which enables the IOC to combine scientific rationale, and national efforts, and co-ordinates these with interested intergovernmental agencies and international bodies; and
- (iii) discussion of priorities and actions necessary to begin the process of implementing the programme.

154 Nineteen Member States had presented their programmes and are using varied approaches to support GOOS.

155 The coastal zone received special attention and was deemed particularly important. The development of analyses, data products and the opportunities created by advances in technology were also deemed important, as well as the need to train human resources in developing countries.

156 With regard to the advisory structure, the Committee recognized that the negotiations, between the IOC, its scientific advisory bodies, and concerned organizations were not yet complete. Completion

of these negotiations was urged and in the interim the I-GOOS Chairman was charged with co-ordination of the development of GOOS. The importance of the ICSPRO mechanism in this endeavour was also recognized. The document "The Approach to GOOS" was accepted as the basis for the development, and as a strategy for GOOS planning and for the guidance of activities within Member States. Member States are urged to undertake national initiatives on GOOS and to contribute to an IOC Trust Fund for GOOS to support the planning and development phase.

157 The importance of existing programmes and their use as the basis for GOOS was stressed and agreed upon, and there was consensus on their optimal use to serve the objectives of GOOS. The need to utilize the regional bodies was also stressed. Another element of GOOS which was agreed upon as most essential was the TEMA component. The Committee elected Dr. Michel Glass (France) as its new Chairman, with Dr. Grant Gross (USA) and Dr. Krishnamurthy (India) as the two Vice-Chairmen.

158 The inter-relationships among global programmes, especially GOOS and GCOS and their efficient co-operation and collaboration, were stressed by many Member States, and their common module was noted. Another module concerning the Health of the Oceans, has started its development via an *ad hoc* panel, and was briefly described by Dr. Neil Andersen. A preliminary summary report of the first meeting has been distributed (Document IOC/INF-923). Its findings suggest considerable involvement by developing countries in the data collection and evaluation of parameters on contaminants.

159 In their participation in IGOSS, it was noted by a number of Member States that progress was being made in declassifying military oceanographic data and therefore making them available to IGOSS and GOOS. Closer IODE involvement in the GOOS efforts was urged by a number of Member States. Several delegations noted that the Mediterranean Sea provides an opportunity to use modelling and a semi-enclosed sea as a mini-GOOS model. The Delegate of Germany requested the IOC Secretary to negotiate with the regional conventions on prevention of marine pollution with a view to making their data available for GOOS purposes.

160 The Representative of WMO reiterated the support of WMO in the development of GOOS, especially as it relates to climate and enhanced marine data, and better meteorological forecasts. WMO also supports, in principle, the establishment and co-sponsorship of a GOOS Scientific and Technical body (J-GOOS). WMO especially noted the need to build upon existing systems, *inter alia* IGOSS, ICDE, GCOS and WWW, and to give emphasis to the data management structures and issues, especially IGOSS and DBCP. The representative of ICSU expressed the willingness of ICSU to help facilitate the scientific design, testing and evaluation phases of GOOS and to move towards signing a Memorandum of Understanding with IOC and WMO on co-sponsorship of the J-GOOS. ICSU stressed the desirability of scientific independence of J-GOOS, the need to avoid being distracted by intergovernmental processes, while being in a setting which can also provide close contact.

161 ECOR presented two of its initiatives - marine acoustics and robotics and their applications to GOOS.

162 The Assembly adopted Resolution XVII-5.

6.1.2 Global Sea-Level Observing System (GLOSS)

163 The Chairman of the IOC Group of Experts on GLOSS, Dr. David Pugh, reported on progress in the implementation of GLOSS.

164 He pointed out that GLOSS will, on the one hand, contribute to GOOS and, on the other, will benefit from GOOS. GLOSS has become a part of the GOOS structure, as the Group of Experts on GLOSS has been recognized by the IOC Executive Council as a subsidiary body of the IOC Committee for GOOS. Dr. Pugh emphasized that progress in GLOSS development has been achieved due to active participation and support of some 80 Member States.

165 Dr. Pugh wished to highlight the following recent events relevant to GOOS:

- (i) Sea-Level Training Course for Portuguese and Spanish-speaking countries, organized by Brazil with the support of IOC, from 1 to 20 February 1993, attended by specialists from Sao Tome and Principe, Argentina, Chile, Mozambique, Uruguay and Brazil.
- (ii) Joint IAPSO-IOC Workshop on Sea-Level Measurements and Quality Control (12-13 October 1992, Paris). The Report of the Workshop was made available to the Assembly;
- (iii) Third Session of the IOC Group of Experts on GLOSS (Paris, 13-15 October 1992). The Group reviewed the status of the GLOSS network and formulated proposals for further implementation of GLOSS. The Report of the meeting was made available to the Assembly.
- (iv) The Joint IOC-UNEP-WMO *ad hoc* Meeting of Experts on the IOC-UNEP-WMO Pilot Activity on Sea Level Changes and Associated Coastal Impacts in the Indian Ocean (16 October 1992, Paris), held in conjunction with the Third Session of the GE/GLOSS. The draft implementation plan for the project was finalized during this meeting and it was made available to the IOCINCWIO-III meeting in December as well as the Assembly.

166 Dr. Pugh emphasized the importance of integration of the satellite remote sensed data on sea-surface topography (from ERS-1, TOPEX/POSEIDON) and tide-gauge data, with geocentric fixing for some GLOSS sea-level station bench-marks using GPS and VLBI. The Meeting of the IAPSO Committee on Tide-Gauge Benchmarks will consider this matter in December 1994. He also emphasized the need for strengthening the related TEMA aspects within GLOSS.

167 The report of the Third Session of the IOC Group of Experts on GLOSS was submitted to and considered by the First Session of the IOC Committee for GOOS. Recommendation GOOS-I.3 on GLOSS was adopted and submitted to the Assembly (Document IOC/GOOS-I/3S).

168 Many delegates reported on their activities related to GLOSS. These include the proposal of the Russian Federation to add five tide-gauges to the GLOSS network; up-dated information on the GLOSS network of Denmark, particularly in the Arctic region; installation of a GLOSS tide-gauge in Esperanza (Antarctica) by the joint efforts of Argentina and USA; proposal of Israel to include its sea-level station in the Eastern Mediterranean in the GLOSS network; ASEAN-Australia efforts to install a sea-level network in the ASEAN region; assistance by Portugal to Cape Verde and Mozambique in training specialists of those countries in sea-level observations and analysis; proposal by Greece on co-ordinated sea-level observations in the Mediterranean.

169 The Assembly emphasized the need to strengthen TEMA components of GLOSS through IOC and/or through bilateral and multilateral collaboration.

170 The Assembly stressed that these efforts should also endeavour to ensure the maintenance of installed equipment. The Delegate of Vietnam expressed the hope that IOC would be able to provide support for the efforts of India to assist Vietnam in the installation of a GLOSS station and in training their specialists.

171 The Assembly noted with satisfaction the progress achieved in the implementation of GLOSS due to the active participation of many Member States and fruitful collaboration among Member States both on bi-lateral and multi-lateral bases.

172 The Assembly adopted Recommendation GOOS-I.3 on the Global Sea Level Observing System, now **Resolution XVII.5**

6.1.3 GOOS Global Coastal Zone and Shelf Seas Module

173 Dr. G. Holland, Chairman of the First Session of the IOC Committee on GOOS, introduced this item. He referred to the development of the pilot phase of the joint IOC-UNEP-WMO Long-Term Global System for Monitoring Coastal and Near-Shore Phenomena Related to Climate Change, endorsed by the Sixteenth Session of the IOC Assembly by Resolution XVI-10.

174 The IOC Committee for GOOS, at its First Session, noted the following developments regarding the six pilot activities:

- (i) **Pilot Activity on Monitoring of Coral Reef Ecosystems:** An action plan for the implementation of the project has been prepared and the Joint UNEP-IOC Global Task Team on the Implications of Climate Change on Coral Reefs has agreed to act as an expert advisory body to both UNEP and IOC with regard to the scientific and technical aspects of the planning and implementation of this pilot activity. A Methodology Manual on Monitoring Coral Reefs for Global Change has been prepared as a joint Australia-ASEAN effort and it will be published in the UNEP Reference Manual Series in 1993, as a joint UNEP-IOC publication;
- (ii) **Pilot Activity on Monitoring of Mangrove Communities:** An action plan for the implementation of the project has been prepared and the UNEP-UNESCO Task Team on the Impacts of Expected Climatic Change on Mangroves has agreed to advise on the design, development and operation of the project;
- (iii) **Pilot Activity on Monitoring Plankton Community Structure:** A draft plan has been prepared with the help of Dr. John C. Gamble, Sir Alistair Hardy Foundation for Ocean Science, Plymouth Marine Laboratory, UK, on the development of a monitoring system using the continuous plankton recorder (CPR). This is considered as a joint GOOS-OSLR activity related to the Coastal and Living Resources Modules of GOOS;
- (iv) **Pilot Activity for Coastal Circulation Monitoring:** A draft implementation plan for the project, focusing on the East China Sea, has been prepared by the IOC Consultant, Dr. Mark Wimbush (University of Rhode Island, USA), after discussions with colleagues from Japan, the Republic of Korea, USA and China. It was submitted to the Second Session of the IOC Sub-Commission for WESTPAC (January 1993);
- (v) **Pilot Activity on Monitoring of Sea Level Changes and Associated Coastal Impacts:** A draft plan for the implementation of the project in the Indian Ocean has been prepared with the help of Dr. S. Shetye (NIO, India) and reviewed and finalized by the *ad hoc* IOC-UNEP-WMO experts meeting held in conjunction with the GE/GLOSS-III meeting in October 1992. The proposed project received support from the IOCINCWIO-III meeting (Mauritius, December 1992) and the UNEP-IOC Workshop on Impacts of Sea-Level Rise (Dhaka, November 1992);
- (vi) **Pilot Activity on Monitoring of Organic Carbon Accumulation in Surface Coastal Sediments:** Actions are underway in light of the availability of funds.

175 Many Delegates reported on their actions related to the above pilot activities and emphasized their importance for the study, monitoring and prediction of global change and their impact on coastal zone development (e.g., sea-level rise, storm surges and flooding, coastal zone erosion, living resources and coastal pollution problems, red tides, tsunami).

176 The Delegates of Israel, Italy and the United Kingdom offered their respective country's expertise and knowledge in promoting coastal monitoring and activities also in other countries.

177 The Assembly noted the progress in the development of coastal observing programmes by the joint ASEAN-Australia efforts.

178 The Delegate of Colombia proposed that the development of pilot activities on coral reefs and mangroves be given particular attention in the Caribbean and Eastern Pacific regions. The Delegate of Kenya called upon the Assembly to support coastal monitoring pilot activities in the IOCINCWIO region by the provision of extrabudgetary funds.

179 The Assembly noted with satisfaction the financial support provided by UNEP for the preparation of the action plans for pilot activities. The Assembly wished to reaffirm its view that these pilot activities are considered as important contributions to the development of the GOOS Coastal Module and agreed with the proposal of the IOC Committee for GOOS that the group to be established to consider the needs of the GOOS module for Monitoring the Coastal Zone Environment and its Changes should be invited to provide advice on these pilot activities.

180 The Assembly emphasized the role of IOC Regional Bodies in the implementation of the pilot activities and pointed out the importance of continued IOC collaboration with UNEP, WMO and other organizations in this regard.

181 The Assembly noted with concern, however, that sufficient funds have not been designated for implementation of the pilot activities.

182 The Assembly adopted Recommendation GOOS-1.4 on "UNEP-IOC-WMO Long-Term Global Monitoring System of Coastal and Near-Shore Phenomena Related to Climate Change" as Resolution XVII.5.

6.1.4 Drifting Buoy Co-operation Panel (DBCP)

183 Mr. D. Painting, Chairman of the DBCP, introduced this agenda item. He recalled that the Panel had been established jointly by IOC and WMO in 1985 to: (i) achieve the optimum use of drifting buoy deployments world-wide and to increase the quantity and quality of drifting buoy data available to meet the objectives of IOC and WMO programmes, and (ii) encourage and support the establishment of "action groups" in particular programmes or regional applications to effect the desired co-operation on drifting buoy activities. Mr. Painting stressed the function the Panel is performing, with the assistance of its Technical Co-ordinator, viz to foster co-ordination of drifting buoy activities from the operational standpoint, which makes it differ in essence from other programmes or systems referred to under the GOOS umbrella.

184 In order to illustrate the work of the Panel to date, Mr. Painting highlighted a few achievements of the past year :

- (i) the implementation of the first stage of a software known as the "new Argos GTS processing chain", to allow more and better data to be circulated onto the GTS;
- (ii) the acceptance of the International Arctic Buoy Programme (IABP) as an Action Group of the Panel;
- (iii) the data quality control system established in January 1992, to work in slightly delayed mode;
- (iv) the development of a low-cost meteo-oceanographic drifting buoy, on the basis of the SVP drifter, in co-operation with the Global Drifter Center (GDC) hosted by the Scripps Institution of Oceanography (La Jolla, California, USA).

185 Lastly, Mr. Painting reported that the Panel, since it was already dealing with a number of moored buoys, wished this fact to be reflected in its terms of reference and name, which then could become "Data Buoy Co-operation Panel".

186 The Assembly commended the Panel on its achievements to date. It especially appreciated the efforts undertaken to reduce the cost of the buoys, where possible, and to improve the quality of the data.

187 **The Assembly adopted Resolution XVII-6:**

6.1.5 Integrated Global Ocean Services System (IGOSS)

188 Mr. Dieter Kohnke, Chairman of IGOSS, presented the progress report of the operational status of the programme.

189 The Integrated Global Ocean Services System (IGOSS), which is jointly run by the Intergovernmental Oceanographic Commission (IOC) and the World Meteorological Organization (WMO), is promoting and implementing operational oceanography world-wide. The main components of IGOSS are:

- (i) IGOSS Observing System (IOS);
- (ii) IGOSS Data Processing and Services System (IDPSS)
- (iii) IGOSS Telecommunication Arrangements (ITA).

190 Data are collected on fixed platforms, drifting buoys, research ships, fishing vessels, and merchant ships. They are transmitted through a coastal radio station or a satellite ground station to a National Oceanographic Centre (NOC)/National Meteorological Centre (NMC) for quality control and subsequent input to the Global Telecommunication System (GTS) of WMO.

191 The variables measured presently are surface and sub-surface temperature, salinity and currents.

192 The countries participating in IGOSS have increased the exchange of XBT data in 1992 compared to 1991. However, there is a reduction in the exchange of salinity data. There is an urgent need to exchange much more salinity data over the GTS.

193 Mr. Kohnke informed the Assembly that the German Navy has agreed to release their data into the public domain two weeks after acquisition, and these data have been entered onto the GTS since January 1993. It would be of great benefit if other navies would follow this example. There is now, more than ever, an urgent need for the exchange of more operational ocean data to meet the requirements of the various users of IGOSS data.

194 The IGOSS Task Team for Quality Control of Automated Systems has finalized its investigations on the fall rate equation of XBTs. The scientific community and the IODE Committee need to decide when the new fall rate equation will be applied and how the XBT data that already exist in data archive centers will be treated.

195 A major activity of IGOSS is the publication of an IGOSS Products Bulletin which shows a great variety of oceanographic products to the preparation of which IGOSS data have largely contributed. The first issues were financed by Meteo-France. Mr. Kohnke extended his sincere thanks to France for its generous contribution. From now on the IPB will be printed by the BSH in Hamburg, with financial support provided by the USA, Canada and Costa Rica.

196 The Joint Committee for IGOSS and the Committee on IODE have further strengthened their co-operation through joint projects and several joint meetings and consultations. The most successful joint undertaking of the two Committees is the Global Temperature/Salinity Pilot Project (GTSP). The aims of GTSP are to improve real-time capture of ocean data, to quality control the real-time and non real-time data, to monitor both real-time and non real-time dataflow, and to prepare and distribute data products. Mr. Kohnke expressed his appreciation to the Canadian MEDS in Ottawa which is the leading center for this project.

197 IGOSS has demonstrated its ability to provide international coordination of ocean data collection, data transmission, quality control, and product preparation. It has provided the means to distribute ocean data and products to users and to conduct technical evaluations of the data observation and data transmission techniques. Codes for data transmission have been developed which can carry through GTS virtually all oceanographic variables. IGOSS has shown its capability to provide the basis for the operational oceanographic components of GOOS. Therefore, it must have a major role to play in aspects of GOOS that perform in an operational mode. Mechanisms for an effective working relationship between IGOSS and GOOS remain to be established.

198 The Assembly took note of the information with appreciation, and stressed the usefulness of the operational IGOSS programme and its importance to the implementation of the Global Ocean Observing System.

199 The Assembly emphasized the need to increase and closely monitor the data delivery, and welcomed the contribution from the German Navy.

200 The Assembly recognized the need to ensure effective interaction between IGOSS and GOOS, and requested the Secretary IOC and the relevant Officers (Chairmen) to address this matter and report to the Executive Council of IOC.

6.1.6 Satellite Remote Sensing

201 Mr. John Withrow, IOC Technical Assistant Secretary, introduced this item. He informed the Assembly on the activities of the Commission in relation to satellite remote sensing and on co-operation between IOC and the Committee on Earth Observation Satellites (CEOS) and the WMO in promoting the collection and distribution of remotely sensed ocean data to both the oceanographic and marine meteorological community. He drew the attention of the Assembly to the debate on data policy taking place in the space industry, and the need for the ocean community to be involved in this debate to ensure the free and open exchange of remotely sensed data *inter alia* for the purposes of public safety and climate change research. Finally, he emphasized the need for co-operation between the IOC and the space agencies in providing access to remotely-sensed data by all Member States, training in their utilization, and follow-up so that the products provided meet the needs of the users.

202 Several Delegates outlined the contributions of their respective countries to remote sensing, many of which are listed in the GOOS Status Report.

203 The Delegate of Venezuela pointed out the need, within the framework of the TEMA Programme, for training technical personnel in developing countries to effectuate observations, obtain information and collect samples to consolidate satellite information.

204 The Assembly noted the important contribution of satellites to both ocean research and operational oceanography. It also noted with satisfaction the efforts of the IOC to increase the awareness of the Satellite Operators to the needs and activities of the ocean community, and instructed the Secretary to continue these efforts. This is particularly important when realizing that efforts are being made today to influence launch schedules after the year 2000.

205 The Assembly stressed the need for further efforts to promote the utilization of remotely sensed data by all countries through training courses and symposia.

6.1.7 Global Climate Observing System (GCOS)

206 Dr. Thomas Spence, Director of the Joint Planning Office for GCOS, briefly described the state of plans for the Global Climate Observing System (GCOS). He described the basis for the establishment of the GCOS initiative, noting that a comprehensive operational system is logical and essential. The Joint Scientific and Technical Committee for GCOS had held two meetings and had established several task

groups. He noted the progress already made by the Ocean Observing System Development Panel in defining oceanic requirements. The JSTC-GCOS had adopted a strategy which would :

- (i) in light of current knowledge, evaluate present observational systems and define an initial operational observing system;
- (ii) specify key observations to be added; and,
- (iii) identify R & D issues to define future observational elements.

207 The initial operational system will consist of :

- (i) required components currently operational (what we mean when we say that GCOS will build on existing systems);
- (ii) necessary enhancements to the current systems (items we can now recommend and which can be done);
- (iii) components, not now operational, but for which there is a proven technology; and,
- (iv) a comprehensive data system.

208 He stressed that GOOS and GCOS efforts must be in concert, because systems will be in common. He noted the importance of the upcoming Intergovernmental Meeting on the World Climate Programme (April 1993) for further support to GCOS.

209 The Assembly took note with appreciation of this information. The Assembly stressed the strong need for close co-operation between WMO, IOC, UNEP and ICSU in the development of GCOS and welcomed the formalization of that co-operation through the Memorandum of Understanding signed by these Organizations in 1991/92. The Assembly also stressed the necessity of close co-ordination in the development of GOOS and GCOS and the related close interaction between the organizations concerned, so as to ensure a smooth development of the common parts of GCOS and GOOS, and to avoid any duplication of efforts.

6.2 INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE) AND RELATED ACTIVITIES

6.2.1 Fourteenth Session of the IOC Committee on IODE

210 The Chairman of the IOC Committee on IODE, Dr. R. Wilson, introduced the agenda item.

211 The Fourteenth Session of the Committee was held in Paris from 30 November to 9 December 1992 with participation of almost 100 experts from 33 IOC Member States. This session summarized the results and identified gaps in the implementation of the IODE programme, and recommended ways on how to achieve an improved implementation of the programme so as to meet the needs of the IOC Member States and scientific programmes in ocean data exchange and marine information management. The Chairman submitted the Summary Report of the Fourteenth Session of the Committee and the resolutions and recommendations contained therein for endorsement and approval.

212 He highlighted a few activities of special interest : the GTSP, the OCEAN-PC project, the Ocean Climate Data Workshop and activities of the Committee's Groups of Experts.

213 The Group of Experts on Technical Aspects of Data Exchange has continued to develop the GF-3 format and the last two volumes of the format are expected to be published this year. The Group broadened its concerns to include binary data, data modelling and development of logical common

structures for more complex data types to be encountered in programmes such as JGOFS and IGBP, the handling of requirements for data to be collected by the global science programmes and GOOS.

214 The Group of Experts on RNODCs is now serving several users other than the climate programme. IODE-XIV therefore recommended to change the name to the Group of Experts on RNODCs and Global Programmes and to modify its Terms of Reference, taking into account the recommendations of the Ocean Climate Workshop, the continuing and growing needs for RNODCs to support global science programmes, and the development of GOOS.

215 The Group of Experts on Marine Information Management has been very active in the past year, especially after its session in April 1992. Actions set forth include MIM training activities in developing countries, implementation of new technologies for MIM in developing countries, a pilot project for document delivery using Internet, and a CD-ROM of IOC publications.

216 Since 1990, several IODE centers have become increasingly involved in supporting the international global science programmes, such as WOCE, TOGA, JGOFS. The activities of Canada, France, Germany, Japan, UK and the USA have been especially mentioned in this regard. This improved co-operation with the international science programmes has been matched by improved co-operation with other international organizations and bodies including WMO, ICSU, ICES, IGOSS and GOOS.

217 Dr. Wilson then referred to the new project, proposed by the Committee, on Global Ocean Data Archaeology and Rescue. There is an urgent need to find and rescue a large volume of oceanographic data that may be lost due to the economic and political situation in a number of IOC Member States.

218 As part of the TEMA aspect of IODE, several training courses were operated in the last three years. Courses on subjects ranging from GF-3, oceanographic data and information management, application of remotely sensed data, sea level measurements, were given in a number of states including Argentina, China, Colombia, France, Japan, Kuwait, Russia, UK and Venezuela. It is planned that future courses will pay increased attention to high data rate sensors, OCEAN-PC, new data types such as CO₂ and chlorophyll, and integration of data from *in situ* sensors, numerical models and remote sensing systems.

219 Finally, Dr. Wilson described seven major thrusts for IODE in the next intersessional period (see Annex to Resolution XVII-8). The ASFA and the requirement for a data archaeology and rescue project were singled out for urgent actions.

220 The Assembly endorsed the Summary Report of the Fourteenth Session of the Committee on IODE and approved the Recommendations. The Assembly requested the Secretary IOC, in consultation with the Chairman IODE, to make the necessary changes in the Draft Data Policy Statement, taking into account comments made by the Delegations of the UK and USA on real-time operational data. The Assembly fully supported all elements of the IODE Programme, in particular on Data Archaeology and Rescue, GTSP and OCEAN-PC. The Assembly expressed thanks to the Delegate of the Russian Federation for its readiness to host the first regional workshop for Eastern and Northern Europe in May 1993.

221 The Assembly emphasized the role of IODE in data management, in co-operation with IGOSS, in supporting the global ocean programmes, such as WOCE and TOGA. Several delegates noted that IGOSS and IODE would form the necessary basis for the data management aspects of GOOS.

222 The Delegates of Malta and the Russian Federation expressed support for IODE and reiterated the offers made by them at the Fourteenth Session of the Committee, to host and support regional training courses for Mediterranean and Black Sea countries on Oceanographic Data Management, in Malta in 1995, and in Obninsk in 1993, respectively. The Assembly expressed its thanks for these offers.

223 The Delegate of Portugal called the attention of the Assembly to the desirability of further developing working relations between IODE and the scientific programmes of the Commission, so as to

provide an effective data exchange and management system. Co-operation with GIPME/MARPOLMON was mentioned as an area requiring special attention.

- 224 Several delegates indicated that they were in the process of creating national oceanographic data centres and requested support of IOC for training, assistance and advice.
- 225 Delegates of the Islamic Republic of Iran and Ukraine requested that assistance and advice missions by IODE experts be arranged to their countries in order to recommend the most appropriate arrangements for the establishment of NODCs.
- 226 Referring to the development of the RECOSCIX-WIO marine information exchange project, the Assembly expressed its appreciation to the Government of Belgium which took over the core funding of the project in 1991, upon termination of the pilot phase developed and funded by the IOC. The project was considered as a shining example of IOC's Marine Information Management programme. It proved to be not only extremely useful to and appreciated by scientists of the IOCINCWIO region, but also stimulated the development of various other programmes and projects.
- 227 The Assembly welcomed the planned development of a parallel RECOSCIX network for the Central Eastern Atlantic region, requested by the IOCEA Member States following the success of RECOSCIX-WIO.
- 228 The Assembly noted with appreciation the announcement made by the Delegate of Kenya to participate in ASFA as a national or, through the RECOSCIX-WIO project, as a regional ASFA input centre.
- 229 The Assembly took note of the statement made by the Representative of the FAO on the position of FAO with regard to ASFA. After December 1994 the FAO will:
- (i) not continue to make any financial contribution to the Publisher;
 - (ii) continue as an input center for fisheries and aquaculture documents;
 - (iii) cease to input documents from countries and organizations which themselves have the capacity to supply this input, while at the same time encouraging the input of fisheries and aquaculture; and
 - (iv) seek ways and means for increased participation of developing countries including access to fisheries and aquaculture information by those countries.
- 230 The Assembly noted with satisfaction that the FAO position and the IOC proposal, documented in IOC-XVII/8 Annex 6, were very well in line. The Assembly, in accordance with Recommendation IODE-XIV.7, requested the Secretary IOC to explore with FAO, the other co-sponsors and other interested international agencies, the possibility of jointly sharing the cost of the further development of ASFA.
- 231 The Assembly, taking into consideration FAO's and IOC's mandates, decided that the IOC should take over the role as the ASFA lead agency after the termination of the current agreement between FAO and ASFA's Publisher CSA.
- 232 The Assembly recognized that, in order for IOC to assume adequately the role of ASFA lead agency, a professional post specially for ASFIS/ASFA, with an appropriate supporting budget, would be essential.
- 233 The Assembly adopted ~~Resolution XVII-7.~~

234 **The Assembly expressed satisfaction with the close co-operation of IOC with ICSU, ICES, WMO and CEC in ocean data management, and welcomed the kind offer of ICES to provide facilities for hosting an *ad hoc* meeting on format development and a consultative meeting on OCEAN-PC in May 1993.**

235 **The Assembly thanked the Governments of the USA and Belgium for providing the services of Mr. J. Withrow and Mr. P. Pissierssens, respectively, to assist the IOC Secretariat in implementing different components of the IODE Programme.**

236 **The Assembly instructed the Secretary IOC and urged Member States to increase, to the extent possible, support in funds and staff to the programme, taking into account major efforts and principles of funding as they are presented in Annex 1 to Recommendation IODE-XIV.8.**

237 **The Assembly welcomed the offer of the Delegate of Greece to investigate whether the next meeting of IODE could be held in Athens. The Chairman of IODE and the Secretariat agreed to assist Greece in trying to come to suitable arrangements with potential sponsors to make this possible.**

238 **The Assembly commended IODE and wished the Committee continued success in providing services and supporting scientific and monitoring programmes. The Assembly expressed thanks to the past Chairman of the Committee, Dr. N. Flemming, for his many years of devoted service to the programmes.**

239 **The Assembly adopted Resolution XVII-8.**

6.2.2 Global Temperature-Salinity Pilot Project (GTSP)

240 **Dr. R. Wilson introduced the Agenda item. Since the end of 1990, the GTSP has achieved a number of goals, including the provision of data sets three times a week for assimilation with ocean models. The Project has also been successful in documenting this progress through the manuals and reports that were published. In particular, the reports have documented the quality control and data management technologies that are being developed and implemented. The IOC Secretariat and MEDS of Canada have made these available to Member States of IOC and WMO. In the next two years, the activities in GTSP will be focused on the development of products integrating data and information on efficient carriers such as CD-ROMs to improve the delivery of data, information and services to Member States.**

241 **The increase in the number of active participants in the GTSP during the past two years has been encouraging and has helped to improve GTSP services. Dr. Wilson encouraged Member States not yet actively participating in the GTSP to assist the GTSP by accepting a variety of responsibilities in the development of delayed mode data flow monitoring and in the historical aspects of the project.**

242 **The Assembly took note of the information on the project and considered its development as an outstanding achievement. The Assembly noted with gratitude that the data-flows and data-capture have increased over the past three years. The Assembly instructed the Secretary to provide, to the extent possible and taking into account other demands and constraints, the necessary support to GTSP and to continue close co-operation with WMO, ICES and ICSU in its implementation. Some delegates expressed the wish to have GTSP data sets available for the international community without delay.**

6.2.3 Ocean Personal Computer Project (OCEAN-PC)

243 **Mr. John Withrow, the IOC Technical Assistant Secretary, introduced this Agenda Item, noting the contribution that present and future personal computer technology could make to ocean data management. He reiterated the objectives of the project, pointing to the element of capacity building that was intrinsic in the project. He drew the attention of the Assembly to the "Inventory of Software and Products for the Display and Analysis of Marine Data" (Document IOC/INF-878), already published in conjunction with the project and to the initial package that is presently in testing and due for release later this year. He informed the Assembly of the demonstration project currently underway between IOC and**

UNEP GRID Arendal through the development of a joint software package that would include OCEAN-PC as well as various GIS functions.

244 The Assembly noted with satisfaction the progress made in the OCEAN-PC project. The Assembly recognized that there was a need to strengthen VCP support for the Project, in terms of equipment and software, and directed the Secretariat to encourage these opportunities. The Assembly appreciated the significant contribution of ICES to the Project both in software development and in the hosting of a consultation to generate the initial package. The Assembly stressed the need to further develop the TEMA component of OCEAN-PC.

6.3 INTERNATIONAL TSUNAMI WARNING SYSTEM IN THE PACIFIC AND RELATED ACTIVITIES

245 The Chairman of ICG/ITSU, Mr. R.H. Hagemeyer, introduced this item, emphasizing the expansion of the real-time seismic and tidal data now available to support the activities of the Pacific Tsunami Warning Centre and of the expansion of the Membership in the ICG/ITSU. Stressing ITSU's role in supporting the IOC contribution to IDNDR, he reviewed the successes of the group in recent years including a very active programme for training visiting scientists, the adoption of a Master Plan for the Tsunami Warning System in the Pacific and development and submission to UNDP of a five-year plan for the establishment of a Regional Tsunami Warning Centre for the South-West Pacific, and its associated project proposal.

246 Publications prepared under the auspices of the Group include the Atlas of Travel Time Charts, the Glossary of Tsunami Related Terms, the Second International Tsunami Workshop Proceedings and the soon-to-be-distributed Children's book on Tsunamis.

247 Mr. Hagemeyer noted the efforts of working groups that have been active during the intersessional period, including the IUGG-ITSU Group on the TIME Project, the Group on Public Education and Awareness and the Group of Experts on Real-time Tsunami and Seismic Data Exchange. He called attention to the Strategy Plan for the Project on Rapid Seismic Response and invited the Assembly to approve the plan.

248 Most notable disappointments were the lack of success to obtain funds for two major ITSU projects: the South-West Pacific Regional Tsunami Warning System and the Tsunami Inundation Modelling Exchange (TIME) project.

249 He noted a number of missions undertaken in relation to the recent Nicaraguan and Indonesian Tsunamis. These will provide the basis for advice to Governments as well as for presentations at the IUGG-IOC International Tsunami Symposium at Wakayama-ku, Japan in the latter part of 1993. They will undoubtedly be discussed in detail at the Fourteenth Session of the Group which will be held in Tokyo immediately following the Symposium.

250 Mr. Hagemeyer concluded by acknowledging the excellent co-operation and support provided to him by Member States during his term as Chairman, and noted that while the Group had made a significant contribution to the IDNDR and to improvements of the Tsunami Warning System, the full capability of the Group to contribute to these activities had not been fully utilized due to lack of funds.

251 The Assembly noted with appreciation the report and expressed its thanks and appreciation to Mr. Hagemeyer for his active chairmanship.

252 The Assembly particularly noted the progress achieved by the Group in the fields of public awareness, in establishing the rapid response system, in training activities and improvement of existing tsunami and seismic station networks. The Assembly expressed its thanks to Chile for drafting, with the financial assistance of IOC, textbooks on tsunami and earthquake awareness for kindergartens, secondary schools and colleges. This effort represents an important step in meeting the goals of IDNDR.

253 Several Delegates invited the Group to consider possibilities of applying existing tsunami warning procedures to other tsunami-prone geographical areas, e.g., the Mediterranean Sea and the wider Caribbean. The Assembly took note of the proposal made by the Delegate of Malta to investigate, jointly with the Chairman of the Group and Secretary IOC, possible ways of co-operation between IOC and the Open Partial Agreement of the Council of Europe on the Prevention of, Protection Against, and Organization of Relief in Major Natural and Technological Disasters (PP-ORMNT).

254 The Assembly expressed its strong support for the IOC Tsunami programme and noted that the programme was the most successful regional one. It was also noted that ITSU activities represent an important component of IDNDR.

255 The Assembly instructed the Secretary IOC, requested the Chairman of the Group and urged Member States concerned to continue efforts to obtain financial support from UNDP and other organizations involved in disaster mitigation for the implementation of the South West Pacific regional tsunami warning system and TIME project.

256 The Assembly welcomed the idea of having a transpacific tsunami warning system in which regional systems will participate, and requested the Group to investigate ways and means to meet this objective at the coming session of ICG/ITSU. The Chairman, ICG/ITSU, in responding to this proposal, directed the Assembly's attention to the recommendation in the Strategy Plan regarding the use of Peace Sat for the transmission of seismic data from Yugno-Sahalinsk. He noted that the use of Peace Sat for this purpose would also permit voice communication between that centre and the Pacific Tsunami Warning Centre. Additionally, it would permit the use of Peace Sat for the Pacific-wide voice broadcast of Tsunami Watchers and Warnings.

257 The Assembly noted with thanks the kind offer of Japan to host the Fourteenth Session of the ICG/ITSU in Tokyo from 30 August to 3 September 1993 under the auspices of the Japan Meteorological Agency and instructed the Secretary IOC to make all the necessary arrangements to hold it in conjunction with the IUGG-IOC International Symposium, Tsunami 93.

258 The Assembly approved the strategy plan contained in Document IOC-XVII/8 Annex 7 and adopted ~~Resolution XVII-9.~~

7. TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN MARINE SCIENCES (TEMA)

259 The Chairman of TEMA, Prof. Michel Vigneaux, introduced the Agenda Item. He stressed that the TEMA programme forms part of all on-going IOC programmes and is a major element of new initiatives such as GOOS and the follow up to UNCED. The main objectives of the programme are to:

- (i) assist the Commission's Member States to develop their capacities to carry out research and operational activities in marine sciences at national levels, and to enable their scientists and institutions to participate in international oceanographic co-operative projects; and
- (ii) close and narrow down the gaps in marine scientific research, ocean services and related operational capabilities among Member States.

260 The capacity building objective must be linked to a commitment of government support in order to achieve sustained results and benefit from the training. Prof. Vigneaux informed the Assembly that, in spite of limited available funds to continuously assist all IOC programmes, the TEMA programme was playing a catalytic role as a crossroad of IOC activities and was facilitating liaison among these, as well as with other international programmes and projects in an interdisciplinary manner. As an example, he explained that investigation of marine sediment records not only fulfills the scientific interests of marine geologists, but also provides useful data to reconstruct past climatic changes; thus the TEMA capacity building was providing a forum for co-operation and partnership development.

- 261 Prof. Vigneaux introduced the proposed TEMA Action Plan for 1993-1995 (Document IOC/INF-921) which is the updated version of the former Action Plan adopted at the Sixteenth Session of the Assembly, taking into account current budgetary conditions of the Secretariat and the Recommendations of UNCED. The Action Plan proposes activities for long- and short-term training with targets and planned actions. Following the guidance of the Executive Council at its Twenty-fifth Session concerning the emphasis to be placed on long-term training, a degree-related programme and the creation of networks of scientists and institutions have been initiated. It is suggested that international funding agencies, as well as national donor agencies, should be contacted through the IOC Secretariat, regional subsidiary bodies, and Member States, in order to secure the necessary financial support for the implementation of the programme. It is important to increase public as well as governmental awareness of the role and importance of marine sciences and ocean observations for community development and sustainability, and, in particular, for marine and coastal environmental protection and for ocean development. Co-operation and co-ordination with national IOC Contact Addresses and donor agencies are an essential mechanism for an improved and accelerated implementation of the TEMA programme.
- 262 The Assembly expressed its appreciation at the rate of implementation during the period of 1991-1992, in spite of the limited funds available, and supported the proposed TEMA Action Plan for 1993-1995.
- 263 The Assembly stressed that the TEMA programme should play an important role within the Commission's activities in order to respond to requirements resulting from UNCED, in particular to those related to capacity building. They also stressed that active TEMA programme implementation and co-ordination will create a good image of the Commission among the international community.
- 264 Several Delegations from developing Member States stressed the urgent need to execute resolutions adopted at previous Assemblies in order to develop core groups of scientists with a high-level degree and well trained technicians to strengthen their national capacities in marine scientific research, ocean services, related operational activities, apart from the fact that this would act as a multiplier at national and regional levels.
- 265 Some Delegates felt that the TEMA programme, in addition to traditional training activities, should, through workshops and training courses, devote its attention to developing a project for public awareness of the role of marine sciences, including environmental protection for sustainable development.
- 266 Some Delegates pointed out that there is a need to organize more advanced level training courses on specialized subjects directly linked to the currently on-going and foreseen IOC programmes. It is essential that such training courses should be linked to practical works, i.e., *in situ* training, field work, on-the-job training and ship-board training.
- 267 Delegates reported on their national and bi-lateral activities related to the TEMA programme, as well as on their past offers related to regional programmes.
- 268 The Assembly noted with satisfaction the information and reports provided as well as support offered by Member States to IOC programme activities.
- 269 Delegates of India, Japan and Republic of Korea informed the Assembly that they intend to offer berth spaces on their research vessels. The Delegate of Portugal indicated that there was a possibility of holding an expert meeting in Lisbon to update the Comprehensive Plan taking into account results of UNCED.
- 270 The Delegate of Mexico offered the use of the research vessels JUSTO SIERRA and PUMA for GOOS-related studies in the Caribbean and adjacent regions for specific periods, as part of the IOCARIBE-TEMA programme.

- 271 The Delegate of Canada expressed the view that the Commission could act as a forum to provide a dialogue between donor and receiving Member States. Canada has contributed and continues to contribute, substantial amounts to marine programmes in regions of interest to the IOC. In this regard, the Canadian Delegation is working closely with the Canadian International Development Agency to raise the profile of the Commission's activities within a national aid programme. He hoped to access extra-budgetary funds in the future, using this mechanism and urged other Member States to do the same.
- 272 The Assembly noted these offers with appreciation and instructed the Secretary IOC to take the necessary steps to follow them up, taking into account the availability of resources.
- 273 A few Delegations expressed concern at the risk of a brain drain should long-term training be frequently organized in the industrialized countries. This problem could be avoided if training activities are carried out more frequently in home countries on a regional basis, including in regional oceanographic centres of excellence.
- 274 The Delegate of Germany stated that although his country wished to assist the Commission's training programme, in particular the series of advanced training courses, it might consider reducing its contribution should the TEMA regular programme budget be drastically reduced, thus implying a loss of interest on the part of the Commission in training programmes.
- 275 The Secretary IOC informed the Assembly that, following the information provided by him in his opening statement (Annex III-B), the Director-General intended to reconstitute the level of funding to the TEMA programme for 1993 to the level indicated in the previous TEMA Action Plan for 1991-1995.
- 276 The Assembly noted with satisfaction this announcement.
- 277 The Delegate of France stated that, considering the close links between the development of TEMA activities and science programmes, his Government had decided to donate a sum of 100,000 French francs to the IOC Trust Fund earmarked for the TEMA programme.
- 278 The Assembly expressed its great appreciation for this contribution and called upon all Member States to contribute to the IOC Trust Fund.
- 279 The Delegate of the Netherlands expressed his concern regarding the most appropriate way of developing an efficient TEMA Programme, and proposed that alternative ways be evaluated to use the parts of the budget allocated to the TEMA Committee so as to ensure maximum cost-effectiveness.
- 280 The Delegate of Algeria, on behalf of countries in the Maghreb region, presented the regional project on chemistry, dynamics and marine pollution of the southern Mediterranean Sea, and invited Member States to assist in its development.
- 281 Dr. Dirk Troost, IOC/MRI Programme Officer in charge of the TREDMAR project, explained current developments of the computer-based learning module in which a module on the application of marine and coastal image data was recently released. It demonstrates the application of remotely sensed data to coastal management.
- 282 The Assembly noted the presentation and instructed the Secretary IOC to study different ways to ensure that functional activities of the marine science-related issues be properly integrated into the Commission's programmes, in particular as regards TEMA activities.
- 283 The Assembly adopted Resolution XVII-10

8. REGIONAL SUBSIDIARY BODIES AND CO-OPERATION

8.1 MATTERS ARISING FROM REGIONAL SUBSIDIARY BODIES

8.1.1 IOCARIBE

284 The Agenda Item was introduced by the Chairman of IOCARIBE, Dr. H. Perez Nieto. He referred to Document IOC/SC-IOCARIBE-IV/3 and Document IOC/INF-922, which corresponded to the revised IOCARIBE Medium-Term Plan (1993-1995).

285 He emphasized the positive results obtained within the Programmes on Marine Pollution Research and Monitoring (CEPPOL), Ocean Processes and Climate, Ocean Science in Relation to Non-Living Resources and Ocean Mapping, as well as in some Ocean Services programmes, in particular GLOSS and IODE. He noted that a slower rate of implementation had been attained within the OSLR, and particularly the TEMA regional component, mainly due to the lack of resources. He also informed that the revised Medium-Term Plan has been drafted for the IOCARIBE, taking into account the relevant decisions of UNCED to pursue the need to strengthen the regional TEMA component. He strongly emphasized the fact that effective and realistic implementation of the revised Medium-Term Plan requires an urgent reinforcement of the IOCARIBE Secretariat in Colombia, both in terms of personnel and operational resources, and called upon Member States to provide support in this respect.

286 The Assembly accepted the report of the Fourth Session of the IOCARIBE Sub-Commission as well as the revised IOCARIBE Medium-Term Plan.

287 Several Delegations expressed their concern about the anticipated return to Headquarters of the present IOC Senior Assistant Secretary for IOCARIBE, Dr. F. Robles, and urged Member States and the Chairman and Secretary IOC to seek solutions to the staffing problems of the IOCARIBE Secretariat with the Director-General of UNESCO. The USA offered to second Dr. Fred Berry for one year to act as IOCARIBE Secretary on an interim basis, stated that it would provide half of the resources needed (US\$ 22,500) for this purpose, and requested Member States of IOC/IOCARIBE to meet the other half. Emphasis was put on the need to maintain and reinforce the Secretariat in Colombia vis-à-vis other alternatives.

288 The Assembly thanked the USA for its offer, and requested the Secretary IOC to consult with Member States so as to ensure that the offer of secondment could be implemented. The Delegate of Colombia referred to the need for the Secretariat in Colombia to further expand its activities to cover other regions, such as the Eastern Pacific, eventually in co-ordination with other agencies, UNEP (especially the Action Plan for the Wider Caribbean Region), WMO and others.

289 The IOC Secretary re-stated the intention to keep the IOCARIBE Secretariat in Colombia. He informed the Assembly that, in the absence of UNESCO local administrative support, negotiations are under way with UNDP, Bogota, to provide administrative/accounting facilities for the regional Secretariat. He appealed to Member States presently providing Associate Experts and Consultants, such as Sweden and France, to continue with this important contribution to IOCARIBE.

290 The Assembly thanked Colombia, France, Mexico, Sweden and the United States for the important support provided to IOCARIBE.

291 The Assembly adopted Resolution XVII-11.

8.1.2 WESTPAC

292 Prof. Su Jilan, the Chairman of WESTPAC, introduced the Agenda Item, referring to Document IOC/SC-WESTPAC-II/3, the Summary Report of the Second Session of the IOC Sub-Commission for WESTPAC (Bangkok, Thailand, 25-29 January 1993) and the Action Paper for the Assembly (IOC-XVII/8).

293 Prof. Su reported to the Assembly on the intersessional activities in the WESTPAC region. The main events in the region were the IOC/WESTPAC Scientific Symposium on Marine Science (Penang, Malaysia, 2-6 December 1991), and the Second Session of the IOC Sub-Commission for WESTPAC (SC-WESTPAC-II). Thanking donor countries and the IOC Secretariat for their generous support, he informed the Assembly that 150 participants from 25 countries in and outside the WESTPAC region had attended the Symposium, with some 90 scientific papers being presented. A large number of young scientists from various countries of the region participated in, and presented papers to, the Symposium.

294 The Chairman of WESTPAC also reported on the outcome and Recommendations of the Second Session of WESTPAC, emphasizing that the Regional Action Plan for the next intersessional period had been carefully discussed and completed during the Session with a realistic financial estimation.

295 The SC-WESTPAC-II had expressed concern on the establishment of the IOC Regional Secretariat for WESTPAC. He informed the Assembly that progress had been made in this regard, and the negotiation on the establishment of the Regional Secretariat is expected to be concluded soon.

296 The success of the Second WESTPAC Scientific Symposium had prompted the Sub-Commission to propose that the Third IOC/WESTPAC Symposium, entitled "Sustainability of the Marine Environment: an Integrated Scientific Approach to Coastal Area Management", be organized in Bali, Indonesia end of November 1994 or early 1995. He encouraged Member States to participate in and support the WESTPAC Symposium.

297 The Assembly expressed its satisfaction with the progress made in the implementation of WESTPAC projects during the intersessional period, and urged the Secretary IOC and Member States to provide continued support for the implementation of actions defined at the last WESTPAC Session during the next intersessional period.

298 The Assembly stressed that the planned WESTPAC Scientific Symposium should be a key element of the WESTPAC activity over the next intersessional period, and invited Member States to support the organization of the Symposium.

299 With regard to the establishment of the IOC Regional Secretariat for WESTPAC, the Assembly expressed its appreciation to the Government of Thailand and the Secretary IOC for the progress made, and emphasized the importance of completing the negotiation between the Government of Thailand and UNESCO as soon as possible, in order to ensure effective implementation of the tasks assigned to the Sub-Commission.

300 The Delegate of Japan expressed the intention of his Government to second an expert to the Regional Secretariat when it has been formally established. He expressed his country's willingness to continue to host an annual Training Course on Data Management, and to provide ship-board training.

301 The Assembly expressed its appreciation to the Government of Malaysia for successfully hosting the Second IOC/WESTPAC Scientific Symposium and expressed its gratitude to the Government of Indonesia for kindly offering to host the Third IOC/WESTPAC Scientific Symposium.

302 The Assembly expressed its great appreciation to the Government of Japan for offering to host the Third Session of WESTPAC in early 1996. The Assembly accepted the Report of the Second Session of WESTPAC.

303 The Assembly adopted ~~Resolution XVII-12~~

8.1.3 IOCINCWIO

304 Dr. E. Okemwa, Vice-Chairman of the IOC Regional Committee for the Co-operative Investigation of the North and Central Western Indian Ocean (IOCINCWIO), referring to the Summary Report of the Third Session (Document IOCINCWIO-III/3), informed the Assembly of the results of the Session on

behalf of Dr. S. Ragoonaden, Chairman, unable to be present. He expressed his appreciation to donor agencies and Member States which continued to provide assistance to the region, in particular Swedish SAREC, VLIR (Flemish Inter-university Council, Belgium) and Germany.

305 The Delegate of Madagascar stated that her country supports the IOCINCWIO-III Recommendations, and stressed the need to create new co-operative networks and to strengthen those already existing. Referring to the intention of Madagascar to host the Fourth Session of the Regional Committee, she informed the Assembly that her country would confirm this in due course.

306 The Representative of SAREC stated that his organization had been supporting IOCINCWIO activities and had been implementing its own regional programme. He stated that there was a strong possibility of continued, and possibly increased, support over the next three years.

307 The Delegates of the United States and Germany informed the Assembly that their countries had participated in IOCINCWIO-III, and also in the IOMAC meeting. The Delegate of the United States encouraged greater co-operation between IOCINCWIO, IOCINDIO and IOMAC.

308 The Assembly accepted the Summary Report of IOCINCWIO-III.

309 The Assembly adopted Resolution XVII-13.

8.1.4 IOCINDIO

310 The Deputy Secretary IOC, Dr. Klaus Voigt, informed the Assembly of recent progress in the implementation of the programme adopted at IOCINDIO-I (Islamabad, Pakistan, July 1988). Although activities were concentrated on the ROPME sea area (see item 8.1.6), several IOC-supported activities had also taken place in other parts of the region: a Training Course on Marine Pollution (Goa, India, 30 March-10 April 1992), preparatory meetings relating to the planned Indian Ocean JGOFS programme, and to the IOMAC Workshop on Marine Scientific Co-operation in the Indian Ocean (Colombo, Sri Lanka, 18-25 October 1992), also supported by Australia, USA and several other countries.

311 An IOC-UNEP Workshop was convened in Dacca, Bangladesh (16-19 November 1992) in order to complete the regional climate impact assessment report and the design of a related case study. Following a preparatory IOC-UNESCO Science Sector mission carried out in 1991 at the request of the Islamic Republic of Iran, an IOC-UNESCO expert mission was organized to the country from 11-23 April 1992 to set up an Iranian National Centre of Oceanography.

312 The Assembly was informed by the representative of UNEP of the plan for an Indian Ocean Basin-wide Experiment with several regional conventions, which include joint action plans dealing with pollution from all sources, coastal management and fishery aspects. The Assembly recommended that IOCINDIO work together with IOCINCWIO and IOMAC on further development and implementation of IOC- and particularly TEMA-related regional activities in the Indian Ocean. This would ensure, *inter alia*, that the countries of the Indian Ocean region would benefit from scientific progress resulting from the World Climate Research Programme (WCRP), and the Joint Global Ocean Flux Study carried out during the late 1990s.

8.1.5 IOCEA

313 The Chairman of the IOC Regional Committee for the Central Eastern Atlantic (IOCEA), Dr. Ndiaga Gueye, informed the Assembly of the main results and decisions of the Regional Committee's Third Session, referring to the Summary Report of the Session and its Recommendations (Document IOCEA-III/3). He drew attention to the difficulties faced by the countries in the implementation of regional activities, and emphasized the need to take into account the development requirements expressed by Member States in the light of the Recommendations of UNCED.

314 The Delegate of Morocco expressed his appreciation to Spain for the offer to host the Fourth Session in the Canary Islands.

315 The Delegate of Spain confirmed this offer and said that the Fourth Session would take place in the new premises of the University of Las Palmas de Gran Canaria. He also informed that Spain had, within the framework of the WOCE programme, occupied a section across the Atlantic Ocean, starting at the African coast and ending at the American continent, for which it had provided two million US dollars.

316 The Delegate of Nigeria made comments on some specific subjects discussed in the IOCEA report. He proposed a training course on the identification of phyto- and zoo-plankton of the Central and Eastern Atlantic. Regarding the project in coastal erosion, Nigeria would be prepared to make her facilities and resource personnel available for the planned workshop, possibly in 1994. As a contribution to regional capacity building and co-operation, his country would like to offer to train four scientists from the region in the measurement of physical processes in the coastal and marine environment. He reconfirmed his country's strong support for the establishment of a Regional Dispatch Centre and its location in Côte d'Ivoire. Nigeria, and in particular, the Nigerian Institute for Oceanography & Marine Research (NIOMR), would be very pleased to organize the envisaged pilot physical oceanography course at the University of Lagos and wished to be kept informed by the Secretary IOC of progress made. Concerning the question of funds, he stated that it had become obvious from IOCEA-III that inadequate financial resources have been responsible for the lack of implementation of some projects in the region. He added that, in his view, IOCEA Member States should have been urged to make financial contributions equal to at least 20% of the total budget, perhaps in kind, required for the 1993-1996 programme: it is only by commitments on the part of nations, donor agencies and organizations that our request for assistance can have some level of impact.

317 The Secretary IOC confirmed that the Secretariat is still working on the pilot course on physical oceanography in Nigeria; this could probably take place in 1993, and support for the participation of four scientists from the region is envisaged. Regarding the living resources programmes, the LME project should be part of the programme for the region.

318 The Delegate of Ukraine expressed the strong interest of Ukrainian scientists in IOCEA activities, and hoped that co-operation would continue, especially within the framework of the COMARAF programme.

319 The Delegate of Guinea stated that his country supports the working plan adopted by IOCEA-III and requested the IOC Assembly to allocate an adequate contribution to ensure the implementation of the regional programmes.

320 The Delegate of France expressed his appreciation for the success of the IOCEA Session in Dakar, in which France had participated, and informed that his country would explore the possibilities of an increased support for regional activities.

321 The Assembly accepted the Summary Report of IOCEA-III.

322 The Assembly adopted Resolution XVII-14.

8.1.6 Collaboration with ROPME

323 Introducing this Agenda Item, Dr. Neil Andersen recalled that reference had already been made to elements of IOC co-operation with ROPME under Agenda Item 5.5. He drew attention to Documents IOC-XVII/6 and IOC-XVII/8 which contained the achievements of this co-operation.

324 A Workshop had been convened (Kuwait, 24-28 January 1993) to address the results of the RV MOUNT MITCHELL Expedition. Over 140 regional and other international scientists had participated with 48 presentations in four sessions over four days. A major Recommendation from the Workshop cited the need to organize further cruises to fill the gaps in knowledge of the oceanography of the ROPME sea

area which still exist. To this end, plans are being discussed with ROPME to organize a further cruise in the summer of 1993 with the assistance of the Inter-Islamic Network on Oceanography (INOC), and the Government of Turkey, which has offered an oceanographic vessel for this purpose. Preliminary discussions have been held with India to make a vessel available for a further cruise. Dr. Andersen stressed that unless continued measurements are made in the long term, the results in hand will be seriously compromised.

325 A ROPME-Tokyo University of Fisheries-IOC cruise with more limited objectives than the MOUNT MITCHELL cruise, was undertaken between 13 and 26 January 1993, on board the TS UMITAKA-MARU.

326 An International Scientific Conference on Oceanography, Marine Ecology and Environmental Aspects of the Persian Gulf and the Sea of Oman, is planned in co-operation with ROPME and UNEP for late 1993 in Tehran, Islamic Republic of Iran, to review progress made in the implementation of the ROPME-IOC Integrated Project Plan for the Coastal and Marine Environment of the ROPME region.

327 Emphasis had been placed on capacity building in the co-operation with ROPME. In addition to on-board training during the cruises, an IOC-ROPME Training Course on Marine Data and Information Management was held (Kuwait, 18-28 October 1992) and another training workshop on Current Measurements and Processing of Current Meter Data was organized (Doha, Qatar, November 1992). A ship-of-opportunity programme for the ROPME Sea Area is under discussion between IOC and ROPME.

328 Dr. Andersen informed the Assembly that ROPME had requested IOC to develop a Memorandum of Understanding in the context of the Joint IOC-UNEP Intergovernmental Panel for GIPME, for the purpose of cementing relationships between IOC and ROPME.

329 The Delegate of the Islamic Republic of Iran congratulated the Secretary IOC on the impressive progress made in pursuance of the objectives and targets embodied in Resolution XVI-14 of the Sixteenth Session of the Assembly, and announced details of the International Scientific Conference planned for Tehran in late 1993.

330 The Delegate of Turkey stated that his country would be willing to assist in the organization of the cruise planned for the summer of 1993 on a cost-sharing basis with ROPME and organizational support from IOC. He expressed regret at the absence of delegations from the majority of Member States in the region at the Assembly.

331 The Representative of UNEP expressed satisfaction at their co-operation with IOC under the UNEP-led United Nations Inter-Agency Plan of Action addressing the environmental consequences of the Iraq-Kuwait conflict in the ROPME region. He recalled that UNEP's involvement in the implementation of the marine component of the Action Plan resulted in the successful organization of the MOUNT MITCHELL cruise, as well as the Workshop on the results of the cruise. He hoped that the results of this effort would prove valuable to the environmental rehabilitation of the region and pledged UNEP's continued co-operation with IOC in future activities in the region, including the organization of the International Conference in Tehran in late 1993.

332 The Representative of the Inter-Islamic Network on Oceanography (INOC) described the involvement of his organization in planning the proposed 1993 summer cruise, and pledged to work in close co-operation with IOC towards the realization of this cruise, as well as on other matters of mutual interest.

333 The Assembly took note of progress made in the implementation of the objectives and targets embodied in Resolution XVI-14, congratulated the Secretary IOC, and expressed appreciation to the Delegate of the USA for the very important and necessary support provided by USA-NOAA to this end.

334 The Assembly expressed satisfaction with the on-going arrangements for a 1993 Summer Cruise, and thanked the Government of Turkey for the offer of a research vessel for this cruise and INOC for their involvement in the planning of the cruise.

335 The Assembly called on Member States and scientific organizations, both within and outside the UN system, to support the International Scientific Conference on Oceanography, Marine Ecology and Environmental Aspects of the Persian Gulf and the Sea of Oman (Tehran, late 1993).

336 The Assembly instructed the Secretary IOC to conclude the Memorandum of Understanding with ROPME with a view to consolidating and expanding existing co-operation.

8.1.7 Mediterranean

337 Mr. Gualter Soares, IOC Technical Assistant Secretary, introduced this Item. He informed the Assembly of progress achieved on the major activities supported by IOC and developed in co-operation with ICSEM.

338 With regard to POEM, (Physical Oceanography of the Eastern Mediterranean), the second phase called POEM-BC (POEM-Biology/Chemistry) started with a multidisciplinary general survey of the Eastern Mediterranean, with the chemical and biological components successfully carried out in October-November 1991. This survey had been preceded by (i) a Workshop on biological intercalibration held in May 1991 at the Osservatorio Geofisico Sperimentale in Trieste under the auspices of the Institute of Oceanography and Fisheries, Split, Croatia; and (ii) an intercalibration exercise for dissolved nutrients hosted and co-ordinated by the Israel Oceanographic and Limnological Research Ltd., Haifa, Israel in 1991. During the Steering Committee meeting held at UNESCO headquarters, Paris, January 1992, plans for POEM-BC (POEM-Biology/Chemistry) were put forward which include, in particular, an Intermediate Water Formation and Dispersion Experiment.

339 A planning committee meeting for the Levantine Intermediate Water Experiment was held (Venice, Italy, 1 July 1992). In order to benefit from the data collected during the first phase of POEM, this data needs to be reviewed and calibrated in the context of the POEM-BC, October-November 1991, general survey data set. An IOC-supported intercalibration workshop on biochemical data will be organized in Israel in 1993.

340 The first operation of PRIMO (the International Research Programme in the Western Mediterranean), PRIMO-0, was initiated to verify models and previous observations on seasonal variability in the northern part of the basin by the deployment of about 60 current meters (December 1990-May 1991). Analysis of the collected data has been carried out, and some of the results were presented at the ICSEM Congress (Trieste, October 1992). The publication of a special issue of a series of papers on the above results is envisaged.

341 Following decisions taken at the Workshop on Insular Coastal Systems (Malta, October 1991), a series of actions limited in time (a few months) and space (two to three beaches in the north-east of the island) were undertaken by the Maltese teams; the analysis of the data is underway. A revised version of the initial related project proposal will be prepared to be submitted to the Commission of the European Communities (CEC).

342 Regarding the IOC-FAO programme on Ocean Science in Relation to Living Resources (OSLR), IOC recently received a proposal for a study of anchovies in the south-west Mediterranean, which would involve teams from Algeria, France, Italy, Morocco, Spain, and Tunisia. This proposal could lead to the development of a Mediterranean component of the OSLR programme.

343 The Delegate of Monaco recalled the interest and involvement of the Principality of Monaco in the oceanographic study of the Mediterranean Sea, the important role played by his country at the Rio Conference, and the excellent co-operation which exists between ICSEM (the President of which is the Prince of Monaco) and IOC. He stated that the Mediterranean Sea should be considered as a model ocean

and test basin. He drew the attention of the Assembly to the study of certain phenomena presently occurring in the Mediterranean and that could develop in other oceanic areas. This study was therefore of the utmost importance. He added that the Mediterranean is undergoing an invasion, through the Suez Canal, of certain harmful species previously unknown in the Mediterranean.

344 The Assembly expressed support for the activities developed by IOC in the Mediterranean Sea in co-operation with ICSEM. It also noted the statement by the Delegate of Monaco regarding the Mediterranean as deserving special attention as it provides an ideal opportunity to study the trends which are likely to re-appear in other ocean areas. In this respect, the development of a regional "GOOS" for the Mediterranean could perhaps help provide an early warning system.

345 The Delegates of Greece, Italy, Israel and Turkey stated that POEM data sets covering the period 1985-1989 would be made available to World Data Centres (WDCs) and could be useful to GOOS.

346 The Delegate of Italy informed the Assembly of the different national projects devoted to specific aspects of the Italian basin which demonstrate the renewed interest of Italian scientific authorities in oceanography.

347 The Delegates of the Federation of Russia and of the United Kingdom recalled past scientific activities in the Mediterranean, and expressed their great interest in studies being pursued there.

348 The Delegate of Algeria stated that his country would like to support the extension of SARP activities to the Mediterranean Sea. He reconfirmed that his country would host the regional workshop on the OSNLR project, defined at the OSNLR consultation arranged at the ICSEM Congress (Perpignan, 1 October 1990) and which could not be held in 1992 due to lack of resources. He evoked the SOSMED Project (Study of the South Mediterranean Sea) carried out by a team of Algerian experts under the auspices of the Inter-Islamic Science and Technology Network on Oceanography (INOC), and finalized during the meeting held in Tlemcen, Algeria (February 1993).

349 The Delegates of France and Spain expressed their interest in the SOSMED project.

350 The Observer of INOC invited Member States of IOC to contribute to the strengthening of the SOSMED Programme which will develop studies on chemistry, dynamics and marine pollution of the southern Mediterranean Sea, stressing that its initiation will contribute to the reinforcement of co-operation and co-ordination between the on-going programmes of the Commission and those of UNEP. He added that this programme is supported by Libya, Mauritania, Morocco and Tunisia.

351 The Assembly noted with appreciation the information on the activities in the Mediterranean Sea.

8.1.8 Other regions, including South-west Atlantic, Southern Ocean and Southeast Pacific South-west Atlantic

352 The Delegate of Uruguay presented the following statement on behalf of Argentina, Brazil and Uruguay, regarding the establishment of a Sub-regional coordination mechanism for oceanography and ocean affairs: "Argentina, Brazil and Uruguay are taking steps towards the establishment among them of a Sub-regional Programme of Co-ordination of National Experts from the three countries for the Upper Southwest Atlantic, on the basis of the already existing cooperation between the parallel of Cabo Frio in Brazil and the 45 degrees south parallel. Its mission will be to co-ordinate the oceanographic research activities of the experts belonging to the three countries and the implementation of joint scientific initiatives among them. The Programme will be created during a meeting of governmental representatives from the three countries, to be held later this year. Through this initiative, Argentina, Brazil and Uruguay will co-ordinate their common efforts in order to strengthen their relation with IOC".

353 The Assembly welcomed this initiative.

Southern Ocean

354 The Delegate of Germany introduced this item.

355 **The Assembly noted with satisfaction** the report "The Southern Ocean: A Review of Activities in Relation to IOC Programmes" (Document IOC/INF-909) prepared by the Secretariat, with the assistance of Dr. G. Giermann and with input from the WMO Secretariat.

356 **The Assembly decided** to retain the IOC Regional Committee for the Southern Ocean as an intergovernmental forum for promotion and co-operation of research and ocean services and relevant TEMA activities in the Southern Ocean, particularly related to GOOS, WCRP, GIPME and OSLR.

357 **The Assembly invited** Member States interested in the Southern Ocean to designate their official national contacts for SOC in order to better co-ordinate national activities with IOC research programmes and ocean observing and data management systems in the Southern Ocean. **The Assembly also instructed** the Secretary to ensure wide dissemination of Document IOC/INF-909 among the international organizations concerned, requesting that they provide their views on future co-operation with IOC in the Southern Ocean.

358 **The Assembly also recommended** that the Secretary continue close interaction either directly and/or through SOC national contacts, with governmental and non-governmental bodies such as ATCM, SCAR and SCOR (of ICSU), CCAMLR, WMO, FAO and UNEP, with a view to strengthening international research programmes and improvement of ocean observations and data exchange in the Southern Ocean in order to meet the requirements of UNCED Agenda 21 and of the two Conventions, as well as the Protocol to the Antarctic Treaty on Environmental Protection.

South-east Pacific

359 The Secretary IOC informed on on-going activities undertaken mainly with CPPS and co-ordinated with WMO and UNEP. Several of them are carried out through the IOC Regional Secretariat for IOCARIBE in Colombia. As a part of the OPC Programme, activities are developed in the framework of the joint IOC-WMO-CPPS Working Group on El Niño investigations, and receive partial support from the UNDP-CPPS-IOC Subregional Project RLA/88/010. In the framework of the UNEP Action Plan for the South East Pacific (including also Panama), the IOC is supporting various activities related to research, monitoring and abatement of marine pollution. The Commission also supports regional components of the OSNLR programme, mainly concerned with problems of coastal erosion and sedimentation; in this respect, the setting up of a regional group of experts is being considered.

360 **The Assembly took note** of the information, and **instructed** the Secretary to maintain the level of activity to the extent possible within existing means.

Regional Black Sea Co-operation Programme

361 Dr. Klaus Voigt, Deputy Secretary IOC, recalled that Resolution XVI-7 had noted the accelerating deterioration of the environmental quality of the Black Sea Basin and had recognized, among other things, the increasing urgency for a comprehensive programme for the protection and development of the marine and coastal areas of the Basin, including its living and non-living resources.

362 **The Executive Council**, at its Twenty-fifth Session, had recognized the important initiatives of scientists from Turkey, Ukraine, Russia, Bulgaria and Romania, as well as the USA and Germany, that had resulted in the development of the scientific research programme called the "Co-operative Marine Science Programme for the Black Sea (COMSBlack)" and had decided to endorse and support the programme.

- 363 Dr. Voigt described COMSBlack's scientific achievements to date as being impressive and referred to Document IOC/INF-924 which is a progress report on COMSBlack's activities in the 1992-93 period. He remarked that activities described in the report are broad-based and include results of monitoring and systematic observations spanning physical and bio-geochemical phenomena. The execution of UNESCO's Chernobyl and Blue Danube projects has also provided considerable impetus to the study of the ecology of the Black Sea.
- 364 Dr. Voigt explained that a Convention for the Protection of the Black Sea had been signed in Bucharest, Romania, on 23 April 1992, by all the States bordering the Black Sea; this Convention, which is in the process of ratification, demonstrates the common will of countries in the Black Sea region to collaborate towards the reduction of the influx of contaminants from direct and indirect sources to the Black Sea and the improvement of the health of that Sea.
- 365 The Delegate of the Russian Federation pointed out that his country has had a long-standing interest in the scientific study of the Black Sea, and had positively influenced the formation of COMSBlack. He said IOC has a unique opportunity to exert its influence on the region and its populations by assisting COMSBlack to study the adverse effects of the pollution of the Black Sea.
- 366 The Delegate of the Ukraine said that the Black Sea affords a fascinating natural laboratory to study geochemical processes that operate in the Sea and influence its ecology and marine populations.
- 367 The Delegate of Bulgaria called attention to a draft resolution which is designed to encourage the study of the ecosystem of the Black Sea. He noted the significance of the Danube and its tributaries for the Black Sea, and stressed the need to involve those countries responsible for pollution in the Black Sea Study. He said the increasing problem of harmful algal blooms needed to be addressed.
- 368 The Delegate of Turkey expressed satisfaction at the level of interest in IOC in COMSBlack, describing the programme as a mirror image of the Mediterranean's POEM and PRIMO programmes and stated his conviction that COMSBlack will blossom into a genuine IOC project.
- 369 The Representative of UNEP informed the Assembly of progress in the development of the Black Sea Action Plan as the Eleventh Action Plan of UNEP's Regional Seas Programme. The Convention for the Protection of the Black Sea was a useful forerunner to the Action Plan. He pointed out that UNEP is developing specific projects to implement the Action Plan and extended UNEP's invitation to IOC to provide its support for the design and implementation of those projects falling within its field of competence.
- 370 He stated that the GEF, which is a joint effort of UNEP, UNDP and the World Bank, had approved a project for the development of the coastal and marine environment of the Black Sea and the details of this project are being negotiated with Member States of the Region.
- 371 The Assembly took note of the achievements of COMSBlack to date and the enthusiasm of scientists from the Black Sea Region to continue to work towards the attainment of the objectives and targets for which the programme was set up.
- 372 The Assembly approved the decision of the Twenty-fifth Executive Council to adopt COMSBlack as an IOC programme and instructed the Secretary IOC to continue to support the programme to the extent possible within available means.
- 373 The Assembly also approved Resolution XVII-15.

9. CO-OPERATION WITH OTHER ORGANIZATIONS OF THE UNITED NATIONS SYSTEM AND OTHER BODIES

9.1 THE INTER-SECRETARIAT COMMITTEE ON SCIENTIFIC PROGRAMMES RELATING TO OCEANOGRAPHY (ICSPRO)

9.1.1 Sessions of ICSPRO and Related Co-operation with the ICSPRO Agencies

374 The Secretary IOC introduced the item referring to Document IOC-XVII/8, paras 194-198. He informed the Assembly that a Special Session of ICSPRO was held in UNESCO, 1-2 September 1992, but that due to various constraints no subsequent regular session had been held in 1992, as originally planned.

375 The Special Session had been convened to consider mainly the co-ordination of the follow-up to UNCED.

376 The renewed interest in the oceans, the marine environment as a whole and its resources, calls for all agencies and bodies in the UN system with programmes relevant to the oceans, to intensify and strengthen their co-operative efforts, and to co-ordinate and harmonize reporting functions so that a coherent response to Agenda 21 can be ensured.

377 The Special Session agreed that, in the light of the decisions of UNCED regarding International Institutional Arrangements (Chapter 38), a co-ordination and reporting mechanism solely devoted to ocean and coastal area concerns is required within the UN system. While the purview of this mechanism would naturally focus on Chapter 17, other relevant issues should be considered in its work, notably those marine-related in the UN Framework Convention on Climate Change and the UN Convention on Bio-Diversity, as well as implementation of the UN Convention on the Law of the Sea. The functions of such a mechanism should respond to the need to ensure a co-ordinated system-wide response to Agenda 21 and also assist the Administrative Committee on Co-ordination (ACC) in fulfilling the functions proposed in Chapter 38 (paras 16 and 17) in relation to marine affairs.

378 Co-operation within the context of efficiency, work-sharing and joint programming is even more important now than when ICSPRO was first established and is extremely relevant to the decisions of UNCED regarding institutional arrangements. The Special Session of ICSPRO explored various mechanisms that could achieve the objective in Chapter 38 of Agenda 21 (para. 38.8(g)):

"to establish effective co-operation and exchange of information between United Nations organs, organizations, programmes and the multilateral financial bodies ...".

379 The following proposals were made for such mechanism :

- (i) ICSPRO with its present terms of reference;
- (ii) ICSPRO with an expanded composition and revised mandate (UNEP and IAEA have been invited to become members of ICSPRO);
- (iii) revival of the ACC Sub-Committee on Marine Affairs;
- (iv) a new body.

380 Having considered the four options, the Special Session of ICSPRO was of the view that the second and third options are the most efficient and cost-effective. The ACC Task Force noted the proposal to use a transformed ICSPRO and included a reference to this in its report to the ACC.

381 The Chairman invited a statement from the Representative of the WMO who said that ICSPRO as it had been originally conceived had served well. He noted that, in order to ensure its follow-up, UNCED had placed much broader and more complex requirements on the UN system than ever before.

WMO firmly believed that the ICSPRO mechanism could and should play a role in this process. Then, however, it must be broadened in scope, terms of reference and membership. WMO had participated in the Special Session and had co-sponsored the proposed new Terms of Reference which have been circulated to other Heads of Agencies by the Director-General of UNESCO and the Secretary-General of WMO. WMO will continue its support for the role of IOC and its full participation in a broadened ICSPRO.

382 The Chairman invited the Representative of FAO to provide additional views or information.

383 In view of the formal request sent to the Director-General of FAO by the Director-General of UNESCO and Secretary-General of WMO, the Representative of FAO confined himself to some preliminary remarks. Recognizing the complexity of the UNCED programme on oceans, and the limitations of the mandate of the UN Specialized Agencies, he recognized the need for an efficient mechanism for co-ordination, co-operation and reporting to the ACC. He concurred, in principle, that ICSPRO could be considered by the ACC for such a purpose if agreement can be reached on new terms of reference and *modus operandi*. With this in mind, FAO looked forward to co-operating with other Agencies at the next ICSPRO meeting.

384 The Chairman invited a statement from the Representative of UNEP.

385 UNEP wished to reiterate its appreciation to ICSPRO and ICSPRO member organizations for having extended an official invitation to UNEP to join ICSPRO. UNEP had, as in the past, participated in the Special Session of ICSPRO (Paris, 1-2 September 1992) and, on that occasion, had expressed its strong interest in continuing its co-operation with ICSPRO and its member organizations in many areas of mutual interest, as well as in becoming an active member of ICSPRO.

386 UNEP fully supported ICSPRO and was looking towards what a broadened ICSPRO with an expanded composition and revised mandate could achieve in terms of the co-ordination of marine-related activities within the UN System. It was also looking towards reporting, in a coherent manner, to the appropriate body of the UN General Assembly, particularly regarding the follow-up to UNCED, with special reference to matters related to the oceans and coastal areas embodied in Chapter 17 on oceans, and Chapter 38 on the institutional arrangements of Agenda 21.

387 UNEP would attend the forthcoming session of ICSPRO, which it was hoped would be convened in the very near future, in order to discuss all the above matters in the constructive spirit of co-operation presently prevailing between UNEP and all ICSPRO member organizations.

388 Many Delegations made statements in support of ICSPRO and emphasized that IOC works through ICSPRO in its efforts to increase co-operation and co-ordination, including on the follow-up to UNCED. They expressed support for the initiatives taken in relation to using ICSPRO as a mechanism in the follow-up to UNCED, and to ensuring no duplication or waste of effort.

389 The Delegate of Portugal recalled the historical development of ICSPRO, and cautioned that too much broadening might lead to a dilution, and decrease its efficiency. He considered it most valuable to include only those bodies which are involved with matters concerning the IOC. He expressed serious doubts about transforming ICSPRO into a body for follow-up actions of all matters relating to the oceans with respect to UNCED. He also invited the Secretary IOC and/or the Director-General of UNESCO to ensure that the Chairman IOC can participate as a full member in ICSPRO, representing IOC.

390 The Delegate of Portugal concluded that an in-depth study of the matter should be made and that, if possible, the proposed revised text for the ICSPRO agreement be circulated to Member States.

391 The Delegate of Venezuela strongly supported the use of ICSPRO as an appropriate mechanism for the follow-up to UNCED with respect to oceans. He cautioned against not pursuing this matter now in view of the relatively rapid process presently underway to streamline the UN system machinery. He considered that UNIDO should also be involved, referring to activities in the Caribbean in the creation of a center for ocean research and marine technology development, in which UNIDO is an important partner.

392 The Delegate of Mexico stressed the importance of ICSPRO as a mechanism for the development of the IOC, and the co-operation and co-ordination of related activities in the UN system. Full membership of UNEP and also IAEA in ICSPRO would be most welcome, and he invited the Director-General of UNESCO to pursue this matter.

393 The Assembly agreed that the most appropriate mechanism for strengthening ICSPRO should be sought, while avoiding its dilution through over-expansion. In this way, the Committee could *inter alia* ensure its role vis-a-vis the oceans in follow-up to UNCED. The Assembly instructed the Secretary to pursue this matter in the best interests of the IOC and to report to the next Executive Council.

9.1.2 Study of Legal Aspects of Ocean Data Acquisition Systems, Aids and Devices (ODAS)

394 The Assembly had before it, for information, the second revised version of the Draft Convention on the Legal Status of ODAS, as prepared by Prof. Anatoly Kolodkin, International Maritime Law Association (IMLA), and his team. Prof. Kolodkin explained how this revised version had been worked out on the basis of a number of comments, and in an endeavour to maintain a balance between the concerns of buoy deployers, on the one hand, and the rights of coastal states, on the other, as had already been underlined at the Twenty-fifth Session of the Executive Council (Document IOC/EC-XXV/3, paras. 271-272).

395 The Assembly expressed its appreciation to Prof. Kolodkin for the excellent and considerable amount of work accomplished so far. In particular, the Assembly noted with satisfaction that most of the comments expressed by various Member States had been incorporated into the second revised version, while considering that some work was still needed with regard to the precise wording of the draft Convention.

396 The Assembly noted the wish expressed by some Member States that the overall process leading to the possible adoption of the Convention be accelerated, while others were still uncertain as to the level of priority to be given to this exercise. For instance, those experiencing acts of vandalism or theft of their automated instruments, as well as those coastal states suffering from undesired intrusion of devices in the waters under their national jurisdiction, should report to the Secretariat, in order that the appropriate level of priority and need could be assessed in the search for a legal solution to these problems.

397 Finally, the Assembly decided that the course of future action on this endeavour should be that already decided at its Sixteenth Session, i.e.:

- (i) to present the second revised version of the Draft Convention to the forthcoming session of ICSPRO, with a view to establishing a group of experts among concerned international organizations;
- (ii) to entrust the group of experts with preparing a third revised version for submission to organizations concerned.

9.2 CO-OPERATION WITH THE WORLD METEOROLOGICAL ORGANIZATION (WMO)

398 In introducing this agenda item, the Secretary IOC recalled that this question had, in fact, already been tackled under other agenda items dealing with oceans and climate, GOOS and related activities, and, of course, ICSPRO, since the IOC-WMO co-operation was taking place within the more general context of that Committee. The key issues are to improve the way programmes are formulated in common (the example of a possible future programme on storm surges was cited), and to increase the support needed for implementing various common programmes, including those arising from follow-up of UNCED (the suggestion of a joint approach to funding agencies was made).

399 The Representative of WMO emphasized the importance which his organization attaches to its relations and interactions with IOC. He noted that oceanographers and meteorologists, along with hydrologists and other environmental scientists, must work very closely together, both now and in the

future, in addressing the scientific challenges inherent in understanding and properly managing the earth's natural fluid environment. In this context, WMO sees the IOC as its natural partner in the intergovernmental approach to these challenges.

400 He then expressed the satisfaction of his organization with the very close and friendly relations which presently exist between WMO and IOC, and with the high level of co-operation and co-ordination in programme activities, as manifested in the numerous existing joint programmes such as IGOSS, WCRP, GCOS and now GOOS. In doing so, however, he noted that this co-sponsorship implied commitments on the part of the co-sponsoring organizations, both at the level of inter-governmental planning, and also in marshalling and co-ordinating support at the national level for the implementation and maintenance of the various programmes and systems. He further noted that GOOS, in particular, is proposed as essentially an operational system, which will require the establishment and maintenance of proper operational management structures at national and international levels. In this context, the existing experience of national Meteorological Services and of WMO in such management should be of value to GOOS, and the WMO Representative assured the Assembly that his organization would do everything possible to fulfil its commitments to GOOS, as well as to the other joint activities with the IOC.

401 The Representative of WMO briefly informed the Assembly of the status of planning for construction and occupation of a new WMO headquarters building in Geneva. He then concluded by expressing the appreciation of his organization to the Assembly for its recognition of the importance of IOC's relations with WMO, assured the Assembly that this recognition is reciprocated by WMO, and indicated the desire of WMO that co-operation and co-ordination between the two complementary organizations, IOC and WMO, should be even further strengthened in the future.

402 The Assembly expressed its appreciation of the presentation made by the Representative of WMO, as well as of the co-operation between IOC and WMO to date. In so doing, it recalled that IOC and WMO have different mandates and expertise, some of which are of no concern to the other party. On the other hand, the two organizations need each other to define and implement several large programmes, ought to collaborate with a holistic approach to their relationship and, thus, should strengthen their co-operation. The Assembly unanimously stressed that such a strengthening implied not only a closer co-operation between the Secretariats and an expanded collaboration at the global level, but also, and at least as important, an improvement in the co-operation between the oceanographic and meteorological communities at the regional and national levels. This is indeed the only way in which commitments made to develop and implement programmes, e.g., as a follow-up of UNCED, can expect to be actually fulfilled.

403 The Assembly commended the Secretariats on the practical arrangements they have developed to organize their co-operation, such as the meetings of Representatives of both Secretariats. It requested that the outcome of these meetings be quickly communicated to Member States in order to allow the latter to take appropriate measures at the national or regional levels, as and where needed.

404 With regard to the space which may be made available in the planned new WMO building in Geneva, the Assembly agreed that the idea of the IOC Secretariat benefitting from new and more modern facilities was worth being considered. Nevertheless, it reiterated its decision that no formal negotiations on this matter could be done without prior decision and guidance by the Assembly, since it implied some difficult political issues. One Delegate, in particular, emphasized very strongly that no decision in this regard should impinge upon the integrity of UNESCO and the efforts it was undertaking to reform itself.

405 The Delegate of the United Kingdom emphasized the importance of a flexible approach to marine developments within the UN system in response to UNCED, in order to ensure that IOC makes its most effective contribution to these developments. Stronger links with the WMO were encouraged, but stronger links with other UN organizations including the IMO, FAO and UNEP would also be necessary.

9.3 CO-OPERATION WITH THE UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

406 In introducing this Agenda Item, Dr. Chidi Ibe, IOC Senior Assistant Secretary, stated that co-operation between IOC and UNEP is wide-ranging, and recalled that the elements of this co-operation had been covered in presentations and discussions under several Agenda Items, including GIPME, OSLR, GOOS and GCOS, UNCED, ICSPRO, as well as under Regional activities. He referred the Assembly to Document IOC-XVII/6 for details of this co-operation.

407 Dr. Ibe drew the attention of the Assembly to paragraph 211 of the Action Paper, and reiterated the need for greater communication and cross-sectoral interaction in Member States to reflect on-going co-operation at the international level. He said that there were at least 11 Memoranda of Understanding (MOUs) between IOC and UNEP, spanning programme development, capacity building, human resources and provision of infrastructure, and that indications are that more are underway. He stressed that the MOUs have financial and human resources implications for IOC, and that there was a need to ensure that resources are available for timely implementation of the MOUs by the IOC Secretariat. This would promote even closer collaboration.

408 The Representative of UNEP, Dr. Makram Gerges, expressed satisfaction with the high level of co-operation between IOC and UNEP.

409 As far as GOOS was concerned, he stated that UNEP's support to the System, as clearly indicated in the 1992 letter of the Executive Director of UNEP to the Director-General of UNESCO, had remained unchanged. He then went on to make specific reference to UNEP's continuing input to the development of the Health of the Ocean and Coastal Zone Modules of GOOS. He announced that further steps had been taken to initiate the implementation of the pilot activity on coral reefs, and that UNEP would provide financial support to the initiation of the sixth pilot activity on the assessment of organic carbon accumulation in coastal sediments. He said that UNEP looked forward to receiving the relevant Memorandum of Understanding on GOOS, and assured the Assembly that it would be the subject of serious consideration by UNEP's management as well as by the Governing Council of UNEP.

410 With respect to GIPME, Dr. Gerges pointed out that UNEP would strive to achieve the objectives of the Programme for the benefit of Member States and the mutual interests of IOC and UNEP. He referred to the reported co-sponsorship of the GIPME Programme by IMO and reiterated the need for an intersecretariat consultation to work out the exact modalities and responsibilities of the concerned parties under this arrangement.

411 The UNEP Representative stated his Organization's belief that an expanded ICSPRO with a revised mandate would afford an effective high-level co-ordinating mechanism. This would facilitate integration of relevant sectoral activities addressing environment and development issues related to marine and coastal areas as required by UNCED, and, in particular, Agenda 21 and its Chapter 17.

412 Finally, Dr. Gerges stated that UNCED and Agenda 21 provide UNEP and IOC with a golden opportunity to further strengthen the long-standing co-operation between the two organizations in all the aforementioned areas, and also with respect to the IOC Programme on Training, Education and Mutual Assistance (TEMA).

413 The Assembly welcomed with great satisfaction the level of existing co-operation between IOC and UNEP, and instructed the Secretary IOC to ensure that such co-operation is strengthened and expanded.

414 The Delegate of Brazil remarked that although much co-ordination had been improved, a lot more needed to be done in terms of those IOC and UNEP programmes being implemented independently, and where overlaps still exist.

415 The Assembly further instructed the Secretary IOC to ensure, as far as possible, that adequate resources were allocated for the timely implementation by IOC of existing and future Memoranda of Understanding between IOC and UNEP.

9.4 CO-OPERATION WITH ICSU AND SCOR

416 The Secretary IOC recalled that co-operation with ICSU is expanding, as evidenced in several agenda items, through the recently signed Memoranda of Understanding (MOU) on co-sponsorship of the WCRP (with WMO, ICSU and IOC) and as regards the joint development of the GCOS (with WMO, IOC, ICSU and UNEP). He also reminded the Assembly of the on-going preparations of an MOU on the joint development of GOOS, presently involving IOC, ICSU and WMO.

417 The Representative of SCOR provided information on the extensive co-operation between IOC and SCOR, and on the advice SCOR is providing to the IOC, as evidenced in several agenda items. She stated in particular that the previous two years had seen a significant change in the nature of the interaction between SCOR and IOC.

418 During the past decade, the co-operation between SCOR and IOC had focused on the joint Committee on Climatic Changes and the Ocean. SCOR and IOC have agreed to continue their joint support of two important former CCCO activities, especially the CO₂ Advisory Panel.

419 With regard to SCOR's major programmes, the Joint Global Ocean Flux Study, the Representative of SCOR expressed appreciation to the Commission, and in particular to the Chairman of GIPME, Dr. Neil Andersen, for their assistance in the organization of several training courses. SCOR also owes a debt of gratitude to the IOC for its offer to publish and distribute a manual on the approved international protocols for the 20 JGOFS Core Measurements.

420 Since the last Assembly, a great deal of progress has also been made in the development of the new Joint SCOR-IOC Programme on Global Ocean Ecosystem Dynamics or GLOBEC.

421 In addition to these large-scale programmes, SCOR has established seven or eight new Working Groups during the last two years, most of them covering on topics of interest to the IOC.

422 Working Group 94 is working on the comparability of satellite altimeter data and *in situ* current observations, looking at the data from the new ERS-1 satellite.

423 Working Group 96 on acoustic monitoring of the world ocean was established, in part, to complement the IOC activity in the overall field of marine acoustics.

424 Working Group 97 is formally co-sponsored by the IOC and will provide specialized input to the IOC Harmful Algal Bloom Programme on the narrow, yet important, topic of the physiological ecology of these blooms.

425 SCOR is looking forward to playing a strong role in working with the IOC to involve the international scientific community in the design and planning of GOOS.

426 The Representative of SCOR concluded by inviting IOC to continue to take advantage of SCOR as its principal Scientific Advisory Body.

427 The Assembly welcomed the interaction between SCOR and IOC, and emphasized that independent scientific advice is most important. Duplication of efforts must be avoided and co-ordination improved so as to ensure as complete a coverage as possible of major issues. The need for wide geographical coverage in advisory missions was also emphasized.

428 The Assembly stressed that co-operation should also be in the form of a dialogue, and be geared to mutual benefit.

429 The Assembly emphasized the importance of improving co-operation with ICSU and also requested that efforts be made to extend such co-operation to include other bodies in the ICSU family, e.g., SCAR, CODATA.

430 The Assembly also suggested that the Secretary IOC make appropriate arrangements for an evaluation of the overall importance and relevance of the advice provided by the scientific advisory bodies, including ECOR, SCOR, ACMRR, to the work and development of the Commission.

431 The Assembly concluded with a note of appreciation to its scientific advisory body, SCOR, for the very considerable input it provides to the work of the IOC and its programme development.

9.5 CO-OPERATION WITH OTHER BODIES INCLUDING CPPS, ICES, ECOR

432 The Secretary IOC informed the Assembly of the Commission's co-operation with the Indian Ocean Marine Affairs Co-operation (IOMAC).

433 IOC co-sponsored the International Scientific Workshop on Marine Scientific Co-operation in the Indian Ocean (Colombo, Sri Lanka, 18-25 October 1992) and an IOMAC Representative participated in IOCINCWIO-III (Vacoas, Mauritius, 14-18 December 1992). In view of desired co-operation of IOMAC with IOC and its programme activities in the Indian Ocean under IOCINDIO and IOCINWIO, a possible Memorandum of Understanding on co-operation between IOC and IOMAC is presently under preparation.

434 The Assembly also noted the overview on activities of the International Arctic Science Committee (IASC) provided by the IOC Secretary in Document IOC/INF-926.

435 The importance of creating an appropriate liaison between IOC and IASC in view of the new programme "Arctic Climate System Study (ACSYS)" within the ICSU-WMO-IOC World Climate Research Programme (WCRP) was mentioned.

436 The Representative from the North Pacific Marine Science Organization (PICES), Prof. W. Wooster, informed the Assembly of the establishment of PICES. The Convention came into force on 24 March 1992 with Canada, China, Japan and USA as the contracting parties. The Organization is concerned with marine scientific research in the North Pacific Ocean and adjacent seas, especially North of 30°N. It meets annually, and the First Annual Meeting, held from 12-17 October 1992, was attended by IOC in its observer capacity. PICES works with a science board, four scientific committees, and a number of working groups.

437 The Representative of the International Council for the Exploration of the Sea (ICES) informed the Assembly of several on-going ICES-IOC co-operative projects. These activities are specified and referred to under the relevant agenda items, in particular agenda items 5.1, 5.5 and 6.2. He also informed the Assembly of the dissolution of the Advisory Committee on Marine Pollution and the establishment of a new Advisory Committee on the Marine Environment, aimed at enhancing the interdisciplinary role of ICES. He informed the Assembly of forthcoming ICES meetings, in particular, the 81st Statutory Meeting in Dublin, Ireland, September 1993. ICES is interested in co-operating actively with IOC on programmes of mutual interest to the Organizations and their Member States.

438 The Representative of the Inter-Islamic Network on Oceanography (INOC), in referring to the planning of a cruise to the ROPME Sea Area (covered in paragraph 131 under item 5.5), and to workshops and symposia on marine pollution research and monitoring studies organized with several Maghreb countries and in consultation with the IOC Secretariat, expressed INOC's willingness to further develop its co-operation with the IOC.

439 He furthermore informed the Assembly of the objectives, status and activities of INOC, established in 1987, as an independent self-governing institution under the umbrella of the Organization of the Islamic Conference Standing Committee on Scientific and Technological Co-operation. The main objective of

INOC is to increase co-operation and concerted action among interested institutions and scientists in carrying out agreed oceanographic projects on problems of common interest.

440 The Assembly took note of the information provided by the Honorary Secretary ECOR, Mr. H. Hill, on the activities of the ECOR ocean engineering training programme in providing developing country engineers and technicians with on-the-job training in the operation and maintenance of oceanographic and ocean engineering equipment.

441 The Assembly also took note of the ECOR Review of Technologies and Applications for Autonomous Underwater Vehicles, prepared by the ECOR Working Group on Marine Robotics, and related to GOOS supporting development initiatives.

442 The Secretary IOC informed the Assembly of the on-going co-operation with CPPS, including regional programme components of OSLR (SARP), OSNLR (COMEMIR), El Nino studies, and of that with WMO, and marine pollution research and monitoring (GIPME-MARPOLMON), within the context of the UNEP Regional Seas Programme.

443 The Assembly took note of the information provided by the Secretary IOC on negotiations with the International Ocean Institute on a Memorandum of Understanding between that Institute and IOC, in particular with respect to TEMA-related activities. The main aim of the MOU would be to take maximum advantage of the complementarity of the two bodies in order to optimize the use of the limited resources available, to mobilize new resources, and to ensure improved co-ordination.

444 The Secretary IOC informed the Assembly that several other bodies are seeking co-operation with or recognition by the IOC. He mentioned PACON International working in particular in the Pacific region, and the Cyprus Marine Environment Protection Association (CYMEPA) which focuses on the Mediterranean.

445 The IOC had organized a scientific workshop on coastal area management in conjunction with the PACON International Conference in July 1992. The report will be published in the IOC Workshop Report Series.

446 The Assembly took note of the information.

10. FOLLOW-UP OF THE 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT: IOC STRATEGY AND ACTION PLAN

447 The Secretary IOC introduced this item referring to Document IOC-XVII/8 and its Annex 1. Among major priority issues in the context of UNCED follow-up, the following can be cited: a harmonized, system-wide approach to the follow-up, including the Conventions and Agenda 21; strengthening international co-operation and co-ordination, including re-direction of resources; establishing and agreeing on criteria for sharing of work, responsibilities and resources entailed in implementation. These matters all touch upon the IOC, and are also mirrored in the DOSS report.

448 Recent developments in global affairs, notably the United Nations Conference on Environment and Development (UNCED) and the adoption of the Conventions and Agenda 21 as a framework for action and guidance for Governments, clearly demonstrate that the ocean, coastal zones and their resources are coming to the forefront of the international agenda. New challenges and opportunities are confronting the world community and, in particular, the organizations part of the UN system. These and other factors will inevitably lead to an evaluation and updating of institutional arrangements in areas of responsibility which fall within the mandate of the IOC.

449 The Assembly noted with appreciation the substantial and successful efforts of the Secretary in co-ordinating the IOC contribution to UNCED. The Assembly highlighted the follow-up to UNCED as

a high priority activity for the Commission. Member States assign special importance to the results of UNCED and the need for rapid implementation of its recommendations.

450 **The Assembly agreed** to address this topic under three headings: Agenda 21, the Framework Convention on Climate Change and the Convention on Biological Diversity. The Secretary introduced Document IOC-XVII/8 Annex 1, Draft Action Plan for IOC Follow-Up to UNCED and Implementation of Agenda 21: Overall Strategy and Goals. This document was prepared by the Secretary based upon a sequence of deliberations before, during and after UNCED. It attempts to identify overall conclusions of UNCED of special concern to the IOC and acknowledges the need for research, services and capacity building in reference to the oceans. Eight "Specific Issues", based on all the themes in Chapter 17 of Agenda 21, and of particular relevance to IOC, are described.

451 The Secretary proposed that this document be used as a vehicle for leveraging funding from national and international donor organizations.

452 Several delegations expressed the need for guiding principles to be used by regional and technical subsidiary bodies in response to UNCED.

453 Several delegations stated that, despite the high quality of the document, a certain number of conclusions and recommendations of UNCED directly related to the mandate and activities of IOC, either in Chapter 17, or in particular, in Chapters 34, 35, 36, 37 and 38 of Agenda 21, had not been properly covered. In response, the Secretary IOC noted that the Document was intended to concentrate on areas clearly within the purview of IOC and did, in fact, deal with all the elements of Chapter 17 in the context of the IOC mandate.

454 Several delegations proposed that the seven programme areas of Chapter 17 of Agenda 21 should be specifically mentioned.

455 **The Assembly noted** with satisfaction the support provided by the Secretary IOC to regional subsidiary bodies for the application of recommendations and decisions of UNCED.

456 An *ad hoc* Sessional Working Group on UNCED Follow-Up was established to prepare a response from the Assembly based on Document IOC-XVII/8 Annex 1.

10.1 AGENDA 21

457 **The Assembly noted** the draft Action Plan as a relatively comprehensive, yet succinct compilation of issues and actions within IOC's area of competence to respond to the main needs identified by UNCED, in particular Chapter 17 of Agenda 21.

458 While noting that many activities are already underway which directly address Agenda 21, the Assembly agreed that consideration should be given to the promotion of a few select "Flagship" activities, e.g., GOOS, relevant science programmes, capacity building, cross-United Nations agency co-ordination (through, *inter alia*, ICSPRO) and public awareness.

459 The Delegate of the Republic of Korea proposed that the question of transfer of environmental technologies be given due consideration in implementing Agenda 21.

460 **The Assembly also stressed** the importance of strengthening partnerships with other intergovernmental and international organizations such as WMO, UNEP and ICSU. The Assembly recognized that IOC has an important role to play in promoting partnerships between developing countries and industrialized countries in the field of marine scientific research and related issues. The Assembly noted the examples of long-term co-operation between Kenya and the Netherlands and the IOC-SAREC programme in East Africa.

461 The Assembly welcomed the offer of the Government of Portugal to host an international oceanographic conference in Lisbon in 1994 which would focus on issues specified in Resolution XVII-16, which was adopted. The Assembly also welcomed the offer by the Delegate of Portugal to host an international exhibition in 1998 entitled "Oceans: Heritage for the Future". The Delegate of Portugal proposed that consideration be given to designating the year 1998 as the United Nations' Year of the Ocean; a cautionary note was sounded by one country with regard to a previous experience at national level when such a promotional method was not successful, and resources might not permit such a major undertaking. Various delegations expressed support to the proposal. Resolution XVII-17 was adopted.

462 Prior to discussion by the Assembly of Resolution XVII-17 (1998 - the International Year of the Ocean), the Delegate of the USA informed the Assembly that his country would request that the matter to be brought to a vote, in which case the Delegation of the USA should be identified as having voted negatively. He then explained that in the view of the USA, the designation of years or decades, such as the International Year of the Ocean, was a drain on the resources of the concerned UN organizations, and particularly IOC, and that therefore the United States objected to and dissociated itself from the proposal.

10.2 FRAMEWORK CONVENTION ON CLIMATE CHANGE

463 Dr. K. Voigt, Deputy Secretary IOC, referred to the Action Paper (Document IOC-XVII/8, paras. 250-254), Document IOC-XVII/8 Annex 1 (Item 5.1) and the Appendix to the Annex, which address IOC activities regarding the FCCC. He reported that 14 countries had ratified the Convention (50 ratifications are necessary for it to enter into force). The process of ratification would possibly speed up in 1993, following adoption by the UN General Assembly, at its 47th Session, of Resolution 47/195 "Protection of global climate for present and future generations of mankind". This Resolution urges states to contribute to and support, at the international, regional, and sub-regional and national levels, basic scientific and technical needs specified in the Convention, including those activities carried out under the World Climate Programme and the Global Climate Observing System. It invites UNEP, WMO and other United Nations bodies with relevant expertise, to continue to co-operate closely with, and to contribute staff to assist the Interim Secretariat in Geneva.

464 The interim secretariat plans to organize the First Session of the Conference of the Parties of the Convention in 1994/1995. The UN General Assembly welcomed the invitation by the government of Germany to host this First Session. The IOC had been invited to two sessions of INC/FCCC to be held during 1993, one at the United Nations, in New York from 15-20 March; the other in Geneva from 16-27 August 1993.

465 Preparations have been initiated to hold an interagency consultation in Geneva during June 1993 to deal with the scientific aspects, taking into account the IGM/WCP in April 1993.

466 Following Resolution EC-XXV.8 "IOC Participation in UNCED", and as an acknowledgement of its contribution to the work of the Conference, the IOC was invited to assist with the preparation of the First Session of the Conference of the Parties. In this respect, Dr. Voigt expressed the satisfaction of the Secretariat of IOC at the fact that several Member States had included ocean science experts or officers of the IOC in their national delegations. He expressed the hope that this would continue and urged IOC Member States to inform their national delegations to the preparatory process of the FCCC of the Commission's willingness and capability to contribute to this endeavour.

467 The Assembly agreed that the IOC had an important role to play in the preparations of the Framework Convention on Climate Change, as well as in the implementation itself, and that Annex 1 of the Action Paper represented a good first step in identifying opportunities for IOC to contribute to this Convention, under Articles 5 and 6.

468 The Delegate of Indonesia expressed concern that only a few countries have ratified the Convention, and requested that the Delegates of all Member States urge their respective governments to take action in this respect.

469 The Delegate of the Russian Federation pointed out that the Negotiating Committee, scheduled to meet in New York ten days later, would address implementing mechanisms, including those of a financial nature. He suggested that the IOC should decide, at the on-going Session of the Assembly, what it wished to propose in relation to the Rules of Procedure of the FCCC. He also noted that a proposal for a Scientific and Technical Commission for the FCCC would be entertained at the New York session, and felt that IOC should also develop a position on this matter. He also emphasized the importance of establishing, in due course, effective working links between the IOC and the relevant bodies for the Framework Convention on Climate Change. This is particularly important in helping to provide the latest information, assessments and predictions on sea-level change and CO₂ absorption and emission by the ocean.

470 The Assembly decided to re-emphasize to the Negotiating Committee the willingness of the IOC to contribute to the implementation of the FCCC, to serve as an advisory body to the Negotiating Committee, on matters related to the role of the oceans in the climate system and, with respect to the impacts of climate change, to provide expert inputs and reports on development of scientific understanding and systematic ocean observations and monitoring, with related interpretations.

10.3 CONVENTION ON BIO-DIVERSITY

471 The Convention on Bio-Diversity is a treaty negotiated through the UNCED. This Convention is intended to: (i) provide assessments of the status of biological diversity; (ii) advise international scientific programmes on the role biological diversity plays in sustainable use and conservation of living resources; and (iii) provide answers to scientific and technical questions that may arise.

472 The draft Action Plan (Document IOC-XVII/8 Annex 1) was considered by the Assembly, with particular reference to Biological Diversity of marine species. The recommended goal of the Action Plan is to maintain the integrity and biological diversity of coastal and marine ecosystems. Thus, the IOC highlighted the importance of maintaining ecosystems diversity in the marine environment.

473 Dr. K. Voigt, Deputy Secretary IOC, informed the Assembly of recent developments concerning the Convention on Bio-Diversity. He referred to the emphasis on GOOS, which will be relevant for implementation of the Convention, including through the Health of the Oceans and Marine Living Resources modules of GOOS. He noted that the UN General Assembly had not, at its recent 47th Session, included the Convention on Bio-Diversity in a separate resolution. However, UNEP was going ahead with the preparation for a first meeting of the States signatories of the Convention, to be held in September 1993, the place to be decided at the forthcoming Session of the UNEP Governing Council in May 1993 in Nairobi. Five Expert Panels have been set up to prepare the working documents for the September 1993 meeting of the signatories. The Government of Norway and UNEP, have also agreed to organize an "Expert Conference on Bio-Diversity" in Trondheim, Norway, 24 to 28 May 1993, which may recommend "Priorities for Action for Conservation and Sustainable Use of Biological Diversity" and an "Agenda for Scientific and Technological Research". At the end of February 1993, nine States had already ratified the Convention and more ratifications are expected during 1993.

474 The Assembly decided that IOC would seek active participation in the preparation for the first meeting of the Convention signatories. As is the case with other UNCED issues, the Secretariat had found it desirable that IOC Member States fully inform their Delegations involved in the preparatory process of the Bio-Diversity Convention of the capabilities of the Commission in marine and coastal bio-diversity, and of the willingness of the IOC to provide input to the attainment of the goals of the Convention.

475 The Assembly noted that Agenda 21 is very comprehensive. It emphasized that the activities of the Commission should focus on issues within the mandate of IOC, bio-diversity being one of them.

476 The Assembly noted that the Bio-Diversity Convention is considered to be particularly relevant to tropical and sub-tropical regions. This makes it appropriate for the IOC Regional Subsidiary Bodies, which focus on developing countries to participate in the work of the Convention.

477 The Assembly decided that a detailed plan for action with respect to the Convention should be developed during the intersessional period.

478 The Assembly emphasized that the GOOS is an appropriate mechanism for supporting the implementation of the Bio-Diversity Convention in a longer term perspective. The modules for marine living resources, the health of the ocean and the coastal zones are particularly relevant.

10.4 RESPONSE OF THE IOC TO RELATED STRUCTURAL MATTERS AND UNCLOS

479 The Assembly agreed that existing mechanisms, including IOC regional bodies, should be used to the maximum extent possible. Recent sessions of regional bodies have identified relevant work, which now needs to be carried out.

480 The Assembly agreed that the draft Action Plan needs to be further elaborated, that priorities should be established and divided into short-term, medium-term and long-term. Alternative mechanisms for this were suggested, including an intersessional working group to address the IOC follow-up to UNCED.

481 It was noted that the DOSS report had advised that a group of experts could be appointed by the Assembly to undertake for the next Medium-Term Plan an in-depth review of the implications of UNCED and Agenda 21 for the IOC, and possibly updating the previous study on the implications of UNCLOS for the IOC.

482 The Assembly decided that existing mechanisms should initially be used to prepare proposals for medium- to long-term actions which should be part of an IOC Action Plan and of the next UNESCO Medium-Term Plan. These mechanisms are primarily associated with subsidiary bodies and Officers of the relevant bodies, especially the regional ones, should represent a network to prepare a proposal to be submitted to the Twenty-seventh Session of the Executive Council. The Assembly also agreed that the ICSPRO mechanism should be used to help ensure that the IOC, as a joint specialized mechanism, is addressing problem areas of mutual interest to UN Organizations partners of the Agreement.

483 The Assembly emphasized the need to use the competence of the regional bodies in soliciting funding from national, regional and global donor institutions including, but not limited to, the Global Environment Facility (GEF). The Secretary noted that efforts are underway to develop GEF proposals for the WESTPAC region and that GEF proposals must be submitted by nations or regions, not by the IOC Secretariat.

484 The Assembly emphasized that maximum use should be made of the entire IOC/MRI Programme of UNESCO to ensure a collectively effective response to UNCED.

485 The Assembly adopted Resolution XVII-18.

11. PROGRAMME AND BUDGET

486 The First-Vice Chairman, Dr. John Knauss, introduced the whole of this Agenda Item by recalling major policy conclusions of IOC Governing Bodies regarding the need to balance programme requirements and available resources and the dual responsibility of UNESCO and IOC Member States in this regard. He also drew attention to advice offered by the *ad hoc* Study Group on DOSS (Agenda Item 12) within the framework of the IOC Strategy for the Future and development of a comprehensive IOC Action Plan, including those elements that are responsive to UNCED. Recalling that the financial instability of the IOC is a long-standing problem, he referred delegates to the suggestions by DOSS made as to how the IOC could move towards a situation where its resources are dependable and where programmes could thus be planned and implemented in a more coherent and consistent manner. The statement of the First Vice-Chairman is found in Annex VI-A.

11.1 PROGRAMME AND BUDGET FOR 1993

487 The IOC Senior Assistant Secretary, Ms. Natalie Philippon-Tulloch, introduced this agenda item by referring to Document IOC-XVII/7 Part I and the relevant sections of the Action Paper. In providing a brief overview of IOC revenue and expenditure, she emphasized the impact of fluctuating resources on programme implementation. Recent statements from the Director-General that US\$ 400,000 of budgetary adjustments (in addition to the US\$ 288,000 restituted in 1992) would be returned to the IOC are indeed demonstrative of the priority accorded by UNESCO to the work of the Commission.

488 In discussing matters related to the programme and budget for 1993, many delegations congratulated the Secretariat on the reports provided and also offered suggestions for further improvement. It was emphasized that Member States need to have a clear understanding of developments in programme implementation, including their financial aspects, if they are to assume their responsibilities to mobilize additional resources and provide appropriate guidance.

489 The Assembly instructed the Secretary to ensure that future financial reports take into account the following:

- (i) inclusion of staff resources in addition to those on programme implementation;
- (ii) indication of IOC Trust Fund contributions that distinguish between general support for programme implementation as a whole and those given for specific purposes; and
- (iii) more detailed information on TEMA and regional components.

490 In support of a proposal made by the First Vice-Chairman, the Assembly decided that programme and budget matters should be tabled earlier during sessions of the Executive Council and Assembly. It was also suggested that during each Assembly there should be an *ad hoc* sessional group on the programme and budget, working in concert with the Technical Review Committee on Draft Resolutions.

491 The Assembly authorized the Secretary to continue progressive implementation of the programme, in accordance with available funding and in consultation with the Officers.

11.2 DRAFT PROGRAMME AND BUDGET FOR 1994-1995

492 The IOC Senior Assistant Secretary, Ms. Natalie Philippon-Tulloch, introduced this Agenda Item by referring to Document IOC-XVII/8 Annex 4 and the relevant sections of the Action Paper. Explanation was provided as to the present status of the UNESCO Draft Programme and Budget (Draft 27C/5) and the instructions given by the Director General for its formulation and budgetary framework.

493 It was pointed out that the programme content and indication of distribution in funding corresponds to the wish of IOC Governing Bodies that a unified marine science programme for UNESCO be developed and implemented under the guidance of the IOC. The Secretary had also taken into account the conclusions of IOC subsidiary bodies and expert groups as well as the implications to the work of IOC of UNCED and its Agenda 21.

494 Reference was also made to the introductory statement by the Director General and his endorsement of IOC as seen in his decision to accord additional funding provisions within the Draft 27 C/5 and to include within the staff establishment two additional posts.

495 In the ensuing debate, four major areas of concern were identified:

- (i) balancing needs and resources, including those of staff;
- (ii) ensuring a truly integrated programme at global and regional level;

- (iii) providing information to Member States sufficiently in advance and in sufficient detail so that appropriate national policy could be identified;
- (iv) earlier debate of the matter during the Assembly; and
- (v) itemization of expenses in each programme.

496 Several Delegates provided examples from their regions and programmes where it was clear that the IOC Programmes and the activities on marine-science related issues were not yet being implemented in a harmonized manner with the Regional Subsidiary Bodies. The Assembly voiced its concern regarding the need to improve the effective implementation of the programme in a unified manner and the role of the Secretary IOC as Director of the Office of the IOC and marine science related issues in this respect.

497 In noting the increase in funding decentralized to regional offices, the Assembly noted that all programme implementation, whether from headquarters or through the field offices, must be undertaken within the approved plans and procedures of IOC subsidiary and regional bodies, as agreed upon by the Executive Council and Assembly.

498 In regard to suggestions made that IOC Member States could assist in the translation of manuals and other IOC documentation, eventually with some contractual support, the Assembly instructed the Secretary to pursue this matter with countries that might be willing to assist by providing special contributions to the IOC Trust Fund and/or undertaking translation.

499 The Assembly noted that the present timing of IOC Assembly and Executive Council sessions and the schedule for preparation of the Draft 27 C/5 did not permit early distribution of relevant documents to Member States. This matter was further discussed under Agenda Item 14.

500 The Assembly decided that consideration of the Draft Programme and Budget should be scheduled earlier in Assembly sessions.

501 The Representative of the Director-General, Prof. A. Badran, Assistant Director-General for Science, provided a statement on staffing and programming (Annex VI-B hereto).

502 The Assembly adopted Resolution XVII-19.

11.3 OTHER ASPECTS OF THE UNESCO ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT PROGRAMME

503 The Senior Assistant Secretary, Ms. Natalie Philippon-Tulloch, briefly presented two other aspects of programme management upon which the advice of the Assembly was solicited.

504 In accordance with instructions from the Director-General that evaluation elements be included within the Draft 27 C/5, the UNESCO Central Evaluation Unit and the Science Sector have proposed that Sub-programme II.2.4 be studied during the 1994-1995 biennium.

505 The Assembly recalled that the governing bodies of the IOC undertake continuous evaluation of IOC programmes and referred to earlier discussions on the need to improve unified programme implementation at the regional level. The Assembly instructed the Secretary to present to the Twenty-seventh Session of the Executive Council a proposal on the methodology to be followed in undertaking an evaluation of programme implementation in the Caribbean and adjacent regions, including a timetable and indication of the expertise to be used, taking into account the fact that some Member States might be able to provide expertise at no cost to the Commission.

506 In regard to formulation of the Fourth UNESCO Medium-Term Plan, 1996-2001, the Senior Assistant Secretary referred to discussions at the Twenty-fifth Session of the Executive Council and the

steps taken by the Secretary to solicit views from Member States and IOC subsidiary bodies. Reference was also made to the proposals of DOSS in this regard.

507 The Assembly instructed the Secretary to prepare a draft of the IOC contribution to the UNESCO Medium-Term Plan for presentation to the Chairman and Vice-Chairmen and drawing upon the proposals agreed to under Agenda Item 12. The Assembly decided that the Twenty-seventh Session of the Executive Council should receive a report on this matter and provide necessary guidance to the Secretary and Member States, taking into account intersessional developments and UNESCO planning.

12. ENHANCING THE ROLE OF THE COMMISSION

508 The Chairman of DOSS, Dr. Ulf Lie, introduced this agenda item by giving a brief overview of developments. He reminded participants that, at its Sixteenth Session, the IOC Assembly considered the final report of the *ad hoc* Study Group on Measures to Ensure Adequate and Dependable Resources for the Commission's Programme of Work (FURES) (Document IOC/FURES-III/3). The Assembly appreciated the considerable progress that had been achieved by FURES, but noted also that there were a number of important issues which needed further study before the Governing Bodies of the Commission would be in a position to entertain possible amendments to the IOC Constitution. The Assembly therefore, in its Resolution XVI-19 decided to establish an *ad hoc* Study Group for Development, Operations, Structure and Statutes (DOSS), with terms of reference as found in the Annex to that resolution.

509 In accordance with Resolution XVI-19, the Past Chairman of the Commission served as Chairman of DOSS, and the IOC Chairman designated five additional members of the group. Thus, the composition of DOSS includes : Chairman : Ulf Lie (Norway); Roy M. Green (Australia); John A. Knauss (USA); Guillermo Garcia Montero (Cuba); Mario Ruivo (Portugal); Alexander Yankov (Bulgaria). The Chairman of the Commission, Manuel Murillo; the Secretary IOC, Gunnar Kullenberg; and the Senior Assistant Secretary of the Commission, Natalie Philippon-Tulloch, participated in all three meetings of the *ad hoc* Study Group.

510 DOSS held its first meeting in UNESCO, Paris, 16-18 December 1991; the second meeting in UNESCO, Paris, 2 March 1992, and the third meeting in Bergen, Norway, 26 July-1 August 1992. A progress report was presented to the Twenty-fifth Session of the Executive Council which provided guidance to the Chairman of DOSS, as found in paras 284-291 of the Summary Report of the Council (Document IOC/EC-XXV/3).

511 To provide sufficient opportunity for Member States to consider the issues raised by DOSS and receive clarification on any matters of concern, a one-day open meeting was organized in conjunction with the Twenty-sixth Session of the Executive Council, followed by three periods of plenary debate, one Sessional Working Group and a Sessional Drafting Group on Resolution(s).

512 In discussing the DOSS Report *QUO VADIS IOC?*, the Assembly recalled that the IOC, according to its Statutes (Article 1.1(a)), "*is established as a body with functional autonomy within the United Nations Educational, Scientific and Cultural Organization*".

513 In considering the Summary Report of DOSS (Document IOC/DOSS-III/3) and in particular paras. 5 and 6, the Assembly acknowledged that the success of IOC and recognition of the Commission as an important agent in ocean affairs depend primarily on the active participation in programme development and implementation of national institutions for ocean science; effective development of ocean policy in individual Member States; the resourceful, devoted, and imaginative contributions of the Member States through their representatives to the IOC Governing and Subsidiary Bodies; and on the diligence and efficiency of the IOC Secretariat.

514 Furthermore, the Assembly reiterated that the Commission is an organization for and of its Member States, and the success of the programmes of IOC are primarily related to the degree of involvement of Member State institutions in programme formulation, financing and execution. For IOC

to achieve its long-term goals, it is essential that its Member States are committed to using the Commission as their primary instrument for international oceanographic co-operation and related matters.

515 During the debate in plenary, numerous Member States emphasized the importance of the studies undertaken by DOSS and their implications to the evolution of the IOC.

516 The Assembly recognized that the future development of the Commission would need to continue in a progressive manner, taking into account the special status of the IOC within UNESCO, the relationship of the IOC with other bodies of the UN System, and the wishes of the IOC Member States in regard to their use of the Commission as an intergovernmental mechanism.

517 The Assembly considered each of the proposals made by DOSS within the context of the following major subject areas: recognition of the IOC; development and implementation of IOC programmes; financial support; organization and structure; and the IOC Constitution.

518 In regard to measures concerning the Recognition of IOC, five proposals were made by DOSS and agreed to by the Assembly, as found in the Annex to the Resolution XVII-20.

519 The Assembly drew attention to the following considerations that had been the basis upon which DOSS had made its proposals (Document IOC/DOSS-III/3, para. 24): it is clear *"that the IOC and its programmes are recognized by the international community, but there is a need to strengthen the involvement of national institutions in the operational aspects of the Commission's programmes and to continue to build formal relationships with other organizations"*.

520 Having been recognized as a "competent international organization" within the UN Convention on the Law of the Sea (Annex II: Article 3(2) thereof) and having been given specific responsibilities by UNCED, the IOC should now undertake further action to ensure appropriate recognition of its functions and mandate.

521 In reference to previous decisions that have reinforced IOC's functional autonomy within UNESCO, clarification was made that the up-grading of the post of Secretary IOC to the ADG level is a long-standing suggestion that is intended to reinforce the status of the Commission and its interface and negotiating role, not only within UNESCO but also with other bodies of the UN System. It was pointed out that the upgrading of the established post would have minor financial implications and would enhance co-ordination of inter-sectoral activities within UNESCO that are relevant to the work of the IOC.

522 In regard to Development and Implementation of IOC Programmes, four proposals made by DOSS were agreed to by the Assembly, as found in the Annex to Resolution XVII-20. One proposal concerning UNCED was dealt with under Agenda Item 10, notably concerning the need for an analysis of UNCED implications to the work of IOC and development of an Action Plan, which would form part of the comprehensive Action Plan proposed by DOSS.

523 The Assembly drew attention to the following considerations that had been the basis upon which DOSS had made its proposals (Document IOC/DOSS-III/3, paras 36-37): at its Sixteenth Session, the IOC Assembly approved the goals of the Commission as set forth in the document, "The Intergovernmental Oceanographic Commission: a Strategy for the Future" (Document SC/MD/97, Annex VII). To achieve these goals and meet the problems of today and the challenges of the future, IOC should adapt its structure and increase its resources, but must also develop a comprehensive Action Plan based upon establishment and review of priorities.

524 The process by which such an Action Plan is prepared by the Secretary and the Officers of the Commission will involve analysis of the forecasts of programme implementation and resource requirements provided by all subsidiary bodies; periodic review of the mandates and achievement of those subsidiary bodies; and the ongoing review of UNCED Agenda 21 and IOC's role therein.

- 525 In regard to Financial Support for the IOC, six proposals were agreed to by the Assembly as found in the Annex to Resolution XVII-20. The fourth, concerning an IOC Pledging System, will require further study.
- 526 The Assembly drew attention to the following considerations that had been the basis upon which DOSS made its proposals (Document IOC/DOSS-III/3 para 51): the trend towards increasing responsibilities by the Commission is paradoxically undermined by chronic shortfalls and uncertainties in funding. This is a source of continual flux in planning and has a negative impact on effective and timely implementation of the approved Programmes. This situation is a continuous source of frustration to all those involved in the Commission's affairs. The shortage of funds and staff for programme implementation creates risk of a serious institutional crisis with heavy and unforeseeable implications to international co-operative ventures, including those involving other organizations of the UN system, and the search for effective remedies cannot be further postponed.
- 527 Within the previous recognition that has been given to the dual responsibilities of UNESCO and IOC Member States in providing required support to the Commission, the accepted proposals aim at achieving more dependable resources by: (i) seeking a subvention or grant-in-aid status with UNESCO of at least 3% of the total budget of the organization; and (ii) providing to Member States in advance of each Assembly indication of programme requirements and gaps in funding so as to facilitate the efforts of Member States to mobilize additional support.
- 528 In regard to the Organization and Structure of the IOC, five proposals were accepted by the Assembly as found in the Annex to Resolution XVII-20. In view of recent internal directives from the Director-General, the question of the IOC meeting cycle was discussed under Agenda Item 14. Proposals concerning geographical distribution in the Executive Council will require further study.
- 529 The Assembly drew attention to the following considerations that had been the basis upon which DOSS made its proposals (Document IOC/DOSS-III/3, paras 88, 91 and 94): recognizing that the four Vice-Chairmen are distinguished individuals commanding a high level of experience and expertise, DOSS suggested that their roles should be specified to ensure that advantage be taken of their attributes.
- 530 As pointed out by FURES, the IOC Secretariat should ideally be composed of a core staff of international civil servants provided by UNESCO and supplemented by staff seconded by Member States and co-operating international organizations at no cost to the Commission.
- 531 There is a need to examine critically the plethora of subsidiary bodies with a view to rationalizing the schedule of meetings and reporting functions, and by considering appropriate criteria which can be applied to determine whether bodies should be created, and subsequently whether they should continue.
- 532 Having assessed in great detail each of the DOSS proposals, the Assembly decided that five of these proposals required further study and consultation at the national level in order for Member States to assess their policy implications. These included suggestions for changes to the structure and content of the IOC Rules of Procedure and Statutes, as well as proposals relating to the feasibility of an IOC Pledging System, to geographical distribution in the Executive Council and implications of a possible treaty organization as described in paras 62 and 184 of the DOSS Report.
- 533 The Assembly acknowledged that matters concerning constitutional texts and the Pledging System should be viewed within a perspective of reinforcing the legal and financial base of the Commission. Referring to para 62 of Document IOC/DOSS-III/3, the Assembly took note that the effort required to revise the Statutes and the parallel effort to prepare an acceptable draft for a Convention establishing a pledging system for IOC might have to be merged.

534 The Assembly recognized that certain proposals agreed to by the Assembly would result in changes to the Rules of Procedure. In the interest of addressing such changes in a comprehensive manner, the Assembly agreed that the decisions reflected in the Annex to the Resolution XVII-20 should be acted upon and that implications to adjustment in the Rules of Procedure should be presented to the Twenty-seventh Session of the Executive Council. The Assembly instructed the Secretary to prepare a document on revision of the Rules of Procedure which would take into account decisions made at the present Assembly as well as the view of Member States in regard to the five pending proposals.

535 The Assembly adopted Resolution XVII-20.

536 In conjunction with the adoption of the Draft Resolution, the Assembly reiterated several aspects previously referred to in the debate, in particular as regards the status of the Commission. Several Delegations emphasized that the IOC is a body within UNESCO with functional autonomy. In adopting the Resolution, some sections of it were incorporated in the main body of the report, for instance that on upgrading of the post of Secretary IOC to the ADG level, which could also lead to a reporting function for IOC to the UNESCO Executive Board and General Conference. The Assembly considered that all proposed internal measures of concern to UNESCO could be handled at the discretion of the Director-General.

537 Reference was also made to several specific paragraphs in the DOSS report covering various items of relevance to the Resolution. The DOSS Report is thus retained as a reference document for further deliberations intersessionally, as agreed in the Resolution in regard to the proposals which require further study.

13. ELECTIONS

538 The Assembly noted the report of the Chairman of the Nominations Committee, Prof. C. Druet, informing the Assembly that all nominations received for election had been found valid. In addition, the Nominations Committee had noted a typographic error in the Russian version of Document IOC/INF-620 rev. 3 - Technical Arrangements for the Elections of Officers of the Commission and other Members of the Executive Council.

13.1 ELECTION OF THE OFFICERS OF THE COMMISSION

539 The Assembly noted that there was only one candidate for the posts of Chairman and First, Second, Third and Fourth Vice-Chairmen. The five candidates were elected by acclamation. The newly elected officers of the Commission are:

Chairman	Dr. M.M. Murillo (Costa Rica)
1 st Vice-Chairman	Mr. G.L. Holland (Canada)
2 nd Vice-Chairman	Dr. A.P. Metelnikov (Russian Federation)
3 rd Vice-Chairman	Prof. Dr. H.K.A. Badawi (Egypt)
4 th Vice-Chairman	Prof. Su Jilan (China)

13.2 ELECTION OF THE MEMBERS OF THE EXECUTIVE COUNCIL

540 The Assembly noted that 32 candidatures were found to be in order, to fill 30 seats on the Executive Council. A vote was therefore organized to elect the Members of the Executive Council in accordance with Rule of Procedure 47.

541 The Member States sitting on the Executive Council as a result of the elections, as well as the list of Member States of the Commission, are given in Annex IV of the Summary Report.

14. DATES AND PLACES OF THE EIGHTEENTH SESSION OF THE ASSEMBLY AND THE TWENTY-SEVENTH (INCLUDING PROPOSAL ON AGENDA ITEMS) AND THE TWENTY-EIGHTH SESSIONS OF THE EXECUTIVE COUNCIL

542 The Secretary IOC introduced this item, referring to the discussion at the 'Twenty-sixth Session of the Executive Council and the agreement of the Executive Council to defer the decision regarding the dates of the Assembly in view of the proposal of the Secretary IOC that the time of the Session for both the Assembly and the Executive Council be later in the year than is presently the case.

543 In the case of the Assembly, it was proposed that a shift be made in the schedule so that the Assembly can have a stronger influence on the final version of the programme and budget (C/5) for the subsequent biennium. The preparation of the draft C/5 takes place in the period December-March-April and the proposal is analyzed by the spring Session of the Executive Board of UNESCO in May-June. The Assembly would probably have a stronger influence on the final version of the biennial programme if it were to comment on the proposal once the Executive Board of UNESCO had reviewed it, through an appropriate Draft Resolution directly addressed to the General Conference of UNESCO. This would imply that the Assembly would meet in the June-July period. Such a shift would also mean that the Assembly would receive the proposed draft Programme and Budget in good time before its meeting. This was not possible in the present instance since the proposal was being prepared in UNESCO and would not be ready until the end of March. It was consequently proposed that IOC-XVIII meet in the period 20 June-5 July 1995, as an alternative to the period 13-25 March 1995 which is also available.

544 It was suggested that the mid-term Executive Council be moved to a later date in the year than is presently the case, so as to make it possible for the Executive Council to review programme implementation matters when the biannual programme has been underway for at least eight to ten months. This implies that the Executive Council should meet in the period September-October. The dates in October would also imply that the Executive Council will be in a better position to evaluate the financial conditions for the biennium than it is with the early meeting period. For 1994, the availability of meeting facilities in UNESCO, and the schedule of the Executive Board of UNESCO, provide a proposed possible EC-XXVII meeting period of 20-30 October 1994, as an alternative to the period 28 February-9 March 1994, which is also available.

545 Several Delegations expressed their views on the proposal.

546 The Delegate of Portugal emphasized that we are at a cross-roads, that there are trends apparently moving towards a 3-year periodicity for the UNESCO General Conference. In such circumstances, it might not be wise to make an adjustment now for the IOC Executive Council which would affect the dates for the Assembly. The Delegate stressed that he would support any shift or action which would give the Assembly and the Executive Council greater possibilities than at present to influence the programme and budget of UNESCO and the Medium-Term Plan than is presently the case.

547 The Delegate of Canada pointed out that it was certain that UNESCO would not decrease the time between General Conferences, and hence moving the IOC Executive Council to October 1994 would seem desirable. He also noted that the statutes of the IOC rule that the IOC Assembly meet every second year. Hence he would support the proposals made by the Secretary.

548 The Delegate of the USA expressed the fullest confidence in the judgment of the Secretary in this case, and hence supported the proposals made by the Secretary to move the meetings to the later dates in the afore-mentioned years, June-July and October, respectively. Several delegations concurred with this view.

549 The Delegate of Cuba raised questions regarding the most proper interfacing with UNESCO meetings in the light of the sequential preparation of the programme and budget. In clarification of this point, the Delegate of the Philippines stated that the General Conference has the ultimate say in the formulation of the biennial Programme and Budget of UNESCO, and can adjust it as it wishes.

- 550 The Chairman concluded that the trend of the discussion favoured the proposed later dates for the years in question rather than the present dates.
- 551 **The Assembly decided that the Twenty-seventh Session of the Executive Council would be in Paris, 20-30 October 1994; and the Eighteenth Session of the IOC Assembly would be 21 June-5 July 1995, preceded by the Twenty-eight Session of the Executive Council, 20 June 1995, in Paris.**
- 552 The Secretary also reminded the Assembly that the *ad hoc* Study Group on DOSS, taking into account the need for the IOC to maintain coherence with the UNESCO cycle, had proposed that the present periodicity of the IOC Assembly be maintained unless new considerations arose. Having been informed of the Director-General's subsequent proposal for adjusting the cycle of all UNESCO meetings, including eventually the General Conference and Executive Board, the Assembly had subsequently decided that this proposal be discussed under Agenda Item 14.
- 553 **The Assembly decided that, if the UNESCO General Conference changed its cycle, then the IOC Assembly should follow suit. This would imply a change in the Statutes. The Assembly therefore instructed the Secretary IOC to prepare, in such case, a relevant proposal for discussion at the next Executive Council Session and for submission to the Member States (Assembly) by the Executive Council eight months before the Assembly in accordance with the Rules of Procedure.**
- 554 **The Assembly considered various themes for the Bruun Memorial Lectures. It emphasized that the lecture theme should reflect the IOC profile and be applicable to the IOC programmes, but should also be of such a nature as to attract public and media interest, and to highlight the role of the IOC. Several Delegates suggested that only one Bruun Memorial Lecture be given at an early stage of the Assembly, but not necessarily the first day.**
- 555 Themes proposed included:
- (i) WOCE results;
 - (ii) GOOS and science, how it relates to economy, development and in helping meet basic needs of society such as food, water, protection of life;
 - (iii) results of TOGA, especially their applications;
 - (iv) the role of marine science in relation to integrated management and sustainable development of the oceans, the marine environment and its resources, including the coastal areas; this could focus on some specific subjects or systems such as mangroves or coral reefs.
- 556 Several Delegates suggested that the lecture(s) include also relevant socio-economic aspects, and not only the natural sciences aspects. It was suggested that two lectures be given on the same theme, with one focusing on the natural science aspects, and the other on the socio-economic aspects.
- 557 The Chairman concluded that the Secretary IOC should prepare a balanced proposal, on the basis of these deliberations and relevant developments, for submission to and approval by the Twenty-seventh Session of the Executive Council.
- 558 **The Assembly expressed its appreciation to the Secretary and his staff for the very informative exhibition organized outside the plenary halls with the support of CNES, ESA and NOAA and several other oceanographic institutions.**
- 559 The Delegation of Uruguay expressed the wish to have recorded and widely disseminated the substantial information provided during the Assembly on forthcoming events, meetings, expeditions, etc. The Assembly recommended to the Secretary to make full use of the "International Marine Science Newsletter" for this desirable dissemination of information.

15. ADOPTION OF THE SUMMARY REPORT

560 The Assembly adopted the Summary Report of this session together with 20 Resolutions (Annex II hereto).

561 The Delegate of Norway reminded the Assembly of previous decisions to improve the efficiency of the sessions of the Governing Bodies, *inter alia* in the interest of shortening the meetings and reducing the volume of the reports. It was his observation that the Seventeenth Assembly had made very little progress in that respect, rather the contrary. Much time had been spent on discussions of fine points of semantics which added little to the content, particularly in the draft summary report, and there was a tendency to discuss matters which were not on the approved agenda and for which there was no documentation provided. He suggested that a future mechanism which might be set up to continue the efforts to enhance the role of the Commission, should provide the Commission with a proposal for detailed procedures to be followed in the conduct of the sessions. Such a set of procedures could serve as guidelines for delegates when they make their interventions, and would facilitate the work of the Secretariat and the Rapporteur in the formulation of texts to be submitted for adoption. Several delegations voiced their full support of the statement of the Delegate of Norway.

16. CLOSURE

562 The Delegates of the United Kingdom and the Russian Federation expressed, on behalf of the Assembly, their appreciation and thanks to the IOC Chairman for his continuous and effective leadership of the Session and his untiring and successful efforts to achieve consensus on several important and far-reaching agenda items in the UNCED follow-up for the Commission.

563 The Chairman responded by recalling those aspects of his and the Commission's work that had retained the most attention, that the use of the resources of the oceans should be guided by the principle of their sustained development and that, in this process, the IOC fully co-operates as a "competent international organization".

564 In concluding, the Chairman expressed his gratitude to all Delegates and to the Secretary IOC and all his staff. He specifically thanked the IOC Documentalist and the Assembly Secretariat for the excellent support services they had provided. He particularly thanked the interpreters for their outstanding contribution to facilitating the debates and deliberations on the rather wide-ranging scope of work covered by the Commission.

565 The Chairman closed the Seventeenth Session of the Assembly at 11:15 on 11 March 1993.

ANNEX I

AGENDA

- 1. OPENING**
- 2. BRUUN MEMORIAL LECTURES**
- 3. ADMINISTRATIVE ARRANGEMENTS**
 - 3.1 ADOPTION OF THE AGENDA
 - 3.2 DESIGNATION OF THE RAPPEUR
 - 3.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION
- 4. REPORT ON THE ACTIVITIES, 1991-1992**
 - 4.1 SECRETARY'S REPORT ON INTERSESSIONAL ACTIVITIES
 - 4.2 REPORT ON THE COMMISSION'S ACTIVITIES 1991-1992
- 5. OCEAN SCIENCES**
 - 5.1 THE OCEAN'S ROLE IN CLIMATE AND GLOBAL CHANGE: OCEAN PROCESSES AND CLIMATE
 - 5.1.1 Report on WCRP and JSC
 - 5.1.2 Ocean Dynamics and Circulation on the Continental Shelf
 - 5.1.3 IGBP Ocean Related Projects (including JGOFS, LOICZ)
 - 5.2 OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)
 - 5.3 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR)
 - 5.4 OCEAN MAPPING
 - 5.5 MARINE POLLUTION RESEARCH AND MONITORING (GIPME/MARPOLMON) AND RELATED PROGRAMMES
- 6. OCEAN SERVICES**
 - 6.1 GLOBAL OCEAN OBSERVING SYSTEM AND RELATED ACTIVITIES
 - 6.1.1 First Session of the IOC Committee for GOOS
 - 6.1.2 Global Sea-Level Observing System (GLOSS)
 - 6.1.3 GOOS Global Coastal Zone and Shelf Seas Module
 - 6.1.4 Drifting-Buoy Co-operation Panel (DBCP)
 - 6.1.5 Integrated Global Ocean Services System (IGOSS)
 - 6.1.6 Satellite Remote Sensing
 - 6.1.7 Global Climate Observing System (GCOS)
 - 6.2 INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE) AND RELATED ACTIVITIES
 - 6.2.1 Fourteenth Session of the IOC Committee for IODE
 - 6.2.2 Global Temperature-Salinity Pilot Project (GTSP)
 - 6.2.3 Ocean Personal Computer Project (OCEAN-PC)

- 6.3 INTERNATIONAL TSUNAMI WARNING SYSTEM IN THE
PACIFIC AND RELATED ACTIVITIES
- 7. TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN MARINE SCIENCE (TEMA)
- 8. REGIONAL SUBSIDIARY BODIES AND CO-OPERATION
 - 8.1 MATTERS ARISING FROM REGIONAL SUBSIDIARY BODIES
 - 8.1.1 IOCARIBE
 - 8.1.2 WESTPAC
 - 8.1.3 IOCINCWIO
 - 8.1.4 IOCINDIO
 - 8.1.5 IOCEA
 - 8.1.6 Collaboration with ROPME
 - 8.1.7 MEDITERRANEAN
 - 8.1.8 Other regions, including South-west Atlantic, Southern Ocean and Southeast Pacific
- 9. CO-OPERATION WITH OTHER ORGANIZATIONS OF THE UNITED NATIONS SYSTEM
AND OTHER BODIES
 - 9.1 THE INTER-SECRETARIAT COMMITTEE ON SCIENTIFIC PROGRAMMES
RELATING TO OCEANOGRAPHY (ICSPRO)
 - 9.1.1 Sessions of ICSPRO and related co-operation with the ICSPRO Agencies
 - 9.1.2 Study of Legal Aspects of Ocean Data Acquisition Systems, Aids and Devices
(ODAS)
 - 9.2 CO-OPERATION WITH THE WORLD METEOROLOGICAL ORGANIZATION
(WMO)
 - 9.3 CO-OPERATION WITH THE UNITED NATIONS ENVIRONMENT PROGRAMME
(UNEP)
 - 9.4 CO-OPERATION WITH ICSU AND SCOR
 - 9.5 CO-OPERATION WITH OTHER BODIES INCLUDING CPPS, ICES, ECOM
- 10. FOLLOW-UP OF THE 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND
DEVELOPMENT: IOC STRATEGY AND ACTION PLAN
 - 10.1 AGENDA 21
 - 10.2 FRAMEWORK CONVENTION ON CLIMATE CHANGE
 - 10.3 CONVENTION ON BIO-DIVERSITY
 - 10.4 RESPONSE OF THE IOC TO RELATED STRUCTURAL MATTERS AND UNCLOS
- 11. PROGRAMME AND BUDGET
 - 11.1 PROGRAMME AND BUDGET FOR 1993
 - 11.2 DRAFT PROGRAMME AND BUDGET FOR 1994-1995
 - 11.3 OTHER ASPECTS OF THE UNESCO ENVIRONMENT AND NATURAL RESOURCES
MANAGEMENT PROGRAMME

12. **ENHANCING THE ROLE OF THE COMMISSION**
13. **ELECTIONS**
 - 13.1 **ELECTION OF THE OFFICERS OF THE COMMISSION**
 - 13.2 **ELECTION OF THE MEMBERS OF THE EXECUTIVE COUNCIL**
14. **DATES AND PLACES OF THE EIGHTEENTH SESSION OF THE ASSEMBLY AND THE TWENTY-SEVENTH (INCLUDING PROPOSAL ON AGENDA ITEMS) AND THE TWENTY-EIGHTH SESSIONS OF THE EXECUTIVE COUNCIL**
15. **ADOPTION OF THE SUMMARY REPORT**
16. **CLOSURE**

ANNEX II

ADOPTED RESOLUTIONS

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Resolution XVII-1

COASTAL ZONE ACTIVITIES

The Intergovernmental Oceanographic Commission,

Recalling Resolution XVI-11 "Co-ordination of Coastal Zone Programmes and Activities" and Resolution EC-XXV.8 "IOC participation in UNCED", which recognized the leading role of IOC in research and systematic observation in relation to "Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational and development of their living resources" and related capacity building,

Taking note of the Report of Expert Consultation for the IOC Programme on Coastal Ocean Advanced Science and Technology Study (COASTS) (IOC Workshop Report No. 73),

Recalling the need to enhance the capabilities of interested Member States to carry out coastal and shelf sea marine studies, based on common scientific methodology, in order to increase scientific understanding and knowledge, and to provide best available scientific advice to effective coastal zone management action at national and regional level,

Noting with satisfaction the progress in co-ordinating IOC programme activities, together with other ICSPRO Agencies, which encourage and facilitate coastal and shelf seas marine sciences and related marine science development and technology transfer on a global basis through GOOS, GIPME, OSLR and OSNLR, as well as through the Commission's regional programmes,

Noting also the programmes developed by ICSU and other organizations, e.g., JGOFS and LOICZ,

Noting further that several important international, regional and multilateral conferences relating to integrated management and sustainable development of the coastal zone and rational uses of coastal resources are being organized with IOC support as follow-up activities to UNCED,

Recognizing that the UNCED Agenda 21 in Chapter 17, particularly sub-chapters A and E, emphasize the important role of national integrated coastal area management programmes in order to achieve sustainable use of the coastal zone for national development, and the need for provision of a scientifically valid information basis, as well as related capacity building,

Decides to set up an *ad hoc* IOC Group of Experts including representatives from the Commission's regional and global programmes to:

- (i) prepare a comprehensive report to the next Assembly outlining the needs for research, monitoring, assessment and services to support integrated coastal zone management;
- (ii) review the contributions toward this goal of IOC programmes, particularly GOOS, GIPME, OSLR, OSNLR and TEMA, and other scientific programmes developed by UNESCO, UNEP, ICSU, etc, particularly LOICZ and JGOFS, and determine appropriate mechanisms for co-ordination of these programmes;
- (iii) consider possible contributions to the Coastal Module of GOOS for integrated coastal zone management, taking into account the scope of the other GOOS modules, particularly Health of the Ocean and Marine Living Resources Module; and
- (iv) recommend a co-operative scientific advisory mechanism to support development of integrated coastal zone management, together with related comprehensive training, education and capacity building;

Instructs the Secretary to inform the Member States of the establishment of the *ad hoc* Group of Experts and invite them to submit to the Secretary names of experts with their respective *curriculum vitae* so that this can be taken into account when establishing the Group;

Noting that the financial implications of these decisions are approximately 27,000 US\$, of which 15,000 can be available in the IOC budget for 1994/95,

Invites UNEP, other ICSPRO agencies and ICSU to consider co-sponsoring this IOC *ad hoc* Group of Experts.

Resolution XVII-2

OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR)

The Intergovernmental Oceanographic Commission,

A. OSLR Organization

Recalling that:

- (i) The Executive Council, at its Twenty-third Session, adopted Resolution EC-XXIII.1, establishing a new sub-programme on Marine Ecosystems Dynamics and Living Resources (EDLR) within OSLR,
- (ii) The Assembly at its Sixteenth Session and the Executive Council at its Twenty-Fifth Session decided that OSLR should develop jointly with SCOR an approach to an International Global Ocean Ecosystems Dynamics Program I-GLOBEC,
- (iii) The Executive Council at its twenty-third Session expressed great concern about the staffing situation in OSLR,
- (iv) The Assembly at its Sixteenth session recognized that the IOC's organizational structure for considering OSLR issues is complex and should be addressed at the Seventeenth session of the Assembly, together with ways to strengthen the Programme and identify further resources,

Recognizing that a focus for the OSLR programme needs to reflect new realities of global climate change, biodiversity and sustainable resources with respect to the specifics of item (i-iv) above,

Further recognizing that OSLR needs to provide scientific support to the development of the Global Ocean Observing System (GOOS),

Also recognizing that OSLR requires a commitment of resources on the part of the IOC Member States,

Also recognizing that OSLR needs to implement elements of TEMA within its activities when appropriate,

Also recognizing that OSLR has evolved into a partnership with SCOR through IOC's co-sponsorship of GLOBEC and SCOR Working Group 97 on the Physiological Ecology of Harmful Algal Blooms; and ICES, which co-sponsors a Study Group on the Dynamics of Harmful Algal Blooms and the Cod and Climate Change Programme as an element of GLOBEC,

Also recalling Agenda 21 and the follow-up action of the UN General Assembly to convene a UN Conference on Straddling and Highly-Migratory Fish Stocks, and

Noting the relevancy of IOC and OSLR, in particular, to be involved in this Conference as well as maintaining a focus in fisheries activities,

Decides to establish an Intergovernmental Committee for OSLR with the terms of reference in Annex 1, and invites FAO to co-sponsor the Committee;

Decides to reorganize the OSLR Programme initially into two main components, including TEMA. These are Ecosystem Dynamics and Living Resources (EDLR), and Global Ocean Observing System Support (GOOS). The EDLR component will be composed of GLOBEC, guided by an IOC-SCOR Scientific Steering Committee; Harmful Algal Blooms (HAB), advised by ICES and SCOR, and IREP. The GOOS Support component will be composed of IOC participation in the UN-GEF-Large Marine Ecosystem (LME) and continued IOC support for the Continuous Plankton Recorder (CPR);

Decides to conduct a thorough evaluation of the application of the Large Marine Ecosystem (LME) concept within the OSLR context;

Invites Member States to share the cost of a permanent appointment for the position of OSLR Technical Secretary through contributions to the IOC Trust Fund;

Encourages Member States to second appropriate individuals to assist the Technical Secretary;

Instructs the Secretary IOC to organize Groups of Experts for the components of OSLR where necessary, and as required.

B. Regional Subsidiary Bodies

Recalling that the Executive Council at its Twenty-third Session urged the Secretary to expand the OSLR programmes to the IOCINCWIO, IOCEA and Mediterranean regions; and the Assembly at its Sixteenth Session requested accelerated implementation of OSLR in the IOCINCWIO, IOCEA and IOCARIBE regions,

Recognizing that OSLR Programmes for Regional Subsidiary Bodies and jointly with other regional organizations will require support in terms of people and resources from within the regions,

Urges Member States of the IOC Regional Subsidiary Bodies to integrate OSLR activities through the following actions:

- (i) ensure that there is appropriate regional representation within the Intergovernmental Committee for OSLR;
- (ii) explore the immediate possibility of OSLR regional Programmes in IOCINCWIO and IOCEA by the formation of Regional Groups of Experts.

Invites the Secretary IOC to give priority to the participation of the OSLR Technical Secretary in appropriate regional subsidiary bodies.

C. Harmful Algal Blooms

Recalling that the IOC, at the Sixteenth Session of its Assembly, through its Resolution XVI-4, approved the formation of an *ad hoc* Intergovernmental Panel on Harmful Algal Blooms (IPHAB) and decided to review, at the Seventeenth Session of the Assembly, the Terms of Reference of the *ad hoc* Panel,

Noting the Report of the First Joint IOC-FAO *ad hoc* Panel,

Adopts the modified Programme Plan on Harmful Algal Blooms (IPHAB-I/3, Annex V);

Approves the continuation of the Joint IOC-FAO *ad hoc* Panel, with the Terms of Reference unchanged (as given in the Annex to Resolution XVI-4);

Instructs the Secretary IOC to convene the Second Session of the Joint IOC-FAO *ad hoc* Panel as soon as possible;

Urges Member States to identify and provide the resources for the establishment of the Programme Office;

Instructs the Secretary IOC to proceed with the establishment of the Programme Office for Harmful Algal Blooms, in accordance with the Terms of Reference appended in Annex 2;

Also instructs the Secretary IOC to proceed with the establishment of HAB science and communication centres to implement elements of the OSLR/HAB Programme specified in co-operation with and co-ordinated by the HAB Programme Office at the IOC Secretariat.

Financial implications of Part C are approximately \$100,000, of which \$50,000 can be expected to be available in the 1994/95 IOC budget.

Annex 1 to Resolution XVII-2

Terms of Reference of the Intergovernmental Committee for Ocean Science and Living Resources

The Committee, which will be composed of national representatives from IOC Member States, will have the following terms of reference:

- (i) To plan the further development of the OSLR Programme with particular reference to the promotion, support and integration of Ecosystem Dynamics Studies and Living Resources and Global Ocean Observing System support;
- (ii) To seek the cooperation of and liaise with appropriate UN and International Agencies, Regional Bodies, and National Institutes that might be able to assist in aspects of OSLR activities;
- (iii) To provide scientific and technical advice to the IOC regional subsidiary bodies involved in the implementation of regional components of OSLR;
- (iv) To consider how best to ensure the participation of developing countries in OSLR by including TEMA components therein.

Annex 2 to Resolution XVII-2

Terms of Reference for Intergovernmental Oceanographic Commission's Program Office for the Harmful Algal Bloom Programme (Document IOC-FAO/IPHAB-I/3, Annex VII)

Purpose

To Facilitate and Co-ordinate HAB Program Development and Implementation.

Activities and Responsibilities

- a) Advise on and assist with the formulation of proposals for the support of the programme,

- b) Organization of planning and implementation meetings,
- c) Preparation and dissemination of reports,
- d) Distribution of information,
- e) Supervision of newsletter, directory, manual and other programme activities,
- f) Interaction and co-ordination with other IOC/MRI programme and activities,
- g) Interaction and co-ordination with other international governmental and non-governmental Organizations that sponsor the programme as well as other organizations which participate in the Activities,
- h) Provision of staff support for workshops on development and implementation,
- i) Co-ordination of the required scientific guidance for the HAB Programme,
- j) Helping in identification of resources and work with IOC and FAO Member States towards Implementation of funded projects.

Level of Staffing

It is anticipated that initially the Programme Office will be composed of two full-time professionals (one leading, one junior) and one part-time secretary.

Resolution XVII-3

CONFERENCE ON COASTAL CHANGE

The Intergovernmental Oceanographic Commission,

Recognizing the need for an international approach to coastal studies as a basis for, *inter alia*, coastal zone management (UNCED: Agenda 21, para.17.11),

Considering the relevance of the programmes for Ocean Science in Relation to Non-Living Resources (OSNLR), Ocean Sciences in Relation to Living Resources (OSLR), and Global Investigation of Pollution in the Marine Environment (GIPME), to understanding the evolution of the coastal zone in the context of environmental change at the local, regional and global change/level,

Noting the endorsement of the Sixteenth Session of the Assembly and the Twenty-fifth Session of the Executive Council for the proposal for an international conference on the theme of Coastal Change: Past Present and Future - Its Scientific Appraisal for Effective Coastal Management,

Noting also that a number of national meetings (e.g., Cuba) and IOC regional meetings (e.g., WESTPAC) will be held during 1993-94, and the opportunity that this will present for bringing conclusions and recommendations from these meetings to the International Conference,

Considering that such a conference would provide an excellent opportunity to explore linkages between OSNLR, OSLR, GIPME, TEMA and GOOS and their common goals regarding environmental change, especially in the coastal zone,

Expresses its appreciation to Aquitaine County and the City of Bordeaux for their formal offer to the Director-General of UNESCO to host and support the proposed conference;

Approves the proposal for an international conference on coastal change to be held in Bordeaux in early 1995;

Instructs the Secretary IOC to assist in the organization of the Conference and work to ensure strong participation from developing countries in order to present the regional problems of the coastal zone to the conference;

Further instructs the Secretary IOC to bring the conclusions arising from the Conference to the next Assembly for their information and consideration in the context of the aims of UNCED and the sustainability of the coastal zone.

Resolution XVII-4

SUPPORT TO THE CONTINUATION OF CO-SPONSORING THE JOINT IOC-IHO GUIDING COMMITTEE FOR GEBCO

The Intergovernmental Oceanographic Commission,

Recognizing the valuable asset and resource represented by the General Bathymetric Chart of the Oceans (GEBCO), and in particular the 'GEBCO Digital Atlas (GDA)' which has become fully operational with global ocean cover during 1993; by the International Geological-Geophysical Atlases of the Atlantic and Pacific Oceans (GAPA), as well as by the five regional ocean mapping projects at present operational:

- (i) The International Bathymetric Chart of the Mediterranean and its Geological/Geophysical Series (IBCM);
- (ii) The International Bathymetric Chart of the Caribbean Sea and Gulf of Mexico (IBCCA);
- (iii) The International Bathymetric Chart of the Western Indian Ocean (IBCWIO);
- (iv) The International Bathymetric Chart of the Central Eastern Atlantic (IBCEA);
- (v) The International Bathymetric Chart of the Western Pacific (IBWCP);

Recognizing further that the impact of the GDA, GAPA and regional ocean mapping projects on the marine community needs to be evaluated closely, and that ways and means of capitalizing on these series will also need to be developed further,

Noting that there are many further tasks for which the GEBCO Guiding Committee will continue to be needed, including its supervision of the Network of Reviewers, continuous updating and further development of the 'GEBCO Digital Atlas', and production of a 6th Edition of the traditional printed GEBCO chart series,

Noting also the decision of the XIVth International Hydrographic Conference (May 1992) that the International Hydrographic Organization should continue to co-sponsor the GEBCO project,

Welcoming the publication of the International Geological-Geophysical Atlas of the Atlantic Ocean in 1991, and the progress made by the various regional projects in fulfilling their tasks,

Expresses its great appreciation to the Governments of the United Kingdom and the Russian Federation for the large amounts of work and funding which they have put into the GEBCO and the GAPA and IBCM projects respectively;

Also expresses its thanks to all individual scientists and their institutions worldwide who have contributed to the successful production of the GDA, the GAPA Atlantic Ocean atlas, and regional bathymetric and geological-geophysical chart series;

Decides to continue co-sponsoring the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of Oceans (GEBCO), with the revised terms of reference contained in the annex to this resolution, subject to approval by IHO.

Financial implications: none

Annex to Resolution XVII-4

**Revised Terms of Reference for the
Joint IOC-IHO Guiding Committee for the
General Bathymetric Chart of the Oceans (GEBCO)**

The Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of Oceans (GEBCO) shall:

Guide the GEBCO project and make recommendations to the two parent organizations on the policy to be followed for the preparation and dissemination of the world series of contoured charts of the ocean floor and of the 'GEBCO Digital Atlas'.

Identify the needs of the various users of the bathymetry of the world's oceans, study the ways and means whereby these needs can be met, and implement actions found feasible which meet these needs.

Advise the International Hydrographic Organization (in its capacity as the World Data Centre for Digital Bathymetry) on matters connected with the collection and exchange of bathymetric data, including the development and automatic data generation, archival and retrieval methods, soliciting the advice and assistance of the IOC Committee on International Oceanographic Data and Information Exchange (IODE), and others as necessary.

Stimulate the flow of data relevant to GEBCO by actively identifying sources of new data and encouraging research workers to release their data to appropriate data banks, with the object of ensuring that maximum available data are provided to the World Data Centre for Bathymetry and its IHO Data Centre for Digital Bathymetry.

Supervise the means of maintaining, further developing and routinely updating the 'GEBCO Digital Atlas' (GDA) by :

- (i) organizing procedures for new compilations of bathymetry;
- (ii) advising on standards and methodology;
- (iii) generating and developing a supplementary file containing shiptracks, for the purpose of providing graphic presentation for quality assurance related to interpreted bathymetric information;
- (iv) integrating in an appropriate way the geographical names of undersea features; and
- (v) considering the best medium and software for the effective use of the GDA by all users.

Explore the potential, for the better interpretation of oceanic bathymetry, of techniques such as acoustic imagery and satellite observations.

Taking into account the new technologies and data available, draft specifications and a timetable for the production of a 6th Edition of the traditional printed GEBCO chart series.

Investigate and develop new extra-budgetary logistic and financial arrangements necessary for the production of a 6th Edition of GEBCO.

Prepare and maintain, in association with national and international bodies, an authoritative Gazetteer of Geographical Names of Undersea Features.

Recommend and develop measures for optimum publicity, distribution and sales of copies of the 'GEBCO Digital Atlas' and printed charts produced under the aegis of the Guiding Committee.

Maintain, as necessary, advisory Sub-Committees on:

- (i) Geographical Names and Nomenclature of Ocean Bottom Features;
- (ii) Digital Bathymetry;

and create others as required from time to time.

Advise regional bodies affiliated to IOC and/or IHO of the specifications for, and collaborate in the preparation of, bathymetric charts at scales suitable for regional projects, to help ensure their compatibility with, and later inclusion in, the GDA.

Provide advice on ocean mapping, as requested by Intergovernmental and non-governmental organizations.

Resolution XVII-5

GLOBAL OCEAN OBSERVING SYSTEM (GOOS)

The Intergovernmental Oceanographic Commission,

Noting:

- (i) IOC Resolutions XV-4, XVI-8, XVI-10, EC-XXIII.5 and EC-XXV.3 on GOOS, which call for the IOC to develop GOOS and establish the necessary international co-ordination mechanisms, and to initiate jointly with UNEP and WMO coastal pilot monitoring activities,
- (ii) WMO Resolutions 11 (EC-XLI), 9 (Cg-XI) and 21 (Cg-XI) which express WMO support for GOOS development and relevant co-operation with the IOC,
- (iii) UNEP Governing Council Decisions 16/26, 16/27 and 16/41 which express UNEP support for actions which will meet the needs to be addressed by GOOS,
- (iv) the decisions made by UNCED, including the two Conventions and Chapter 17, Section E, of Agenda 21 (Section E, para 17.102), which call for:
 - (a) Member States to support IOC in co-operation with WMO, UNEP, *inter alia*, in the systematic collection and exchange of ocean data needed to apply integrated management approaches and to predict impacts of environmental change;
 - (b) the IOC to develop fully the strategy for providing training, education and technical assistance for developing countries through its Training, Education and Mutual Assistance (TEMA) programme,
- (v) the report of the meeting of the ad hoc panel for the Health of the Ocean Module of GOOS and the need for input from other panels and GOOS modules in order to resolve effectively the issues identified,

Recognizing the limited human and financial resources available for the GOOS planning and development,

Having reviewed the Executive Summary and Recommendations of the First Session of the IOC Committee for GOOS,

Takes note of the Executive Summary;

Decides to take the following action on the recommendations:

Recommendation GOOS-I.1 Further Development of the Global Ocean Observing System (GOOS) and Co-ordination Mechanisms for Scientific Advice and Inter-Agency Co-operation

- (i) Approves the Recommendation;
- (ii) Instructs the Secretary, in close consultation with the Chairmen of IOC and the IOC Committee for GOOS, to pursue and finalize the negotiations leading to the signature of a Memorandum of Understanding on the co-sponsorship of a GOOS technical and scientific advisory mechanism by concerned organization(s) and to facilitate the establishment of this body as quickly as possible;
- (iii) Calls upon ICSU/SCOR to assist the IOC and the co-sponsors in the establishment of scientific design panels for the GOOS modules, as a matter of urgency, ensuring that the best possible use is made of existing mechanisms;
- (iv) Instructs further the Secretary to make as wide a use as possible of ICSPRO to facilitate the formation of GOOS;

Recommendation GOOS-I.2 The Approach to GOOS and National Commitments

- (i) Approves the Recommendation;
- (ii) Agrees that the document "The Approach to GOOS" (Doc.IOC-XVII/8 Annex 2) as amended by the First session of the IOC Committee for GOOS should be used as a strategy document for GOOS planning and development;
- (iii) Invites WMO and UNEP to co-sponsor, jointly with IOC, the IOC Committee for GOOS;
- (iv) Urges Member States, especially developed countries, to contribute to GOOS through an earmarked part of the IOC Trust Fund to support the costs of the planning and development phase of GOOS;
- (v) Urges Member States and co-sponsoring Organizations, together with the GOOS Support Office, to conduct public and information activities to promote GOOS;

Recommendation GOOS-I.3 Global Sea Level Observing System (GLOSS)

- (i) Approves the Recommendation;
- (ii) Instructs the Secretary to arrange, through appropriate means and in consultation with Member States, for the position of a Technical Secretary for GLOSS as part of the GOOS Support Office in order to promote and fully support GLOSS development;

Recommendation GOOS-I.4 UNEP-IOC-WMO Long-Term Global Monitoring System of Coastal and Near-Shore Phenomena Related to Climate Change

- (i) Approves the Recommendation;
- (ii) Invites UNEP and WMO, as co-sponsoring agencies, to continue their support for the implementation of the pilot activities;
- (iii) Urges Member States to consider, and inform the Secretary on their participation in the pilot activities as well as on their possible support of and contribution to the implementation of the pilot activities;

Recommendation GOOS-I.5 GOOS Linkage With Existing Programmes/Activities

- (i) Approves the Recommendation;
- (ii) Agrees that the strengthening and accelerated development of existing ocean observational and data management activities, particularly IGOSS, GLOSS, DBCP, IODE, MARPOLMON, International Musselwatch, CPR and TEMA components of these programmes should be considered as a priority for GOOS development and that adequate staff and financial support should be provided for their implementation;
- (iii) Urges the Chairmen of the concerned scientific/technical subsidiary bodies of the Commission, as well as of its regional subsidiary bodies and of the Committee for TEMA, to work with the IOC Committee for GOOS and GOOS scientific advisory bodies with regard to the design, planning and development of GOOS;

Recommendation GOOS-I.6 TEMA In Relation to GOOS

- (i) Approves the Recommendation;
- (ii) Agrees that "Capacity Building" can only result from (a) long-term commitments and partnerships between developing and developed countries, and (b) identification and use of new and external sources of support;
- (iii) Stresses that provision of equipment should keep pace with education and training in developing countries;
- (iv) Decides to establish an earmarked GOOS/TEMA part of the IOC Trust Fund to support the TEMA-related activities within GOOS;
- (v) Urges developing Member States to:
 - (a) identify their needs in terms of human resource development and infrastructure in relation to GOOS;
 - (b) identify their existing training facilities and institutions for participation in the GOOS/TEMA efforts;
- (vi) Requests the IOC Committee for GOOS to provide guidance to the GOOS support office on actions required by IOC Member States and co-sponsoring agencies;

Accepts the interim report on developing the Health of the Ocean Module, and instructs the Secretary to ensure the timely completion of this report.

Approves the attached Statement (Annex to Resolution XVII-5) to be proposed for adoption by the Intergovernmental Meeting on the World Climate Programme and requests the Secretary to bring this Statement to the attention of the Meeting.

Financial implications (1994-1995):
Required

Anticipated 27C5
(Doc.IOC-XVII/8, 6.1.1 GOOS)

Recommendation 1

Meetings of 5 Panels (2) \$330K

Ad hoc Meetings (4) \$110K

Total: \$440K

\$150K

Expected net shortfall: \$290K

Recommendation 2

Translation/Publication of the Document
and GOOS Brochure
\$30K

Recommendation 3

(Doc. IOC-XVII/8, 6.1.2 GLOSS)

Preparation and publication of the GLOSS
up-dated Handbook \$20K
Meeting of GE/GLOSS \$30K
Sea-level training courses (2) \$40K
Position of GLOSS Technical Secretary \$100K
Staff travel \$5K
Total: \$195K

\$100K

Expected net shortfall: \$95K

Recommendation 4

(Doc. IOC-XVII/8, 6.1.3 GOOS Coastal)

Meetings of the Task Team on Coral Reefs
(2) - \$50K
Meetings of the Global Task Team on
Mangroves (2) - \$50K
Meetings of experts on Sea Level Project
in the Indian Ocean (2) - \$50K

Meetings of experts on Coastal Circulation
project (2) - \$50K
Workshop on plankton community structure
monitoring (1994) - \$40K

Preparation and publication of Methodology
manuals - \$30K
Consultancy services to advise countries on
projects implementation and related training
- \$100K

Staff travel- \$20K

Total: \$390K

\$100K

Expected net shortfall: \$290K

Recommendation 5

None

Recommendation 6

None

Grand Total: \$1055K

\$ 350K

Expected net shortfall: \$705K

Annex to Resolution XVII-5

**Statement for the Intergovernmental Meeting on the World Climate Programme
by the Seventeenth Assembly of the Intergovernmental Oceanographic Commission
Paris, France, 25 February - 11 March 1993**

The Assembly of the Intergovernmental Oceanographic Commission of UNESCO at its seventeenth session, deeply concerned with the need to improve understanding and prediction of the climate

change and its impact on economic development, transmits to the Intergovernmental Meeting on the World Climate Programme for its consideration the statement in the conclusion to the present text.

Introduction

1. The ocean plays a key role in determining Earth's climate. The Global Atmosphere and the World Ocean are an interactive system. The oceans are both a source and a sink for carbon dioxide and other "greenhouse gases". The ocean also drives the global cycle of evaporation and rainfall. Any possibility of predicting climate changes beyond a few weeks demands that the ocean behaviour be taken into account. Long-term, systematic observations in the World Ocean are needed to reduce the uncertainty which now exists with regard to the ocean's role in climate variability.

2. The Intergovernmental Oceanographic Commission, consisting of 122 Member States, was established in 1960 to promote marine scientific investigations, related ocean services and capacity building with a view to learning more about the nature and resources of the oceans through concerted action of its Members.

3. The recognition by States and Organizations of the UN System of the importance of IOC for international oceanographic co-operation and capacity building has been demonstrated in the reference to IOC as a joint specialized mechanism in the ICSPRO Agreement and as a competent international organization in the UN Convention on the Law of the Sea; and by the acceptance of the IOC in its own right as a co-sponsor of the Second World Climate Conference and at the United Nations Conference on Environment and Development.

4. IOC in its 30 years of activity, has accumulated a capital of experience, both at global and regional levels, as the only UN organization fully devoted to marine research, ocean services and related training, education and mutual assistance. The Commission established formal contacts with many governmental and non-governmental international organizations including UN, FAO, WMO, UNEP, IMO, IAEA, IHO, ICES, CPIS, ICSEM, ICSU and SCOR, .

5. Since the establishment of the World Climate Programme in 1979 the IOC actively supported and participated in the planning and implementing the World Climate Research Programme, presently sponsored jointly by IOC, WMO and ICSU in co-operation with SCOR, particularly TOGA and WOCE.

6. The Commission has promoted the development of the Integrated Global Ocean Services System in co-operation with WMO; the Global Sea Level Observing System; and the International Oceanographic Data and Information Exchange (IODE) system that laid down a basic international infrastructure for the development of the Global Ocean Observing System.

Intergovernmental Decisions

7. The Second World Climate Conference (29 October - 7 November 1990) adopted conclusions and recommendations to create a Global Climate Observing System (GCOS). The Conference statement noted the importance of developing a Global Ocean Observing System of physical, chemical and biological measurements.

8. The United Nations Conference on the Environment and Development (June 1992) in Agenda 21, Chapter 17, Section E called for States to support the role of IOC, in co-operation with WMO, UNEP and other international organizations, in the collection, analysis and distribution of data and information from the oceans and all seas, including as appropriate through the proposed Global Ocean Observing System (GOOS), giving special attention to the need for IOC to develop fully the strategy for providing training and technical assistance for developing countries through its Training, Education and Mutual Assistance (TEMA) programme. The UNCED also emphasized that the developed countries should provide the financing for the development and the implementation of the GOOS system. Two Conventions signed by 154 countries, namely the UN Framework Convention on Climate Change and the UN

Convention on Biological Diversity, also calls for systematic observation of the components of the climate and biodiversity systems.

9. The agreement on the joint sponsorship of the World Climate Research Programme by WMO, IOC and ICSU was signed in 1992.

10. The agreement on the co-operation among WMO, IOC of UNESCO, ICSU and UNEP in organizing a Global Climate Observing System was signed in 1991 and 1992. By this agreement the co-operating organizations agreed that GCOS will be based on the co-ordinating of existing or planned operational and research programmes for observing the global climate system and that it will be based inter alia on the establishment of a Global Ocean Observing System.

It is further agreed that GOOS and GCOS share a common module: the climate module for GOOS is the same as the ocean component of GCOS.

Action Taken

11. The Intergovernmental Oceanographic Commission, by decisions of its Fifteenth and Sixteenth Assemblies and Twenty Fifth session of its Executive Council, decided to develop a Global Ocean Observing System (GOOS) and established the IOC Committee for GOOS as an intergovernmental forum for promoting GOOS, and the GOOS Support Office within the IOC Secretariat to co-ordinate GOOS development.

12. WMO, by decisions of the Eleventh World Meteorological Congress and the 43rd and 44th sessions of the Executive Council, expressed WMO support for GOOS development and relevant co-operation with IOC.

13. UNEP, by decisions of its Sixteenth Governing Council, expressed UNEP support for actions which will meet the needs to be addressed by GOOS.

14. IOC, UNEP, and WMO agreed to cooperate in developing a Long-Term Global Monitoring System of Coastal and Near-Shore Phenomena Related to Climate Change as a contribution to GOOS, particularly its Coastal module

15. The IOC Assembly, at its seventeenth session, adopted a strategy paper for GOOS planning and implementation, and invited WMO, UNEP and ICSU to co-operate in these efforts. The Assembly also emphasised that the existing ocean observational and data management activities, particularly IGOS, GLOSS, DBCP, IODE, MARPOLMON, Musselwatch and CPR, and TEMA components of these programmes, should be considered as a priority for GOOS development and that TEMA components of these programmes be given particular consideration. The Assembly decided to earmark a part of the IOC Trust Fund for this development.

Conclusion

16. Therefore, the Member States of the Intergovernmental Oceanographic Commission requests the Intergovernmental Meeting on WCP to adopt the following recommendation:

"Recognizing the key role of the oceans in the Earth's Climate System and the urgent need to develop GOOS for long-term, systematic collection, analysis and distribution of ocean data, the Meeting assigns a high priority to the planning, development and implementation of the Global Ocean Observing System as an important contribution to the World Climate Programme. The Meeting encourages the IOC to continue the development of this system in co-operation with WMO, UNEP, ICSU and other concerned international organizations on the basis of existing and planned international and national ocean observing systems. The Meeting urges countries to support this system through their national facilities and services. The Meeting also urges countries to increase their support for the training, education, mutual assistance and capacity building programme of IOC as well as the related Voluntary

Co-operation Programme, in order to enable all countries to participate in GOOS and to interpret and apply the resulting data and information and encourages the concept of partnerships between developing and developed countries."

Resolution XVII-6

DATA BUOY CO-OPERATION PANEL

The Intergovernmental Oceanographic Commission,

Noting:

- (i) WMO EC Resolution 10 (EC-XXXVII) - Drifting-Buoy Co-operation Panel,
- (ii) IOC EC Resolution EC-XIX.7 - Drifting Buoys,
- (iii) final report, Eighth Session of the Drifting-Buoy Co-operation Panel (Paris, October 1992), General Summary, paras. 89-90.

Noting further:

- (i) IOC Assembly Resolution XVI-8 - Global Ocean Observing System (GOOS),
- (ii) World Meteorological Congress Resolution 21 (Cg-XI) - WMO's Involvement in the Development of a Global Ocean Observing System (GOOS),

Recalling with appreciation that the Drifting-Buoy Co-operation Panel and its activities are supported entirely through voluntary contributions by Panel Member countries,

Considering:

- (i) that data from both drifting and fixed automated ocean-data buoys on the high seas contribute directly to a number of major programmes of WMO and IOC, including the WWW and WCRP,
- (ii) that such buoys will form an important component of the Global Ocean Observing System (GOOS) and of the Global Climate Observing System (GCOS),
- (iii) that international co-operation and co-ordination will be required for the future long-term maintenance of many fixed data-collection buoys on the high seas which are now deployed for research purposes,
- (iv) that the Technical Co-ordinator for the Drifting-Buoy Co-operation Panel already provides significant and essential support to the collection of data from such fixed ocean-data buoys,
- (v) that the Drifting-Buoy Co-operation Panel is a well-established and appropriate body to provide the support required for the international co-ordination and maintenance of fixed data-collection buoys on the high seas in support of WMO and IOC programmes,

Decides:

- (i) that the name of the Drifting-Buoy Co-operation Panel should be changed to the Data Buoy Co-operation Panel,

- (ii) that the terms of reference for the Data Buoy Co-operation Panel and for its Technical Co-ordinator should be as given in the annexes to this resolution;

Requests the Secretary IOC to continue to provide the necessary Secretariat support to the Panel, within the available budgetary resources;

Notes that the financial implication for the IOC regular programme budget averages \$2,000 per year.

Annex 1 to Resolution XVII-6

Terms of Reference for the Data Buoy Co-operation Panel

The Data Buoy Co-operation Panel shall:

1. Consider the expressed needs of the international meteorological and oceanographic communities for real-time or archival data from ocean-data buoys on the high seas and request action from its members, Technical Co-ordinator or action groups to meet these needs;
2. Co-ordinate activity on existing programmes so as to optimize the provision and timely receipt of good quality data from them;
3. Propose, organize and implement through the co-ordination of national contributions, the expansion of existing programmes or the creation of new ones to supply such data;
4. Support and organize as appropriate such action groups as may be necessary to implement the deployment of data gathering buoys to meet the express needs of operational oceanographic and meteorological Programmes, such as WWW, WCRP, GOOS, and GCOS;
5. Encourage the initiation of national contributions to data buoy programmes from countries which do not make them;
6. Promote the insertion of all available and appropriate buoy data into the Global Telecommunication System;
7. Promote the exchange of information on data buoy activities and encourage the development and transfer of appropriate technology;
8. Ensure that other bodies actively involved in buoy use are informed of the workings of the Panel and encourage, as appropriate, their participation in the Panel deliberations;
9. Make and regularly review arrangements to secure the services of a Technical Co-ordinator with the terms of reference given in Annex II;
10. Submit annually to the Executive Councils of the WMO and the IOC a report which shall include summaries of the existing and planned buoy deployments and data flow.

Annex 2 to Resolution XVII-6

Terms of Reference for the Technical Co-ordinator of the Data Buoy Co-operation Panel

The Technical Co-ordinator of the Data Buoy Co-operation Panel shall:

1. Under the direction of the Data Buoy Co-operation Panel take all possible steps within the competence of the Panel to assist in the successful achievement of its aims;
2. Assist in the development, implementation and management of quality control procedures for data buoy systems;
3. Assist in setting up suitable arrangements for notifying the appropriate user communities of changes in the functional status of operational buoys;
4. Assist in the standardization of buoy data formats, sensor accuracy, etc.;
5. Assist when requested with the development of co-operative arrangements for buoy deployment;
6. Assist in the clarification and resolution of issues between Service Argos and buoy operators;
7. Assist in promoting the insertion of all available and appropriate buoy data into the Global Telecommunication System;
8. Supply information about buoy developments and applications to the WMO and IOC Secretariats and assist the Data Buoy Co-operation Panel to promote an international dialogue between oceanographers and meteorologists;
9. Co-ordinate and monitor the flow of buoy data into appropriate permanent archives.

Note: This Resolution replaces IOC Resolution EC-XIX.7, which is no longer in force.

Resolution XVII-7

DEVELOPMENT OF ASFIS/ASFA AND THE IOC FUTURE ROLE IN IT

The Intergovernmental Oceanographic Commission,

Recognizing the essential role of ASFIS as the main information system, and in particular of ASFA as its bibliographic component, for aquatic scientists throughout the world, developing and developed countries alike,

Recognizing further the need for a multi-disciplinary approach in aquatic environmental research and the importance of information in achieving the capacity-building stressed in Agenda 21 of UNCED,

Having been informed of FAO's decision to terminate its existing contract for the production of ASFA with the present publisher by December 1994,

Noting the need expressed by FAO to concentrate on matters directly relevant to their mandate,

Taking into consideration Recommendation IODE-XIV.7 (Development of ASFIS/ASFA and the IOC future role in it),

Being aware of the need for re-negotiation of the terms of organisation and production of the ASFA product amongst the ASFIS co-sponsors and ASFA national partners,

Taking note of the proposals made by the publisher of ASFA in Document IOC-XVII/8 Annex 6,

Reaffirms the interest of IOC in assuming broader responsibilities in the field of marine information management, including the Secretariat responsibilities associated with ASFIS;

Adopts the strategy proposed in Document IOC-XVII/8 Annex 6 on the Development of ASFIS/ASFA and the IOC future role in it;

Noting that the implementation of the above mentioned strategy will have the following financial implications for the IOC: US\$ 28,400 - 35,500 (1995) and US\$ 29,000 - 36,250 (1996), assuming an equal cost-sharing between the co-sponsors,

Calls on Member States to provide financial support and seconded staff or associate experts to the IOC Secretariat to enable the IOC to take over from FAO the Secretariat role for both ASFIS and ASFA;

Invites the other ASFIS co-sponsors and other interested UN agencies to share the cost of supporting the ASFIS programme;

Requests the Secretary IOC to arrange for inter-Secretariat consultations on this matter within the agenda of the next ICSPRO meeting, or as *ad hoc* Consultation as appropriate;

Invites the Director-General of UNESCO to restore to the IOC the professional post for Marine Information Management within the staff establishment of the 27C/5;

Further invites the Director-General of UNESCO to explore with the Director-General of FAO the possibility of renewing FAO secondment to the IOC, *inter alia* for the purpose of ASFIS.

Resolution XVII-8

SUPPORT TO THE IOC PROGRAMME ON THE INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE

The Intergovernmental Oceanographic Commission,

Having reviewed the Summary Report, Recommendations and Resolutions of the Fourteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange,

Having considered the proposals on the IODE Programme and Budget for 1993-1995 (Recommendation IODE-XIV/8) and, in particular, those for the 1994-95 biennium (Draft 27 C/5),

Noting with satisfaction the progress made in developing IODE, in strengthening and improving data and information management services to the global science programmes, and in the improved co-operation with WMO, CEC, ICES and other international bodies dealing with ocean data management,

Acknowledging with appreciation the contributions of IOC Member States in support of IODE activities by providing funds, equipment and expertise and commitments of IOC Member States to support IODE in 1993-1995 as they are presented in Annex II to Recommendation IODE.XIV.8,

Accepts the Report and Resolutions and approves the Recommendations of the Fourteenth Session of the IOC Committee on IODE;

Noting that the financial implications for 1994-1995 are presented in the Annex to this Resolution,

Stresses the importance of implementing the IODE Programme and Workplan for the 1993 to 1995 intersessional period as they are described in Recommendation IODE.XIV.4 on IODE Programme and Budget and its annexes;

Calls on Member States to strongly support the implementation of the IOC Global Oceanographic Data Archaeology and Rescue Project, the further implementation of the delayed mode data flow and historical data aspects of the GTSPP, the Ocean PC project, the further development of marine information management aspects of the IODE programme, the implementation of the proposed IODE training programme and other activities

Also calls on Member States to provide further support to the IODE programme through in-kind and extra-budgetary means including the possible ways and means suggested in the Annex I to Recommendation IODE-XIV.8;

Endorses the proposal of the Committee to conduct pilot studies of new technologies and an ocean communication network for improving the provision of IODE data and information services to Member States and international programmes;

Invites the IOC Regional Subsidiary Bodies to consider ways and means to strengthen their oceanographic data-information management capabilities by designating (a) regional IODE co-ordinator(s), and to enhance their interaction with IOC/IODE by encouraging Member States of the region to (i) establish NODCs; (ii) establish RNODCs; and (iii) designate (a) national IODE co-ordinator(s) for information and data exchange.

Annex to Resolution XVII-8

Recommendation IODE-XIV.8 Programme and Budget for 1993-1995

**The IOC Committee on International Oceanographic Data & Information Exchange,
Having reviewed its ongoing activities and forecast programme implementation requirements through 1995,**

Having been informed of the likely resources to be made available for IODE activities in 1993 and the budgetary framework for the 1994-95 biennium,

Being aware of the severe financial constraints under which IOC is operating,

**Emphasizing the importance of ensuring adequate oceanographic data and information requirements and services for Member States and for the scientific and observational programmes of the Commission in support of
the Global Climate and Environmental Research and Global Change,**

Recognizing with thanks the considerable resources and efforts already being contributed by national experts, NODCs, and other institutions, to implement ocean data and information management activities,

Calls on Member States to continue, whenever possible, the financial responsibilities associated with execution of the IODE programme as undertaken by their experts, national oceanographic data centres and other institutions;

Urges both donor and recipient Member States to commit funding specifically for IODE projects within their multi-lateral and bilateral assistance programmes;

Encourages Member States to submit proposals for IODE activities, both national and regional, for consideration by the UNESCO Participation Programme;

Requests the Chairman of IODE to bring to the attention of the Seventeenth Session of the IOC Assembly, a framework proposal for the IODE programme of work and budget for the period 1993-1995, as found in the Annexes to this Recommendation.

**Annex 1 to Recommendation IODE-XIV.8
IODE Programme Overview for the 1993 to 1995 Intersessional Period**

The major thrusts of IODE efforts for the period 1993 to 1995 inclusive will be oriented to meet the objectives of IOC programmes related to climate and global changes, environmental protection, coastal zone management and sustainable development. IODE will continue to work in close co-operation with international organizations including FAO, WMO, UNEP, SCOR, IMO, IAEA, ICES, ICSEM, EEC, ESA, ICSU, etc. IODE will co-operate and collaborate to assist in the development of IGBP and GOOS, the need for which has been restated by many international meetings including UNCED.

The situation with the IOC budget is viewed as critical at this time. At a time when data management has the highest profile it has ever achieved, the IODE budget is being reduced. It has become necessary to review priorities and opportunities of IODE for obtaining extra-budgetary financing. The work plan presented here is based on the following principles:

- (i) noting that meetings of IODE subsidiary bodies are critical to the general success and development of the programme and that without them IODE Programme will quickly come to a stop, the Committee recommended that travel of experts to the meetings to confer and develop the IODE programme should be as far as possible supported by IOC,
- (ii) noting that increased commitments have been made at the Fourteenth Session of the IOC Committee on IODE by Member States and representatives of international organizations for the GTSP, data archeology, marine information management, TEMA and OCEAN-PC, the Committee recommended that the Secretary IOC will take into account and give a priority in supporting those projects that already have a strong extra-budgetary commitment;
- (iii) the Committee urged Member States to provide increased support to IODE by taking on additional work and funding and requested IODE national representatives and the IOC Secretariat to seek additional funds from all available extra-budgetary sources. If the necessary extra-budgetary support cannot be found, the IODE programme will not be achieved for this intersessional period.

Major efforts in the intersessional period (not in order of priority) will be devoted:

- (i) To the implementation of the IODE Global Data Archeology and Rescue Project. The urgency of this project cannot be overstated. In terms of funding, the project will require a small contribution from IOC which will attract Member States' contributions many times larger;
- (ii) To assist IOC in pursuing to find an appropriate solution to ensure the continuation of ASFA at least at the present level;
- (iii) To assist in the development of the data management activities of GOOS and IGBP, WOCE, JGOFS and TOGA through provision of expert advice, further development of enhanced data management through GTSP, assistance in the design of the data flows, and strengthening the network of IODE Data Centers;
- (iv) To assist Member States who are attempting to develop regional data and information management facilities and services;
- (v) To progress the state of integration of data and information technology in IODE and improve the distribution of meta data and publication information via telecommunication methods and CD-ROMs;
- (vi) To further develop OCEAN-PC as a delivery mechanism for IODE and IOC products and services, particularly for developing countries;

- (vii) To undertake a training programme which will include, not only traditional IODE subjects, but also new initiatives like data archeology and OCEAN-PC.

**Annex 2 to Recommendation IODE-XIV.8
IODÉ Work Plan & Provisional Budgetary Implications**

Note: * Figures are given as (extra-budgetary)/(IODÉ budget) all in K US dollars;
* Secretarial support other than travel is not included;
* An average of 2-2.5 K dollars/person is assumed for travel and per diem for meetings;
* Items are arranged by agenda item

	<u>1993</u>	<u>1994-1995</u>
2.1 Global Ocean Data Flow Revision of IOC Guide No.5 (hire a consultant to write)	Extra-budgetary	-
2.4 IODE & IGOSS IGOSS/IODÉ Bureau Meeting (4 people-late 1994) IODÉ Chairman to attend IGOSS-VII Session, Paris, 1995	- - -	-/8 - -/3
3.1 GE RNODCs & Climate Data Services Meeting, 1994 (France offers to host)	-	12/15
3.2 Ocean Climate Experiments Data Groups Travel of IODE Contact Persons to Meetings (IGBP, WOCE, TOGA, JGOFS)	4/4	8/8
4. GOOS Consultant to prepare a strategy paper on IODÉ response to GOOS/GCOS Travel of IODE officers to GOOS meetings (2/year)	- - - -	-/2 - -/10 -
5.2 Products of IODE Data Centres Consultant to prepare Guide to IODE products	-	-/3
5.3 GTSP 2 meetings (1993 Canada, & 1995)	10/5	10/5
6.1 Remote Sensed Data Meeting of CMM/IGOSS/IODÉ <i>Ad hoc</i> Group on Remote Sensed Data (IODÉ participation)	-/4	-/10
6.4 Data Archeology & Rescue Regional Workshop, 1993, Russia & annual workshops for 1994/1995 Undertake project including computer hardware/software, salaries, etc.	40/20 220/-	100/40 495/-
7.1 GETADE Meeting of <i>Ad hoc</i> Group on format development hosted by ICES, 1993 Full meeting of GETADE, 1994 Workshop on Computing Technologies for data management, 1995	-/8 - - -	- -/20 100/20

7.2	Quality Control Publish quality control manual	5/-	
7.3	OCEAN-PC & Software Development Meeting of Experts to Review User experiences & future needs (1994)		-/20
8.1	GE-MIM Meetings of Group of Experts, 1993 & 1995	-/20	/20
	Missions to Africa to expand RECOSCIX-WIO project, 1993 & 1994	/10	/10
8.2	ASFIS/ASFA (from extra-budgetary funds particularly post Dec. 1994)	-	(280-620)/-
9.	Training		
*	Development of training course modules	Extra-budgetary	
*	Hardware provision for OCEAN-PC (1994)	-	Extra-budgetary
*	Training courses in OCEAN-PC	-	/40
*	WESTPAC Training Course, Japan \$40K each year	40/-	80/-
*	Regional Training Course for S. American countries-June 1994-Argentina	-	/17
*	Regional Training Course on Geology & Geophysics, Gelendzhik, Russia, 1994		/22
*	Training Course on GF3 & oceanographic data management for the Black Sea countries, Obninsk, 1993	/20	
*	Regional Training Course on remote sensing data, ROPME area, 1993	25/12	
*	Regional Training Course on Remote sensing data, for WESTPAC & Indian Ocean countries, Bangkok, 1994		/25
*	Regional Training Course for the Mediterranean Sea countries on oceanographic data management, Malta, 1995		/20
*	Regional Training Course on the Usage of PCs in Oceanographic Data Management, Malaysia, 1993	> 100/15	
12.	Next Meeting		
*	2 IODE Officers Meetings (7 people each) late 1993, early 1995	15/15	15/15
*	IODE-XV (Dec. 1995 or early 1996)		/30
<hr/>			
Totals			
*	Meetings of IODE Subsidiary Bodies	25/52	37/143
*	Workshops (DAR and Computing Technologies)	40/20	200/60
*	Participation of IODE Officers at the Meetings of other data management groups	4/9	8/11
*	Missions	-/10	-/10
*	Publications	5/-	-/5
*	Training & technical assistance	> 385/47	> 1mln/124
		<hr/>	
		> 450/138	~ 1.5mln/353

Resolution XVII-9

IOC TSUNAMI PROGRAMME

The Intergovernmental Oceanographic Commission,

Recognizing that the IOC Tsunami Programme is a successful and important programmes of IOC, the objective of which is to save lives and property of the IOC Member States in the Pacific,

Noting that if there had been regional tsunami warning systems in operation, the effects of the tsunamis of 1992 in Nicaragua and Indonesia might have been diminished,

Acknowledging the progress made by the International Co-ordination Group for the Tsunami Warning System in the Pacific in the implementation of the ITSU programme in the areas of a Pacific Rapid Response System; in the development of education and awareness material for the general public; in the assessment of the effects of disastrous tsunamis of 1992,

Recognizing that the goals of the tsunami programme which constitute an important component of IDNDR cannot be achieved without the resources required to implement agreed-upon activities,

Noting with concern that in spite of the decision of EC-XXV, the funds allocated for the tsunami activities have not been increased, but on the contrary, diminished,

Noting further that the financial implications are 3 mln US dollars from extra-budgetary sources and 120 K expected US dollars from UNESCO/IOC Regular Funds for 1994/95,

Approves the Strategy Plan for the implementation of Phase III of the Rapid Response System Project and recommendations contained therein;

Requests the Chairman and the Secretary to explore ways of support other than through available Regular Funds: e.g. Member State contributions; invitation of international organizations; usage of regional scientific and operational facilities;

Reiterates an urgent need for the secondment of an ITIC Associate Director, and calls on Member States to submit the names of the candidates to this post to the Secretary IOC;

Invites the Director-General of UNESCO to consider the establishment within the Fourth Medium-Term Plan of an intersectorial project on tsunami preparedness with the participation of the sectors of Science, Education and Communications.

Resolution XVII-10

TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN MARINE SCIENCES

The Intergovernmental Oceanographic Commission,

A

Acknowledging the role entrusted to IOC, as the competent international organization within the United Nations system in the field of marine scientific research and ocean services,

Welcoming the statement in the Agenda 21 Chapter 17 "Protection of Oceans", supporting "the role of the IOC ..., giving special attention to the need for IOC to develop fully the strategy for providing

training and technical assistance for developing countries through its Training, Education and Mutual Assistance (TEMA) programme",

Taking into consideration that UNCED, in its Agenda 21 Chapters 34, 35, 36, 37 and 38, proposed to support endogenous capacity building, transfer of technology, and co-operation, particularly in developing countries through (i) human resource development and (ii) strengthening of institutional capacities for research and development and programme implementation,

Intending to co-operate with international and national aid agencies in establishing centres of excellence in integrated coastal and marine resource management, as proposed in Agenda 21 Chapter 17,

Noting the initiative taken by UNDP to launch the programme "Capacity 21" to assist in formulating development goals, plans and programmes, and to enhance the capacity of developing countries,

Being concerned about the existing gaps in marine science research capabilities between developed and developing regions, and also including small island countries,

Invites UNDP, the Administration of the Global Environmental Facility (GEF) and other international and regional funding agencies to use the IOC as the appropriate mechanism to implement, within its fields of competence, coastal and ocean programmes mentioned in Agenda 21 Chapter 17, in particular projects on: climate change, sea level change, marine environmental protection, living marine resources, coastal erosion and systematic observations which are identified as target areas of GEF;

Requests the Chairman IOC and the Secretary IOC to negotiate for funding with the Administrators of UNDP and GEF, and to seek possible ways and means to co-operate with "Capacity 21" and other development programmes relevant to the TEMA Programme;

Urges Member States to support these efforts through appropriate actions at national level so as to ensure *inter alia* that the use of the IOC mechanism to implement its programmes is brought to the attention of national institutions and representatives.

B

Having reviewed the proposed TEMA Action Plan for 1993-1995 and its strategy for implementation (Document IOC/INF-921),

Recalling Resolution XVI-12 by which the Assembly requested the IOC Committee for TEMA to prepare an *ad hoc* programme for promotion of the education and training of high-level specialists at the Masters and Doctoral level in basic marine sciences, and Resolution XVI-13 related to strengthening the TEMA programme,

Underlining that the main difficulties for implementing the TEMA programme are due to the lack of adequate TEMA staffing at the Secretariat and to the insufficiency of financial resources specifically devoted to the TEMA programme,

Approves the proposed TEMA Action Plan for 1993-1995 with appropriate restitution of funds for 1993 to the level planned in the former Action Plan;

Urges Member States to identify (i) existing gaps in specific subject areas of training and education, (ii) TEMA needs at national and regional levels, as outlined in the Strategy and Action Plan for 1991-1995 (Document IOC/TEMA-V/3), and to further their efforts in the preparation of national Marine Science Country Profiles (MSCPs) in order to facilitate the attainment of the objectives described above;

Requests IOC Subsidiary Bodies to assist Member States in identifying their needs for training, education and physical infrastructure and to report results to the governing bodies;

Instructs the Secretary to take steps to implement the Action Plan and to create a TEMA Operational Fund within the existing IOC Trust Fund to help ensure adequate implementation of the TEMA programme; and urges Member States to contribute to the TEMA Operational Fund;

Requests the Chairman IOC to negotiate with the Director-General of UNESCO the appointment of additional staff members to be responsible for the TEMA programme, as soon as possible;

Also urges Member States to consider the secondment of an expert in training, education and mutual assistance to the IOC Secretariat in a timely fashion to assist in the implementation of the TEMA programme and the related project proposal formulations.

Resolution XVII-11

IOC SUB-COMMISSION FOR THE CARIBBEAN AND ADJACENT REGIONS (IOCARIBE)

The Intergovernmental Oceanographic Commission,

Having considered the report of the Fourth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions with eight Recommendations,

Takes note of the report, especially the financial implications for implementation of IOCARIBE activities identified in the Revised IOCARIBE Medium-Term Plan (1993-1995) (Document IOC/INF-922), at an amount of

US\$ 1,130,000, of which about US\$ 205,000 should be borne by the UNESCO/IOC Regular Programme, US\$ 580,000 through contributions to the IOC/IOCARIBE Trust Fund and the remaining US\$ 345,000 may be covered by other organizations and donors;

Decides on the following actions on the SC-IOCARIBE-IV Recommendations and relevant activities listed as Priority Actions in the Revised Medium Term Plan (RMTP):

Recommendation SC-IOCARIBE-IV.1 (Workshop on Small Island Oceanography (Action 1 - TEMA/OPC-RMTP))

- (i) Approves the Recommendation;
- (ii) Decides to provide from the UNESCO/IOC Regular and Trust Fund budget an amount of US\$ 20,000 for the organization of the Workshop and publication of its results;
- (iii) Urges Member States of IOC, and of the Sub-Commission in particular, to provide financial support to enhance participation of experts from Small Island States to the Workshop;

Numerical modelling (Action 2 - OPC-RMTP)

- (i) Approves priority Action 2 on numerical modelling and *in situ* data comparison of OPC section of the RMTP;
- (ii) Decides to provide the UNESCO/IOC Regular and Trust Fund budget in the amount of US\$ 40,000 for implementation of this action in 1994/95;
- (iii) Urges Member States of the Sub-Commission to provide financial support in an amount of US\$ 20,000 to complete the requirements of this action.

Historical climatology (Action 3 - OPC-RMTP)

- (i) Approves priority Action 3 on historical climatology and archived data of OPC section of the RMTP;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund Budget an amount of US\$ 20,000 for implementation of this action;
- (iii) Urges Member States of the Sub-Commission to provide financial support in an amount of US\$ 10,000 to complete the requirements of this action;

Four new tide gauges (Action 4 - OPC-RMTP)

- (i) Approves priority Action 4 on acquisition and installation of four new tide gauges in the Caribbean, of the OPC section of the RMTP;
- (ii) Decides to provide from the IOC Trust Fund budget an amount of US\$ 13,000 for implementation of this action;
- (iii) Urges Member States of the Sub-Commission to provide financial support in the amount of US\$ 10,000 to complete the requirements of this action;

Training Workshop on Data Sampling and Processing (Action 5 - TEMA/OPC-RMTP)

- (i) Approves priority Action 5 on organizing a Training Workshop on Data Sampling and Processing, of the OPC section of the RMTP;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 20,000 for implementation of this action in 1994;
- (iii) Urges Member States of IOC to provide financial support in an amount of US\$ 20,000 to complete the requirements of this action;

Meetings of the IOCARIBE Group of Experts on OPC (Action 6 - OPC-RMTP)

- (i) Approves priority Action 6 on yearly meetings of the IOCARIBE Group of Experts on OPC, on the corresponding section of the RMTP;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 20,000 for implementation of this action;
- (iii) Urges Member States of the Sub-commission to provide financial support in an amount of US\$ 10,000 to complete the requirements of this action;

**Recommendation SC-IOCARIBE-IV.2
(Marine Pollution Research and Monitoring)**

- (i) Approves the Recommendation;
- (ii) Decides to provide, subject to availability of funds, from the IOC/IOCARIBE Trust Fund budget an amount of US\$ 376,000 for implementation of actions over 1993/95 related to marine debris, oil pollution, pesticides and eutrophication mentioned in the Recommendation and listed in the MPRM section of the RMTP;
- (iii) Urges Member States of IOC and bi-lateral and multi-lateral sources of funding to provide additional financial support in an amount of US\$ 255,000 to complete the requirements of the actions mentioned in (ii);

Recommendation SC-IOCARIBE-IV.3
(Regional Component of the IOC-UN (OALOS) Programme on
• Ocean Science in Relation to Non-Living Resources (OSNLR))

- (i) Approves the Recommendation and relevant priority actions of the OSNLR section of the RMTP;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 51,000 for implementation of these actions in 1993/94/95;
- (iii) Urges Member States of the Sub-Commission and bi-lateral and multi-lateral funding agencies to provide additional support for further developing the IOCARIBE/OSNLR programme;

Recommendation SC-IOCARIBE-IV.4
(Integrated Management and Sustainable Development of Coastal
Areas, Including Exclusive Economic Zones)

- (i) Approves the Recommendation;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 15,000 for implementation of the recommendation;

Recommendation SC-IOCARIBE-IV.5
(Regional Component of the IOC-FAO Programme on OSLR)

- (i) Approves the Recommendation;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 20,000 for implementation of the Recommendation;
- (iii) Urges Member States of the Sub-Commission to organize OSLR National Technical Committees and to nominate OSLR contact points;

Recommendation SC-IOCARIBE-IV.6
(Regional Component of the Global Ocean Observing System (GOOS-IOCARIBE))

- (i) Approves the Recommendation;
- (ii) Decides to provide from the IOC/IOCARIBE Trust Fund, subject to availability, an amount of US\$ 30,000 for implementation of the Recommendation;
- (iii) Urges Member States of the Sub-Commission to provide additional financial support in an amount of US\$ 15,000 to complete the requirements as well as to establish national GOOS co-ordination mechanisms and nominate National Focal Points for GOOS.

Recommendation SC-IOCARIBE-IV.7
(Strengthening of TEMA and Action Plan for TEMA IOCARIBE)

- (i) Approves the Recommendation;
- (ii) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget an amount of US\$ 10,000 for implementation of the Recommendation;

**Recommendation SC-IOCARIBE-IV.8
(Strengthening of the IOCARIBE Secretariat)**

- (i) Approves the Recommendation;
- (ii) Urges the Chairman and the Secretary IOC to urgently initiate consultations with the Director General of UNESCO to:
 - a) ensure retention of the IOCARIBE Secretary position in Cartagena,
 - b) consider transforming the current IOCARIBE Secretary position P-5, into two positions at the P-4 and P-3 levels to ensure a minimum level of adequate permanent staffing at the IOCARIBE Secretariat;
- (iii) Urges further the Member States of IOC and IOCARIBE to provide contributions to the IOC/IOCARIBE Trust Fund so as to ensure retention of functions related to the position of the IOCARIBE Secretary even on an interim basis.
- (iv) Decides to provide from the UNESCO-IOC Regular and Trust Fund budget, subject to availability of funds, an amount of US\$ 150,200 for implementation of the Recommendation including operational running costs for the Secretariat, for the period 1993/94/95.

Resolution XVII-12

IOC SUB-COMMISSION FOR THE WESTERN PACIFIC (WESTPAC)

The Intergovernmental Oceanographic Commission,

Having considered the Report and Recommendations of the Second Session of the IOC Sub-Commission for the Western Pacific,

Takes note of the Report, especially the financial implication for implementation of the regional activities, during the next period (1993-1995) at an amount of US\$ 384,000 of which US \$ 138,000 should be born by the IOC and the remaining should be covered by other organizations and donors,

Expresses its great appreciation to the Government of Thailand for the generous support it has offered to the Regional Secretariat and for its assistance in progressing arrangements in respect of the required formal agreement between the Government and UNESCO;

Decides to take the following action on the recommendations:

**Recommendation SC-WESTPAC-II.1
(International IOC-WESTPAC Marine Science Symposium)**

- (i) Approves the recommendation, including the establishment of the scientific planning committee;
- (ii) Instructs the Secretary to provide, within available financial resources, support for the Symposium and to take appropriate action to invite other regional and global international bodies to support and co-sponsor the symposium;

**Recommendation SC-WESTPAC-II.2
(Programme of Work 1993-1996)**

- (i) Approves the Recommendation;

- (ii) Decides to provide from the IOC Regular and Trust Fund budget an amount equal to about 30% of the allocation for regional activities for 1994/1995 towards the support of the IOC Regional Secretariat for WESTPAC and the implementation of the programme as adopted by the Sub-Commission;
- (iii) Urges Member States of IOC and the Sub-Commission in particular, to provide further financial support through the IOC Trust Fund dedicated to the WESTPAC Sub-Commission programme implementation.

**Recommendation SC-WESTPAC-II.3
(Establishment of an IOC Regional Secretariat for the
Sub-Commission for the Western Pacific)**

- (i) Notes the recommendation and endorses it subject to availability of sufficient financial and staffing resources;
- (ii) Instructs the Chairman and First Vice-Chairman to bring this matter to the attention of the Director-General of UNESCO and invite him to provide the required additional position for the IOC Secretariat to be stationed in Bangkok, Thailand;
- (iii) Urges Member States to provide support to the Secretariat through the IOC Trust Fund dedicated to the IOC Regional Secretariat for WESTPAC and through secondment of professional staff;
- (iv) Urges Member States to help ensure through appropriate means that the required UNESCO(IOC) staff be made available for the Regional Secretariat as soon as possible;

**Recommendation SC-WESTPAC-II.4
(Date and Place of the Next Session)**

- (i) Approves the recommendation;
- (ii) Instructs the Secretary IOC to take appropriate action in consultation with the officers of the Sub-Commission.

Resolution XVII-13

**IOC REGIONAL COMMITTEE FOR THE CO-OPERATIVE INVESTIGATION
IN THE NORTHERN AND CENTRAL WESTERN INDIAN OCEAN (IOCINCWIO)**

The Intergovernmental Oceanographic Commission,

Having considered the Report and Recommendations of the Third Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean,

Takes note of the Report, especially recalling the financial implications of the implementation of the regional activities, during the intersessional period 1993-95 in the amount of \$ 400.000, of which about \$ 80.000 should be born by the IOC and the remaining should be covered by other organizations and donors;

Expressing its appreciation to the Government of Belgium, to the Swedish Agency for Research Co-operation with Developing Countries (SAREC) for the support provided to several activities in the region, and to the Government of Germany for the support provided towards the International Bathymetric Chart of the Western Indian Ocean (IBCWIO),

Decides to take the following action on the Recommendations:

Recommendation IOCINCWIO-III.1 (IBCWIO)

- (i) Approves the Recommendation.

**Recommendation IOCINCWIO-III.2
(Programme of work 1993-1995)**

- (i) Approves the Recommendation;
- (ii) Decides to provide from the IOC Regular and Trust Fund budget an amount equal to about 10% of the allocation for regional activities for 1994/95 towards the implementation of the programme as adopted by the Regional Committee;
- (iii) Urges Member States of the IOC to provide further support, dedicated to the IOCINCWIO programme implementation and capacity building in the region, through the IOC Trust Fund and IOC-VCP.

Resolution XVII-14

IOC REGIONAL COMMITTEE FOR THE CENTRAL EASTERN ATLANTIC (IOCEA)

The Intergovernmental Oceanographic Commission,

Having considered the Report and the Recommendation of the Third Session of the IOC Regional Committee for the Central Eastern Atlantic,

Takes note of the Report, especially the financial implications for the implementation of the regional activities identified in the Table annexed to Recommendation IOCEA-III.1 of the report, for the next intersessional period 1993-1996 at the amount of about \$ 250.000, of which about \$ 80.000 should be born by the IOC and the remaining should be covered by other organizations and donors;

Decides to take the following action on the recommendation:

**Recommendation IOCEA-III.1
(Programme of work 1993-1996)**

- (i) Approves the Recommendation;
- (ii) Decides to provide from the IOC Regular and Trust Fund budget an amount equal to about 10 % of the allocation for regional activities for 1994/95 towards the implementation of the programme as adopted by the Regional Committee;
- (iii) Urges Member States of the IOC to provide further financial contributions to the IOC Trust Fund and support through IOC-VCP, dedicated towards the IOCEA programme implementation and capacity building in the region.

Resolution XVII-15

REGIONAL BLACK SEA CO-OPERATION PROGRAMME

The Intergovernmental Oceanographic Commission,

Recalling Resolution XVI-7 "Black Sea Project",

Recalling further the implementation of decision of the IOC Executive Council (document IOC/EC-XXV/3, paras 84 and 85) to take action towards sponsorship of the "Co-operative Marine Science Programme for the Black Sea (COMSBLACK)" (Document IOC/INF-924) and the support provided by IOC,

Recognizing the urgency of an international effort aimed at the establishment of a scientific basis in support of the effective integrated management of the Black Sea,

Recognizing also that special attention had already been given to specific regional requirements of the Black Sea region, e.g., within the International Oceanographic Data and Information Exchange (IODE) and the Global Investigation of Pollution in the Marine Environment (GIPME) programmes,

Noting the UNESCO support to various intersectorial co-operative initiatives within the Black Sea region, in particular the "UNESCO-Chernobyl" and the "Blue Danube" project,

Noting also the significance of the Convention for the Protection of the Black Sea (Bucharest, Romania, 23 April 1992), which is in process of ratification,

Expresses its appreciation to the countries from the region and several countries and donors from outside the region for the support provided to the COMSBLACK initiative;

Reaffirms the decision taken by EC-XXV to continue actions for IOC to support and sponsor COMSBLACK within the context of GIPME;

Instructs the IOC Secretary to explore ways of assistance in addition to available UNESCO Regular Programme funds, in particular through international and regional funding agencies, to support development of a workplan by a Regional Association for the Black Sea, with a view to establishing a Regional Committee for the Black Sea as an IOC regional subsidiary body for co-operation in this region;

Requests the IOC Executive Council, at its Twenty-seventh session, to consider the further implementation of this resolution in the light of possible co-operation with other international and regional bodies.

Resolution XVII-16

INTERNATIONAL CONFERENCE ON MARINE SCIENTIFIC RESEARCH AND INTEGRATED COASTAL AND OCEAN MANAGEMENT FOR SUSTAINABLE DEVELOPMENT

The Intergovernmental Oceanographic Commission,

Recalling that the Intergovernmental Conference on Oceanographic Research (Copenhagen, July 1960) led to the establishment of IOC within UNESCO, and represents a historical event in the concerted action by States and in co-operation among international organizations concerned with marine research,

Recalling also the intention of IOC to organize an "international conference on the theme of marine scientific research, ocean services and related aspects, bearing in mind possible follow-up to UNCED" (para. 455 of the Summary Report of the Sixteenth Session of the Assembly, March 1991 and para. 306 of the Summary Report of the Twenty-fifth Session of the Executive Council),

Accepts the kind offer of the Portuguese Government to support and host such an international conference in Lisbon, preferably in November, in 1994;

Recommends that the Conference focus on: (i) ocean research and services for integrated coastal and ocean management with a view to achieving sustainable development; (ii) related capacity-building and institutional arrangements, and (iii) consideration of the possibility for an Ocean Charter or Declaration and its elements aimed at increasing the awareness of Governments, decision-makers and public opinion of the role of the oceans in environmental changes and to the need for new forms of international co-operation and solidarity, as recommended by UNCED and Agenda 21;

Instructs the Secretary to (i) take the necessary steps to establish a Scientific Steering Committee for the Conference; (ii) finalize arrangements with the Portuguese authorities regarding the organization of the Conference;

(iii) bring the conclusions arising from the Conference to the next Assembly for their information and consideration in the context of the follow-up of UNCED;

Invites UNESCO and other UN organizations as well as other competent international governmental and non-governmental organizations to co-sponsor the Conference upon completion of the preparatory actions (as defined in the previous paragraph).

Financial Implications: None

Resolution XVII-17

1998 - THE INTERNATIONAL YEAR OF THE OCEAN

The Intergovernmental Oceanographic Commission,

Mindful that the oceans and all seas and adjacent coastal areas form an integral whole that is an essential component of the global life-support system and a positive asset presenting opportunities for sustainable development, if adequately managed on the basis of the best available scientific knowledge, the respect of the laws of nature and the legitimate interests of the human societies concerned,

Recognizing that the oceans play a decisive role in shaping the life of this planet,

Recalling that the economic value of the Ocean is enormous and is a potentially significant source of food, energy, minerals and various uses (tourism, navigation, etc.) of vital importance to individual States and the world community,

Recalling further that the majority of the world population is located in the coastal area, with increasing heavy impact and pressure on marine natural resources, and the quality of the marine environment, especially in the coastal zone,

Noting that integral management of the coastal and ocean space and of the multiple uses and resources of the marine environment depend on access to information, and a great effort of public education and scientific awareness, as recognized in the Declaration of Rio de Janeiro and in the relevant Chapters of Agenda 21, particularly Chapter 17, adopted by the United Nations Conference on Environment and Development (Rio de Janeiro, 1992),

Taking into account that the United Nations Convention on the Law of the Sea (signed in 1982) is already inspiring the New Ocean Regime through customary international law,

Recognizing that the implementation of the objectives of Agenda 21 and the principles of UNCLOS call for new levels of international co-operation by governmental and non-governmental organizations, and the development of new forms of solidarity and ethics,

Recognizing further that the required partnership among nations and peoples for the protection of the marine environment requires a better understanding of the complex natural processes and interaction between the ocean and mankind, a new culture based on the respect of nature and the interests of future generations,

Noting that the International Exposition on "Ocean - Heritage for the Future", will be held in Lisbon in 1998, and that some of the international organizations of the UN System, as well as other intergovernmental and non-governmental organizations are expected to be associated with this endeavour,

Being convinced that this event will offer an opportunity for all nations to undertake a large-scale effort of education and public information enhanced by scientific, cultural and educative activities to promote a better understanding of the ocean and its resources in a perspective of sustainable development,

Being aware that Resolution 1980(6-) of ECOSOC, recognized the contribution that the celebration of international years can make to the furtherance of international co-operation and understanding in accordance with the guidelines therein,

Invites the Director-General of UNESCO to present to the 27th Session of the General Conference of the Organization, a proposal that 1998 be declared the International Year of the Ocean;

Invites UNESCO, through ECOSOC, and on the understanding that such a declaration will imply no costs to UNESCO, IOC or other international organizations of the UN system, to take the necessary steps to mobilize the support of Member States, of international organizations concerned, as well as other appropriate Governmental and Non-governmental Organizations, regional bodies and programmes, to support and collaborate in this initiative.

Resolution XVII-18

IMPLEMENTATION OF UNCED DECISIONS RELEVANT TO THE IOC

The Intergovernmental Oceanographic Commission,

Recalling Resolution XVI-16 "Preparation for the 1992 United Nations Conference on Environment and Development",

Acknowledging the general responsibilities that the IOC accepts for itself in relation to the decisions of the United Nations Conference on Environment and Development (UNCED) and the need for IOC to respond effectively to these, including:

- (i) Agenda 21, particularly Chapter 17, with its seven Programme areas, namely:
 - A. Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones,
 - B. Marine environmental protection,
 - C. Sustainable use and conservation of marine living resources of the high seas,
 - D. Sustainable use and conservation of marine living resources under national jurisdiction,
 - E. Addressing critical uncertainties for the management of the marine environment and climate change,
 - F. Strengthening international, including regional, co-operation and co-ordination,
 - G. Sustainable development of small islands;
- (ii) Related Chapters of Agenda 21 addressing *inter alia* Capacity Building, Science for Sustainable Development and International Institutional Arrangements;
- (iii) Framework Convention on Climate Change;
- (iv) Convention on Biological Diversity,

Acknowledging further certain specific responsibilities conferred upon it by UNCED, particularly in relation to the Global Ocean Observing System (GOOS), the IOC Training, Education and Mutual Assistance Programme (TEMA) and the role of the oceans in the global carbon cycle,

Also considering the unique role of the IOC as the only intergovernmental body wholly committed to coastal and ocean sciences through programmes of research, systematic ocean observations, related services, and Capacity Building in developing nations,

Noting the institutional follow-up to UNCED including creation of the UN Commission on Sustainable Development (CSD) and the requirement of the IOC to report its progress on UNCED follow-up to the Commission,

Recalling the intention of the IOC to organize an international conference on on marine scientific research and integrated coastal and ocean management for sustainable development, and noting with satisfaction the kind offer of the Portuguese Government to support and host such an international conference in Lisbon, preferably in November, 1994,

A

- * **Decides** to establish an *ad hoc* Intersessional Working Group chaired by the Chairman of IOC and comprised of Chairmen of IOC scientific, technical and regional subsidiary bodies, with terms of reference appended in Annex I. The Group is expected to work mainly by correspondence, and will make an interim report to the Twenty-Seventh Session of the Executive Council and a final report to the Eighteenth Session of the Assembly. The Working Group will:
 - (i) compile, review and assess IOC activities pertaining to the implementation of UNCED decisions;
 - (ii) explore the implications of UNCED for the programmes and budget of IOC in the medium and long-term, taking into account the goals, strategies and activities on specific issues as outlined in Annex 1 to the Action Paper (Document IOC-XVII/8 Annex 1);

*See also relevant proposals of DOSS in Resolution XVII-20

- (iii) make recommendations to the IOC Executive Council and Assembly for their consideration in preparing the Third Medium-Term Plan;
- (iv) further develop the IOC Draft UNCED Action Plan (Document IOC-XVII/8 Annex 1), with initial emphasis on selected high-priority activities that might be proposed for extra-budgetary funding in the near future;
- (v) consider measures to be taken for establishing working links between IOC and the FCCC subsidiary bodies aimed at providing updated information on assessment and forecast of sea-level rise trends and CO₂ absorption and emission by the ocean.

B

Calls on Member States to:

- (i) inform the *ad hoc* Intersessional Working Group, through the Secretary and the Chairman, as soon as possible of their national plans to address oceans issues in response to UNCED, especially those undertaken in cooperation with IOC;
- (ii) also inform the Working Group, through the Secretary and the Chairman, regarding their views to be taken into account in the further development of the IOC Draft UNCED Action Plan (Document IOC-XVII/8 Annex 1);
- (iii) increase their cooperation within the regional subsidiary bodies of IOC in order to address coastal and ocean issues of mutual concern related to integrated management and sustainable development;
- (iv) provide focused TEMA support to developing countries for capacity-building, including human resources, in the area of ocean science and services as a basis for integrated management and sustainable development;
- (v) support the further development and implementation of GOOS,
- (vi) consider increased support to the IOC Trust Fund for implementation of IOC actions related to UNCED;
- (vii) consider the implications of UNCLOS for actions taken in response to UNCED;
- (viii) consider supporting such actions as, for example, Proclamation of an International Year of the Ocean and the possibility of an Ocean Charter or Declaration.

C

Invites other relevant international organizations and institutions, particularly those involved in financing, to:

- (i) engage in cooperative work with the IOC in matters related to implementation of UNCED objectives;
- (ii) assist in accelerating the development and implementation of GOOS as a direct response to data and information requirements for high-priority UNCED issues such as Integrated Coastal Area Management, Protection of the Marine Environment, Climate Variability and Impacts, the Role of Oceans in Climate and Global Systems, Changes in UV Radiation, Living Marine Resources and Marine Biological Diversity.

D

Requests IOC subsidiary bodies to:

- (i) provide information on programme activities to the *ad hoc* Intersessional Working Group as soon as possible, including an inventory of current and planned activities related to UNCED follow-up;
- (ii) carry out future actions, individually as well as in cooperation with related IOC subsidiary bodies and programmes, in a manner consistent with the decisions agreed upon at UNCED, and to use Document IOC-XVII/8 Annex 1 as a general guide for their activities;
- (iii) undertake, as a high priority, the dissemination of existing manuals, methods, techniques, and instructional materials on scientific issues relevant to resource management and sustainable development, and prepare missing ones, preferably in all IOC working languages;
- (iv) provide assistance that may be needed for capacity building, and make available scientific and technical guidance and information to national authorities, especially in developing countries;
- (v) determine ways and means of increasing public awareness of the importance of the oceans to sustainable development.

E

Instructs the Secretary IOC to:

- (i) assist the *ad hoc* Intersessional Working Group to begin its work mainly by correspondence as soon as possible, and provide appropriate support as needed in the intersessional period, including forwarding to the Working Group all relevant material received from Member States regarding their views and plans for UNCED follow-up;
- (ii) provide information to the Working Group regarding actions taken within the Commission and its subsidiary bodies, including those taken in conjunction with the ICSPRO agencies, other intergovernmental bodies such as UNEP, and international Non-Governmental Organizations like ICSU, and actions within IOC Member States, which are relevant to the implementation of ocean-related activities under Agenda 21;
- (iii) continue consultations with funding agencies regarding potential support for projects within the competence of IOC which are related to UNCED;
- (iv) report to the Commission on Sustainable Development, to other interested international/intergovernmental bodies and to the IOC Governing Bodies concerning progress in follow-up to UNCED.

Financial implications: Depends upon meeting(s) of working groups and subsidiary bodies or parts thereof; (at most for 1993 US\$30.000)

Annex to Resolution XVII-18

**Terms of Reference of the *ad hoc* Intersessional Working Group
on IOC Follow-up to UNCED**

The *ad hoc* Intersessional Working Group will be comprised of the Chairmen of IOC scientific, technical and regional subsidiary bodies these Terms of Reference instruct the Group to:

- (i) compile, review and assess IOC activities pertaining to the implementation of UNCED decisions;
- (ii) explore the implications of UNCED for the programmes and budget of IOC in the immediate, medium and long-term, taking into account the goals, strategies and activities on specific issues as outlined in Annex 1 to the Action Paper (IOC-XVII/8 Annex 1);
- (iii) further develop the IOC Draft UNCED Action Plan (Document IOC-XVII/8 Annex 1), with initial emphasis on selected high-priority activities that might be proposed for extra-budgetary funding in the near future;
- (iv) make an interim report to the Twenty-seventh Session of the Executive Council and a final report with recommendations to the Eighteenth Session of the Assembly for their consideration in preparing the UNESCO Fourth Medium-Term Plan.

This Working Group will work mainly by correspondence.

Resolution XVII-19

PROGRAMME AND BUDGET FOR 1994-1995

The Intergovernmental Oceanographic Commission,

A

Having considered the Proposal on the Draft Programme and Budget for 1994-1995, contained in Document IOC-XVII/8 Annex 4, and particularly its Table I,

Noting the statement of the Representative of the Director-General in regard to the authority of the Secretary IOC as Director of the unified marine science programme as executed both at headquarters and in regional offices,

Recalling that the IOC Programme and Budget includes contributions by Member States through: (i) UNESCO (Draft 27 C/5: Sub-programme II.2.4); and through (ii) the IOC Trust Fund and other sources,

Reiterating that additional resources are required for sustained, satisfactory implementation for all of the IOC programmes,

Approves, as a basis for future planning, the proposal for the Programme and Budget for 1994-95.

B

With regard to Member States,

Emphasizing the important support made available to the Commission through voluntary contributions of Member States to the IOC Trust Fund, secondment of staff and in-kind support which substantially contributes to effective implementation of IOC programmes,

Being convinced that the IOC within the framework of its long-term programmes and particular the Global Ocean Observing System, and its related ocean services and TEMA components will effectively respond to UNCFD requirements under Agenda 21 with special reference to Chapter 17,

Acknowledges, with appreciation, the advance indications by Member States of further contributions and support;

Urges Member States to increase their efforts to provide adequate funding and staff, through contributions to the IOC Trust Fund and other means, if possible with indication of commitment over a period of time;

Calls on Member States in their proposals to donors to ensure a high profile for IOC programmes in extra-budgetary funding sources, especially the Global Environmental Facility and the United Nations Development Programme;

Instructs the Secretary to implement progressively the IOC Programme of Work and Budget, taking into account decisions of the Assembly and Executive Council, priority areas related to studies of ocean dynamics and climate, and studies of marine living and non-living resources and related conditions as regards the health of the ocean, global and coastal ocean observing system development and related human resource and infrastructure development;

Further instructs the Secretary to draw to the attention of the Twenty-seventh Session of the Executive Council any difficulties regarding funding and staff resources so that planned programme implementation may be rephased should the circumstances so require.

C

With regard to UNESCO,

Having received with appreciation the statement from the Director-General that an increase in funding has been foreseen for activities within the Draft 27C/5, and the commitment of UNESCO to provide two additional posts for the IOC within the staff establishment for 1994-1995,

Noting with appreciation the positive results of the periodic consultations between the Chairman IOC and the Director-General,

Reaffirms its commitment to ensure coherence and increased efficiency in implementing a single, unified programme, while providing UNESCO with specific advice;

Calls on Member States to take energetic action through appropriate national channels so as to ensure that the Commission's views on programme and budget matters are taken into account during debate at the UNESCO Executive Board and General Conference;

Invites the Director-General to transmit this Resolution to the 141st and 142nd Sessions of the UNESCO Executive Board and to the Twenty-seventh Session of the UNESCO General Conference.

Resolution XVII-20

**AD HOC STUDY GROUP ON IOC DEVELOPMENT, OPERATIONS,
STRUCTURE AND STATUTES (DOSS)**

The Intergovernmental Oceanographic Commission,

Recalling Resolution XVI-19 by which the Assembly, at its Sixteenth Session, established an *ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS),

Having considered the report and the proposals therein presented by the *ad hoc* Study Group in the Summary Report of its Third Session (Document IOC/DOSS-III/3),

Expressing its deep appreciation to the Chairman and the Members of DOSS for fulfilling their task and for the quality of the studies which covered a wide spectrum of the Commission's activities and concerns,

Approves those proposals given in Part I of the Annex to this Resolution, paying due attention to the present financial constraints of UNESCO and the IOC;

Decides that the proposals listed in Part II of the Annex to this Resolution, concerning an IOC Pledging System, geographical distribution, and revision of the IOC Statutes and the Rules of Procedure require further study and consultation;

Instructs the Secretary to consult all Member States through a circular letter to solicit their view on the proposals contained in Part II of the Annex, with due consideration to previous studies and conclusions as referenced in the DOSS report, and debate during the Seventeenth Session of the Assembly on these proposals;

Further instructs the Secretary to ensure that the circular letter is sent as soon as possible in all working languages of the Commission;

Urges Member States to provide their views on this matter and to respond to the circular letter within four months of its receipt;

Requests the Chairman to establish, should he feel necessary, an *ad hoc* group of experts to assist with the analysis of replies and the formulation of proposals on major issues concerning the future of the Commission with a view to submitting them to the Twenty-seventh Session of the Executive Council;

Also instructs the Secretary to ensure distribution of the analysis and possible new proposals at least three months in advance of the Twenty-seventh Session of the Executive Council;

Further requests the Chairman and the Secretary, should progress in the work so justify, to arrange for a preparatory session, open to all Member States of the Commission, prior to the Twenty-seventh Session of the Executive Council, to consider the proposals on the future of the Commission;

Authorizes the Twenty-seventh Session of the Executive Council to take further action regarding proposals to be submitted to the Eighteenth Session of the Assembly, including the possible establishment of one or more *ad hoc* bodies for this purpose.

Annex to Resolution XVII-20

PART I - Approved

RECOGNITION OF THE IOC
(based on para. 35 of the DOSS Report¹)

The Assembly,

1. **Reaffirms** the status of the IOC as a body with functional autonomy within UNESCO, dealing in an integrated and interdisciplinary way with ocean research, systematic ocean observations, related ocean services and capacity building (TEMA) so as to cover the whole of the ocean including the coastal zone and its interactions with the atmosphere and the land;
2. **encourages**, as an urgent matter, Member States to establish or strengthen appropriate national mechanisms to liaise with and respond to IOC, and to ensure an intersectoral consideration of ocean affairs at the national level with a parallel intersectoral feedback to the international sphere;

SUPPLEMENTARY ACTION REQUIRED

- a) *The Secretary should solicit the views of Member States as to why they have not been able to respond effectively to Resolution XII-8 and prepare a report for submission to the Executive Council.*
- b) *The list of National Oceanographic Committees should be updated and distributed to all IOC national contacts.*
3. **advises** that IOC national contacts (in National Oceanographic Commissions or equivalent bodies) should establish close working relationships with the national counterparts of other oceans-related UN organizations and programmes such as WMO, IMO, the UNEP Regional Seas programme, and FAO's fisheries programmes;

SUPPLEMENTARY ACTION REQUIRED

- a) *Preparation of a consolidated list of all UN ocean and coastal area related meetings.*
- b) *Preparation, through ICSPRO, of a combined list of national contacts and distribution of such to all contacts*
4. **reiterates** the position that if the global and corresponding interacting national mechanism are to function properly, the necessary means and resources must be provided;
[These matters are dealt with under items 10-13 of this Annex.]
5. **instructs** the Chairman and Vice-Chairmen to discuss with the Director-General of UNESCO concrete measures to reinforce the status of the Commission, including the upgrading of the post of Secretary IOC to the ADG level which would, *inter alia*, enhance the negotiating authority of the Secretary with external bodies.

DEVELOPMENT AND IMPLEMENTATION OF IOC PROGRAMMES
(based on para. 46 of the DOSS Report)

6. **Reaffirms** that the IOC should continue a balanced programme of science, service and training, education and mutual assistance, taking into account the particular interest and potential for participation of developing countries in ocean services and human resource development;

¹ Summary Report of the Third Session of the *ad hoc* Study Group on IOC Development, Operations, Structure and Functions (DOSS) (Document IOC/DOSS-III/3)

7. instructs the Secretary to undertake development of a comprehensive IOC Action Plan on a regular basis using the following guidelines and procedures, and thus providing the framework required in the IOC Strategy for the Future:
- a) the present IOC Statutes, Articles 1, 2 and 3, taking into account current issues;
 - b) the ICSPRO Agreement and the related role of the IOC as a joint specialized mechanism;
 - c) the responsibilities of the IOC as the marine science arm of UNESCO;
 - d) joint programming with other UN organizations and programmes based on formal agreements;
 - e) the responsibilities of the IOC identified through global and regional conferences, including the SWCC, UNCED, and legal instruments, in particular UNCLOS, Framework Convention on Climate Change, and Biodiversity Convention;
 - f) the requirement for the IOC to respond to the needs for training, education, mutual assistance and capacity building through different mechanisms and at different levels, and related regional needs;
 - g) the available financial and human resources in the secretariat, from UNESCO, the IOC Trust Fund and other extra-budgetary sources;
 - h) a fair and balanced development among substantive (scientific, technical) and regional subsidiary bodies;
 - i) the principle of consensus.
8. requires that all subsidiary bodies produce forecasts of programme implementation and related resource requirements in order to assist the Assembly in developing a Comprehensive Action Plan;

SUPPLEMENTARY ACTION REQUIRED

Secretary to ensure that Agendas and Reports of all subsidiary bodies reflect this requirement.

9. instructs the Secretary and the Officers of the Commission to prepare a programme and budget for consideration by the Assembly, on the basis of recommendations from subsidiary bodies, and consistent with the approved priorities.

FINANCIAL SUPPORT FOR THE IOC
(based on para. 66 of the DOSS Report)

10. Decides that one means of achieving greater dependability in IOC resources, within the principle that the Commission is a body with functional autonomy established within UNESCO, would be to seek a "subvention" or "grant-in-aid" relationship with its parent body;
11. agrees that the IOC should campaign actively, at officer, delegate and secretariat levels, to achieve a subvention of at least 3% of UNESCO's budget as a basis for long term planning;
12. instructs the Chairman and First Vice-Chairman to prepare a background paper to support the case for the 3% subvention, and provide it to the Twenty-seventh Session of the Executive Council for the future use of all IOC national representatives;
13. instructs the IOC Secretary to continue to present to the IOC Assembly a proposed programme and budget that includes anticipated funding from UNESCO and contribution to the IOC Trust Fund from Member States non-Member States of UNESCO, as well as other resources.

ORGANIZATION AND STRUCTURE OF THE IOC
(based on paras. 105 to 110 of the DOSS Report)

14. **Agrees** that during sessions of the Assembly,
- (i) Following presentation of the Report of the Secretary on Intersessional Activities, there should be an extended Plenary Session providing the opportunity for any Member State wishing to do so, to comment on the whole of the programme, including pertinent national activities. It might be both useful and appropriate to specify a time limit for such presentations;
 - (ii) Discussion of individual agenda items in plenary should concentrate on policy issues, and actions requiring decisions by the Assembly including those based on the draft resolutions;
 - (iii) The Anton Bruun Memorial Lecture(s) should be programmed early during the Assembly and could be restricted to one lecture on a topic of relevance to the Commission's work.
15. **decides** that:
- (i) The Agenda of the Executive Council should be restricted primarily to those issues concerning the programme implementation of the Commission requiring decisions or management actions;
 - (ii) Each subsidiary body should provide an executive summary of its deliberations, to which should be attached: an Action Plan, with a proposed project implementation schedule; a summary of financial and staff requirements, including indications of Member State commitments; draft resolution(s) concerning any decisions required of the Assembly;
 - (iii) The Secretary shall prepare a reduced Action Paper addressing the items not covered through the subsidiary bodies reports which provide the background information for the item; the analysis and proposals by the Secretary; the request of actions by the Assembly.
16. **agrees** that:
- (i) The Officers of the Commission, in consultation with the Secretary, should propose an elaborated set of responsibilities for the Chairman and the Vice-Chairmen, including interface with other bodies and regional organizations;
 - (ii) The Officers should provide their views on the need for periodic consultations as a means of providing guidance to the Secretary between sessions of the Executive Council and the Assembly.
17. **instructs** the Secretary to formally request the Director-General to undertake a study on the status of IOC seconded staff within the organization with a view to clarifying administrative and legal arrangements so as to facilitate secondment of staff from Member States and organizations;
18. **decides** that, as a means of ensuring the continued relevance of Subsidiary Bodies and their programmes:
- (i) All new Subsidiary Bodies and programmes should be approved for a finite period;
 - (ii) All existing Subsidiary Bodies and programmes should be reviewed on a schedule and by means recommended by the Secretary and approved by the Assembly. Decisions to continue existing Subsidiary Bodies and programmes should be made on the basis of their relevance to the IOC Action Plan.

PART II - Further Study

19. The Assembly decides that the following subjects require further study and consultation:

- 1. An IOC Pledging System as described in para. 66 (iv) a) and b) of the DOSS Report;**
- 2. Geographic Distribution as described in para. 111 of the DOSS Report;**
- 3. Proposals for changing the format and content of the IOC Statutes as described in para. 144 of the DOSS Report;**
- 4. Proposed amendments to the Rules of Procedure as described in paras. 145-185 of the DOSS Report.**
- 5. Implications of a possible treaty organization for the IOC as described in paras. 62 and 187 of the DOSS Report.**

· ANNEX III

ADDRESSES

**A. Opening Address by Professor Manuel M. Murillo
Chairman, Intergovernmental Oceanographic Commission (IOC)**

on 25 February 1993

Professor Federico Mayor, Director-General of UNESCO,
Distinguished Delegates,
Ladies and Gentlemen,

It is an extremely great pleasure for me to welcome you most cordially to this Seventeenth Session of the Assembly of the Intergovernmental Oceanographic Commission. I am sure that the distinguished delegates attending are determined to contribute to the success of our work and keen for their contributions to lead to decisions that will improve the programmes and activities of the Commission and make them more effective. Our common concern is to meet in a timely and satisfactory manner the expectations of Member States and the international community at this particularly important moment for vitalizing the international co-operation on which measures to protect the world's oceans, seas and adjacent coastal areas depend.

It is fundamentally important that our work lead to decisions that will strengthen the IOC, reasserting its leadership in world and regional oceanographic research programmes, making operational a global ocean observation system to meet information needs in respect of environmental changes worldwide, shouldering its responsibility for the management of educational, training and technical assistance programmes, and facilitating access to information and to the data produced by research and monitoring programmes.

You will no doubt have had the opportunity to analyze and evaluate the activities conducted since the last session, which are described in detail in document IOC-XVII/6. For that reason, and owing to the constraints of time, I will with your leave only touch on some subjects that are of special importance in the context of the agenda of this session of the Assembly.

The United Nations Conference on Environment and Development held in Brazil in June 1992 was a joint undertaking by the world community in which the United Nations system collaborated and in which UNESCO played an outstanding role. The IOC's participation in its own right in UNCED, both in the meetings of the preparatory Committee and in the Conference itself, was an event of real significance. The Commission's work based on Resolutions EC-XXIII.3 and IOC/XVI-16 was given full coverage, thanks to the active participation of the Secretary, Dr Gunnar Kullenberg, assisted by Dr Klaus Voigt, and timely action by the First Vice-Chairman, Dr John Knauss, at the Preparatory Committee's last meeting.

Agenda 21, which emerged from the consensus at UNCED, contains concrete references to the Intergovernmental Oceanographic Commission: in particular, Chapter 17, Section E, touches on substantial aspects of the IOC's outstanding role at the sub-regional, regional and world levels in creating favourable conditions for effective participation in ocean-related matters. As a concomitant to recognition of the important role oceans and seas play in attenuating climate change, the IOC was requested, in collaboration with WMO and UNEP and other international organizations and with the support of countries that have the resources and the know-how, to carry out research and, through GOOS, carry out systematic research to clarify the role of the oceans in climate change. The assignment of these responsibilities represents well-deserved acknowledgement of the IOC's role and at the same time a challenge that will require the formulation of a strategy for the Commission's participation alongside the other organizations concerned in order to meet the expectations to which UNCED has given rise, all of which concern the Commission's fields of competence, in particular ocean sciences and services, technical assistance, training and the transfer of technologies to developing countries.

When considering action to follow up UNCED this Assembly will be required to review other chapters and sections of Agenda 21, in particular those concerning the atmosphere, the mobilization of the scientific and technological community, scientific support for sustainable development and co-operation, and the strengthening of national capacities.

The analysis and formulation of guidelines concerning the Framework Convention on Climate Change and the Convention on Biodiversity will also be required, with a view to identifying IOC action, programmes and activities that may contribute significantly to strategies for those conventions.

Immediately after the Rio meeting, the IOC participated actively in follow-up activities, including the joint meeting of the officers of the IOC and the Council of WMO, held in June 1992, in order to secure a rapprochement on matters of common interest; the special meeting of ICSPRO held at UNESCO Headquarters in September 1992; the preparation of the document stating the case for GOOS (IOC/INF-915); the symposium on the rational use of coastal areas held in Bordeaux in September 1992; and the SAC-III Forum convened by the ICSU in Ensenada in January this year. Important as it is, all that action should be regarded as the initial phase of a process that should desirably lead to an IOC master plan of action for following up UNCED, which should be prepared along the lines sketched out by this Assembly.

This, without any doubt, is delicate work that will require in-depth analysis of the context in which the Commission is working in order to find adequate means of ensuring the sustainability of its programme and at the same time generate in a balanced, effective and continuous manner the knowledge and mechanisms to monitor the global environment and its interactions that will be indispensable as a basis for integrated management of the world ecosystem.

Another important task for this session of the Assembly is to analyze the report prepared by the Ad Hoc Study Group on IOC Development, Operations, Structure and Functions (IOC/DOSS-III/3), which combines the contributions of a group of outstanding members of this Assembly who worked between the sessions under the leadership of Dr Ulf Lie. The report of the DOSS Group, which is of great significance because of the depth and objectiveness of its approach, complements and rounds off with concrete proposals a long process of analysis on the strengthening of the Commission, in which the contributions of two other study groups, FUROF and FURES, have been most valuable.

Within the framework of action established by this Assembly by means of Resolution IOC/XVI-19 the DOSS Group has concentrated its analysis on five essential aspects of the Commission: its status as an intergovernmental organization in the context of the United Nations Conference on the Law of the Sea (UNCLOS) and of UNCED, the optimal conditions for the development and execution of its programmes, the financial resources required for the purpose, the alterations that must be made to its organization and structure, and the fields in which the statutes and rules of procedure need to be clearer and more detailed.

I am sure that the Assembly will find in the report very valuable guidelines for launching a process of analysis leading to effective and timely decisions that will give the Commission the solvency needed to ensure that the main programmes achieve their objectives in full. This solvency should preferably be the product of a combined effort, in which UNESCO's sustained contribution is supplemented by the resources deriving from the formal commitment of the Member States and the resources generated by an intelligent and imaginative approach to the international funding agencies.

While the subject of appropriate and adequate resources for the execution of the IOC programme is an important matter, it is not the only ingredient worthy of consideration in a policy designed to make the Commission viable. Each of the topics analysed by the DOSS Group contains suggestions for identifying changes that are essential and urgent. To that end, it is necessary to initiate a process that will lead, in the shortest possible period of time, to a new phase in the development of the Commission.

For example, the UNCED process, which has only just begun, and the promotion of the role of the Commission are, in my view, themes that are central to our work, with implications for all components of the IOC programme, including co-operation with other organizations within the framework of the Intersecretariat Committee on Scientific Programmes Relating to Oceanography and co-operation relating

to specific programmes and agreements, in particular with the World Meteorological Organization, the United Nations Environment Programme, the International Atomic Energy Agency, the International Council of Scientific Unions, SCOR, CPPS, ICES and ECOR.

The discussion that took place yesterday following the first unofficial analysis of the recommendations formulated by the DOSS Group confirmed this prospect and gave us the sense of being on the right path.

Ladies and Gentlemen,

I am convinced that you will have an inspiring and valuable debate on the fundamental questions on our agenda at this 17th session of the Assembly. I hope that our joint efforts will lead to the adoption of the decisions needed so that the IOC can respond in a satisfactory manner to the demands the future will make of it.

Mr Director-General,

Before concluding, I should like to thank you for the support you have given the IOC. I have had the honour of being received by you on a number of occasions in the company of the Secretary and the First Vice-Chairman. Each time, following our approaches and the relevant resolutions and agreements of the IOC, you have taken steps to strengthen the Commission's programme. Your approach has fostered relations characterized by respect and trust, on the basis of which we hope to continue our work in order to meet the demands of present and future circumstances and, as far as we are concerned, to contribute to the common goal of the advancement of science, education, culture, democracy and peace.

**B. Opening Address by Mr Federico Mayor,
Director-General of the United Nations Educational,
Scientific and Cultural Organization (UNESCO),**

on 25 February 1993

Mr Chairman,
Delegates,
Ladies and gentlemen,

First, let me welcome you all to UNESCO House and wish you a successful Assembly. I know that you have many important topics to discuss, and I should like to share with you my thoughts on some that seem to me of particular importance.

When I addressed the Assembly in March 1991, one of the major challenges before us was the preparation of the United Nations Conference on Environment and Development (UNCED). UNCED has come and gone and the challenge is now to implement the follow-up. UNESCO has already initiated its response to Agenda 21, and I have created a special Advisory Committee for the follow-up to UNCED with a view to enhancing UNESCO's contribution to the implementation of Agenda 21 and to arriving at an appropriate intersectoral focus for the longer-term evolution of the Organization's programmes in the field of environment and sustainable development.

IOC made a very substantial contribution to UNESCO's overall participation in UNCED and succeeded in obtaining in Agenda 21 an endorsement of the need for the Global Ocean Observing System (GOOS), together with reference to the importance of the oceans in the climate system and to the significance of the carbon budget. It is most satisfying for all concerned that the IOC is identified as having a leading role to play in the implementation of Agenda 21 activities in these areas, including the development of a strategy for providing education, training and technical assistance to developing countries. At the same time, this places a large responsibility on you - as well as on UNESCO - to ensure an adequate follow-up to UNCED by the Commission. I am referring here to the fact that the IOC, as an institution with functional autonomy within UNESCO, relies on you as representatives of its Member States

for a substantial part of its resources and for the framing of its policy. It is vital that the IOC's response to Agenda 21 should be timely, appropriate and substantial, particularly in view of the strong competition in and outside the UN system in the environmental field.

One of our major tasks is to secure the participation of the scientific community in the follow-up to UNCED. Science is, of course, for the scientists to conduct. However, it is important that it should have a strong upstream impact on political agendas and that its findings should be taken into account downstream in the policies and strategies adopted by governments. As an intergovernmental body, IOC has an essential role to play - in co-operation with WMO, UNEP, ICSU and others - in promoting this partnership of science and governance at the international level.

I should mention here the possible use of ICSPRO (Intersecretariat Committee on Scientific Programmes Relating to Oceanography) as a mechanism for the co-ordination of the UN follow-up to UNCED as regards the oceans, with particular reference to Chapter 17 of Agenda 21. The Special Session of ICSPRO held on 1-2 September 1992, which I co-chaired with Patrick Obasi, the Secretary-General of WMO, made a proposal along these lines. This has been followed up by the preparation of draft revised terms of reference and membership of ICSPRO, which have been circulated jointly by me and the Secretary-General of WMO to the relevant Executive Heads. It is our intention to bring this matter up at the first session of the newly created Interagency Committee on Sustainable Development (IACSD).

Many changes are to be expected in the context of efforts to streamline the UN system in response to the challenge of Agenda 21 and these will call for corresponding action at all levels. At the national level, it is desirable that your representatives in the new bodies and mechanisms created - as well as in the General Assembly and other governing bodies - are fully conversant with the role of the IOC. I would urge you, as representatives of your countries on the IOC Assembly, to make sure that this is the case, in support of your own Commission and in the interest of coherent national policy.

In keeping me informed of developments in the IOC, your Secretary, Dr Kullenberg, has drawn my attention to the many interesting and far-reaching proposals made by the DOSS Study Group. One such is the suggestion that the Commission move towards a grant-in-aid relationship with UNESCO, based on the payment of fixed percentage support. If you should wish to pursue this matter further, I should be ready to discuss various prospects with the IOC officers, in the context of our ongoing reflection on optimum institutional arrangements at UNESCO.

I referred earlier to competition. In a context of scarce resources, this concerns not only territory and mandate but also funds and staff. It is important therefore that we identify priorities and ensure that resources are used as effectively as possible. Here the Assembly must also assume its responsibilities. This does not only mean agreeing on priorities but also being responsive itself to the need for austerity measures. UNESCO's Executive Board is to consider the frequency of sessions of the General Conference and the implications for the periodicity of international and intergovernmental meetings. In the light of this, the Assembly may wish to re-evaluate the frequency and length of its own meetings, and I would even propose that you consider changing the periodicity of your sessions to once every three years, with an Executive Council meeting mid-term. This would save considerable funds and optimize programme implementation since the Secretariat would have to spend much less time on preparations for governing body meetings. I would urge you to consider the suggested change very seriously.

As regards budgetary matters, I allocated in 1992-1993 to the activities of the International Oceanographic Commission and the marine related issues direct programme funds in the amount of over 3 million dollars. In spite of a difficult financial situation, the budgetary measures I have taken this month have resulted in maintaining the programme funds of IOC without any reduction. Furthermore, I have increased the staff establishment of IOC under the regular budget, over and above what was foreseen for this biennium, by 4 posts (one professional and three general service category). In accordance with the important role that the Member States attribute to IOC, I envisage providing two more posts, if necessary, in the next biennium. Today, the regular budget of UNESCO is financing in the IOC Secretariat 19 posts, of which two are directors and five professionals (representing some 2.330.000 million dollars). UNESCO's contribution is therefore roughly 5.3 million dollars as compared with the 3.3 million dollars of extrabudgetary funds expected to be mobilized by IOC in 1992-1993. The IOC Secretariat is provided

of course with the support of the central and administrative services as well as with a large number of offices and with related utilities.

Although some *ad hoc* measures can be taken, I venture to suggest that the forum to decide on exceptions for the IOC is the General Conference itself, through the submission of draft resolutions to reinforce the Commission's staff establishment. Knowing the priority accorded to the IOC by many UNESCO Member States, I am confident that you can mobilize the requisite support within your countries for the proposal of amendments to the proposed programme of work and budget.

Mr Chairman,
Ladies and gentlemen,

The great challenge facing the UN at the present time, facing all of us, is the management of our interdependence. We are coming slowly to realize that the goals of peace, development and a sound environment are indissociable and that we have a shared, global responsibility for their promotion. It is vital in this respect that we learn to take the long-term view, to be proactive rather than simply reactive. The best form of peacekeeping - as Secretary-General Boutros Boutros-Ghali has emphasized in his *Agenda for Peace* - is to pre-empt conflict by remedying its causes. We need to redirect our resources and efforts to anticipating and preventing disasters of all kinds - war, environmental degradation, natural hazards and also the chronic disaster of world poverty and deprivation. Through its support for large-scale environmental research programmes, such as the World Climate Research Programme, the IOC is playing a part in this wider "peacekeeping" mission. It is of the highest importance that these programmes should be fully supported and that their results should be translated into practical benefits for all the peoples of the world.

At the last meeting of your Assembly, I described the ocean as holding not only the secret of the past but also the secret of the future. You have been given the responsibility for helping to obtain the key that will unlock that secret for humanity.

May I finally, Mr Chairman, express the hope that this Assembly will be successful and will serve to strengthen still further the IOC, functionally autonomous within UNESCO but an integral part of the Organization. The oceans are crucial for our common future. To a significant extent, they are in your hands.

ANNEX IV

MEMBER STATES OF THE COMMISSION AND ITS OFFICERS

A. List of Member States of the Commission (122)
(as of 12 March 1993)

AFGHANISTAN	LIBYAN ARAB JAMARAHIYA (The)
ALBANIA	MADAGASCAR
* ALGERIA	* MALAYSIA
ANGOLA	MALDIVES
* ARGENTINA	MALTA
* AUSTRALIA	MAURITANIA
AUSTRIA	MAURITIUS
BAHAMAS (The)	* MEXICO
BANGLADESH	MONACO
BARBADOS	MOROCCO
BELGIUM	MOZAMBIQUE
BENIN	MYANMAR
* BRAZIL	NETHERLANDS (The)
BULGARIA	NEW ZEALAND
CAMEROON	NICARAGUA
* CANADA	* NIGERIA
CAPE VERDE	* NORWAY
* CHILE	OMAN
* CHINA	PAKISTAN
* COLOMBIA	PANAMA
CONGO (The)	PERU
* COSTA RICA	* PHILIPPINES (The)
COTE D'IVOIRE	POLAND
CROATIA	* PORTUGAL
CUBA	QATAR
CYPRUS	* REPUBLIC OF KOREA (The)
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	REPUBLIC OF YEMEN
DENMARK	ROMANIA
DOMINICAN REPUBLIC (The)	* RUSSIAN FEDERATION
ECUADOR	SAMOA
* EGYPT	SAINT LUCIA
EL SALVADOR	SAUDI ARABIA
ESTONIA	SENEGAL
ETHIOPIA	SEYCHELLES
FJI	SIERRA LEONE
FINLAND	SINGAPORE
* FRANCE	SOLOMON ISLANDS
GABON	SOMALIA
GAMBIA	SOUTH AFRICA (Suspended)
* GERMANY	* SPAIN
GHANA	SRI LANKA
* GREECE	SUDAN (The)
GUATEMALA	SURINAM
* GUINEA	SWEDEN
GUINEA-BISSAU	SWITZERLAND
GUYANA	SYRIAN ARAB REPUBLIC (The)
HAITI	* THAILAND
ICELAND	TOGO
* INDIA	TONGA
* INDONESIA	TRINIDAD & TOBAGO
* IRAN, ISLAMIC REPUBLIC OF	TUNISIA
IRAQ	* TURKEY
IRELAND	* UKRAINE
ISRAEL	UNITED ARAB EMIRATES
* ITALY	* UNITED KINGDOM OF GREAT BRITAIN &
JAMAICA	' NORTHERN IRELAND (The)
* JAPAN	UNITED REPUBLIC OF TANZANIA (The)
JORDAN	* UNITED STATES OF AMERICA (The)
* KENYA	URUGUAY
KUWAIT	* VENEZUELA
LEBANON	VIETNAM
	YUGOSLAVIA

* MEMBERS OF THE EXECUTIVE COUNCIL

**B. Officers of the Commission
(as of 12 March 1993)**

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ANNEX V

BRUUN MEMORIAL LECTURES 1993

Thursday, 25 and Friday, 26 February 1993

**THE ROLE OF MARINE RESEARCH, SYSTEMATIC OBSERVATIONS AND RELATED
CAPACITY BUILDING AND TECHNOLOGY DEVELOPMENT FOR OCEAN AND COASTAL
ZONE SUSTAINABLE DEVELOPMENT**

(A B S T R A C T S)

THE GLOBAL OCEAN OBSERVING SYSTEM

by

Dr. John Woods
Director of Marine and Atmospheric Sciences
Natural Environment Research Council, UK

The Intergovernmental Oceanographic Commission has initiated planning for a Global Ocean Observing System (GOOS), intended to describe the state of the ocean at regular intervals as input to a wide range of ocean services. The lecture will explain how collection of global observations will help reduce uncertainty in services that address local problems. The starting point for designing GOOS will be identify what products can best serve the needs of each class of user, whether they are concerned with fisheries or mineral extraction, coastal pollution or climate, shipping or defence, or indeed the further advancement of our knowledge about the ocean. The design team will develop design proposals for consideration by the representatives of those user communities, and progressively refine the design until it is ready for testing. Only after a successful demonstration will governments be asked to fund a permanent system of global observations. The basis for design comes from scientific research projects such as TOGA, WOCE and JGOFS. It will be based on novel observing systems used in such projects. The information needed by end users will be obtained from numerical models into which GOOS observations have been assimilated. Within the limits of predictability the products are expected to reduce the uncertainty in local operations, largely because they provide information about open ocean that has not so far been available.

The case for GOOS is the following : investing a billion or so dollars per year in making the observations and using them to generate GOOS products will substantially improve a wide range of ocean services which underpin activities nearly one trillion dollars per year. Saving even a few percent of that cost will justify the investment in GOOS. Other benefits to the well-being of mankind are less easy to quantify, but no less important.

**LONG-TERM SYSTEMATIC ENVIRONMENTAL MONITORING AND SUSTAINABLE
DEVELOPMENT : THE ROLE OF WMO AND OF THE NATIONAL METEOROLOGICAL
AND HYDROLOGICAL SERVICES**

by

**Professor G.O.P. Obasi
Secretary-General
World Meteorological Organization**

Since man first tilled land for food, he had always kept vigil of the environment - the atmosphere, oceans, rivers and land. The earlier observations and experiences were later compiled into weather lore which provided guidance for the implications of observed changes of the environment.

With the invention of the barometer and the thermometer and following the creation of the International Meteorological Organizations in 1873, efforts were directed towards a co-ordinated instrumental systematic monitoring of some of the aspects of the global climate system. This was further developed and strengthened when the World Meteorological Organization (WMO) came into being in 1950. The formalization of the World Weather Watch in 1963 and progress made in science and technology, especially with satellites and computers, facilitated systematic global environmental monitoring that ensued :

- (i) the availability of data for research which has improved our present knowledge today in such areas as "global warming" and ozone layer depletion, desertification and other environmental subjects;
- (ii) advances in weather prediction in the time scale ranging from now casting to medium-range, longer-range and climate prediction; and
- (iii) appropriate information in support of social and economic development.

The paper further examines the role of WMO and of the national Meteorological and Hydrological Services in the promotion of long-term systematic monitoring of the environment through the programmes of WMO. It summarizes the efforts of WMO in technology transfer and national capacity building which are designed to improve the capability of developing countries in implementation of environmentally sound sustainable development. The paper finally underlines the importance of forming closer partnership between meteorologists, oceanographers and hydrologists in order to properly deal with the challenges of the United Nations Conference on Environment and Development.

ANNEX VI

STATEMENTS ON AGENDA ITEM 11 "PROGRAMME AND BUDGET"

A. Statement by Dr. John Knauss, First Vice-Chairman IOC

In introducing this Agenda Item on the IOC Programme and Budget, I wish first to address a number of observations some of which go beyond the specific topic at hand. I must first admit that I share with many delegations a certain perplexity as to why we always consider one of the most essential elements of our debate at the end of the Assembly. It is clear that the required staff and financial resources to carry out our decisions are a leading factor in all that we have discussed in the preceding sessions of the Assembly.

My fellow Officers and the Secretary have had the opportunity during our intersessional consultations to review these matters and I have also had the advantage of being associated with the deliberations of DOSS. This has been an enriching experience for me and, coupled with my association with IOC from the very early days, perhaps places the following observations in a perspective that will help us to adjust our perspective.

I will be very frank in stating from the outset that, we - that means all of us as IOC Member States forming a corporate body within an international partnership for the ocean - must know what we wish to achieve through association and commitment to the Commission. I feel that the DOSS Study Group expressed this very effectively (Document IOC/DOSS-III/3, para 6):

"The Commission is an organization for and of its Member States, and the success of the programmes of IOC are primarily related to the degree of involvement of Member State institutions in programme formulation, financing and execution".

For IOC to achieve its long-term goals, it is essential that (para 7) :

"Its Member States are committed to using the Commission as their primary instrument for international cooperation...".

So, before turning to specific problems before us, we must first ask ourselves whether we, as representatives of IOC Member States, are prepared to meet this commitment.

Whether we are concerned about the resources available for the present year under Agenda Item 11.1 or those of the coming biennium under Agenda Item 11.2, or even the framework for the next Medium-Term Plan as proposed by DOSS, our response must be the same. We, as IOC Member States, must be prepared to accept certain responsibilities for the well-being and efficient functioning of our Commission. However, in order that we, as governments in an intergovernmental organization, can fulfill our role, we must have an acknowledged and dependable counterpart commitment from our parent body.

I wish briefly to recall the interesting observations that John Woods made in his most illuminating Bruun Memorial Lecture. As he emphasized, the ocean and coastal areas represent a socio-economic consideration that will be pivotal in the future development of our planet.

The proposals made by DOSS, in my view, are a step in the right direction and are the result of a healthy maturation process within our Commission. But the decisions to be made are not easy. I wish to reinforce the view expressed by the Chairman of DOSS that we cannot continue to postpone the result of our deliberations. Any valid discussion of Programme and Budget Matters must be made within the context of "QUO VADIS IOC?".

In regard to the specific Agenda Items under our consideration, let us first address the immediate issue of 1993.

I wish to express on behalf of the IOC our appreciation for the decision of the Director-General to reconstitute some funding to the IOC, in the form of a special allocation of \$400,000. This is indeed welcome and will enable us to meet basic commitments in regard to joint programmes with other organizations, so vital to the post-UNCED process.

We certainly endorse the views of the Director-General that the problems we face are those of cash out-flow and that they do not have a long-term impact on the work of IOC. However, I wish to emphasize that the table found in Document IOC-XVII/7 Pt.1 on the finances of IOC was entitled 'Fluctuation'. In recognizing the special efforts of the Director-General in support of IOC, I must also alert you, as Member States, to the continual problem of dependability. Without dependable resources, it is very difficult to manage IOC and plan effectively for the future.

Funding that comes directly to the IOC, whether through UNESCO or IOC Member States, is subject to the stop-and-go syndrome. As DOSS has pointed out, how can we, as IOC Member States - coupled with our scientific communities - mobilize the catalytic and counterpart resources that multiply by a factor of between 2 and 10 those of UNESCO, if the basic resources fluctuate from one period to another? How can the Secretariat, recognized as being too few for the tasks at hand, use its energy to plan projects, then delay, and then start again? What image do we thus give to other organizations and to our essential base of expertise and institutions within our Member States? I ask you to reflect on this.

Turning to the two specific Agenda Items, I have rather direct advice to offer, within the time-continuum of each.

For 1993, I feel that we should certainly express our appreciation to the Director-General for the exceptional efforts he has made to assist the IOC in meeting its basic commitments. This, however, does not imply that we can undertake all that we have forecast. I, therefore, suggest that a statement be included within the Summary Report of the Assembly that authorizes the Secretary, in consultation with the Officers, to ensure programme implementation within the constraints and with emphasis upon meeting commitments for joint programmes.

For the Draft 27 C/5, that is the next biennium for 1994-95, (Document IOC-XVII/8 Annex 4), I commend to your attention that the Secretary has indeed proposed an integrated programme. The fact that, for internal UNESCO administrative reasons, distinction is made between the two components (IOC and marine science related issues) does not detract from the efforts made by our Secretary to develop clearly-stated common and complementary approaches to the basic goals we have agreed upon.

As some Member States noted in regard to the Biennial Report of the IOC to UNESCO, we may regret that the limitation in length of the Draft C/5 do not permit full details on all of the IOC Programmes. However, the Director-General's instructions on this aspect are quite clear and correspond to guidance he has received from UNESCO governing bodies.

In analyzing the proposed budget before us, we should first review that specific requirements set forth in the Draft Resolutions emanating from our Subsidiary Bodies. Your suggestions regarding adjustment to Table 1 are solicited. We must also consider the unified programme of the Office of the Intergovernmental Commission and marine science related issues as a whole. I draw your particular attention to the content of the programme, the distribution of funding and the role of the Director of the Office who is also Secretary IOC. I would hope that any Draft Resolution we may prepare on this subject will reinforce his role, both in terms of programmes executed from UNESCO headquarters as well as those executed via regional offices.

Another aspect that the Secretary has drawn to my attention concerns the proposal by UNESCO that some aspect of Sub-programme II.2.4 be evaluated in accordance with house-wide evaluation procedures. I will request the Secretary IOC to provide you with more information on this particular subject.

Last, but certainly not least, I feel that we should respond quite concretely to the references made by the Director-General in his opening address to this Assembly in so far as additional staff positions are concerned. It is not only our responsibility to be specific and realistic. We must also be prepared to mobilize political support within our Member States so that appropriate amendment can be made to the Draft C/5 and its staff establishment.

The IOC has only had one new professional position provided during the last decade and has lost at least six since we first forecast the need for a doubling in staff and programme funding. The new position, funded for 1992-93, is still not recruited. Although we are certainly grateful for the Director-General's efforts to absorb within the UNESCO budget three general service posts that previously had been paid for through the IOC Trust Fund, I must also alert you to the fact that other general service posts will be abolished this year upon the retirement of the incumbents.

As is always the case, IOC will look with optimism towards the future and I thus propose that for the next UNESCO Medium-Term Plan (1996-2001) we shift our views into the next century. This will be an exciting period for all of us. Under the Agenda Items on DOSS and UNCED, you have proposed Action Plans relating to IOC as a whole and response to UNCED in particular. We hope that GOOS will become operational. Perhaps we will have made progress towards our evolution as an intergovernmental organization, based on treaty arrangements.

In an initial stage, I suggest that the Officers of our Commission propose to the next Executive Council a framework that embodies our aspirations and requirements. They have before them a wealth of resource material proposed by our subsidiary bodies and then exceptional expertise found therein. This proposal is based upon the wise guidance of DOSS which is intended to reinforce the executive role of the Council and make the best use of the expertise of our elected Officers.

In discussing all of these matters, we should bear in mind our statutory responsibilities to, and I quote, '*make recommendations and provide technical guidance as to the formulation and execution of the marine science programmes of UNESCO*'. (IOC Statutes, Article 2 (i)).

May I conclude with a few personal words. It has indeed been for me a privilege to serve as your First Vice-Chairman and I trust that I have contributed to the goals of the IOC to which I am personally dedicated. It has also been an enriching experience for me as an individual and I will continue to be attached to the work and principles of the IOC. In passing responsibilities to my successor as First Vice-Chairman, Geoff Holland, I wish to convey my support and sincere best wishes.

**B. Statement by Prof. Adnan Badran
Assistant Director-General for Science, UNESCO**

Thank you Mr. Chairman.

I am particularly grateful to be accorded the opportunity to address this distinguished Governing Body of IOC, and wish to compliment the Secretariat of IOC on producing a very good document on programme and budget for the next biennium.

My comments, Mr. Chairman, will concentrate on some very important issues raised during the Session on staffing, staff costs, the unity of the marine sciences, and also on budgets, and fluctuation. Yesterday, I listened with keen interest to the statement of the distinguished delegate of the United States, Mr. J. Knauss, and should now like to revert to some of the excellent comments made by him. As we are all doubtless aware, UNESCO never has any problem when it comes to budget! I think you have all heard this over and over again! For the biennium 1994-1995, we do indeed have a very sound budget - what we call our Draft Programme and Budget - which is drafted on the basis of the annual contributions made by Member States. The General Conference approves the programme and budget for the biennium and we then go back to the draughting board to draw up our workplans which show exactly where every dollar goes. The General Conference approves and commits itself to this workplan, including the section containing the programme and budget of the IOC and other marine activities. However, once the biennium gets under way, we start to encounter cash-flow problems. These cash-flow problems stem from arrears or delays in payments (sometimes the result of insurmountable difficulties at the national level with which we can certainly sympathize), and this is where the fluctuation mentioned by my colleague, Mr. Knauss, yesterday, comes into play. Evidently, such situations, together with related signals received from the Executive Board, enter into the decision-making process of the Director-General concerning budget cuts. Notwithstanding the latter, and in view of the Commission's great leap forward over the past two to three years *inter alia* on the preparation and follow-up of UNCED, and in the World Climate Conference, the Director-General gives top priority to IOC with its greatly increased visibility, and its prominence in the implementation of ocean-related aspects of Agenda 21. For instance, when the Director-General is obliged to request cash-flow induced fluctuations of, say, 20% in direct programme costs from all sectors of UNESCO, he ensures that restitution is subsequently made to IOC. This, as has already been stated by the Director-General, was the case for the \$400,000 and \$288,000 which were returned to IOC, which means that, so far, for the whole biennium, the total shortfall in the budget of the IOC amounts to only about \$300,000. The Director-General, when he addressed this distinguished Assembly, made commitments to increase the strength of the IOC by attributing more posts to the Commission. In this respect, what was previously called "The Division of Marine Sciences" has already been integrated with the IOC Secretariat, and is now under the direct supervision and direct responsibility of the Secretary IOC. At the request of Member States during Commission III of the General Conference, we have maintained the visibility of COMAR in view of its success in the developing countries; and it too is under the direction of the Secretary of IOC. All professionals and general service staff of the "Division" are now integrated with IOC, and while some problems have been experienced with this integration process, I should like to assure the Assembly that the Secretary of IOC and I will do everything possible to guarantee the unity and integrity of the marine arm of UNESCO within the Secretariat of IOC.

In our calculations of posts, we should not overlook the posts that have been decentralized to the Regional Offices, nor the Secretariat support for those posts. Consequently, the number of posts assigned to the implementation of the marine science programme under the supervision and management of the Secretary IOC amounts to 39 posts in all. This figure includes those in the Regional Offices, and the four support L-posts. In his address to the Assembly, the Director-General promised to provide two posts to the IOC Secretariat. I have already implemented his recommendation as far as our 27 C/5 proposals are concerned and have even gone a step further by requesting the Administrative Officer of the Science Sector to transfer one post immediately from a lower-priority area in the Science Sector to the IOC Secretariat.

Decentralization, as you are aware, is the policy of the General Conference and, thus, of the Director-General. It has also been stipulated by the United States and the United Kingdom as one of the prerequisites of the reform to be undertaken by the Organization. In the Education Sector, we find about 55-60% decentralization. We have achieved 43% decentralization in the Science Sector. Remarkably enough, 36%

decentralization has been achieved in IOC activities. Obviously, as far as increased decentralization is concerned, the emphasis will be on the international regional activities of the programme. It is therefore necessary to keep a very sound balance between what should be decentralized and what should remain at headquarters. However, the above-mentioned four programme specialists and four secretaries decentralized to the Regional Offices, are helping to implement some decentralized activities forming part of the whole marine science programme directed by the Secretary of IOC.

Reverting once again to the question of budget, Mr. Chairman, I think it was mentioned that the Director-General had added another \$100,000 to the budget of the IOC, so the total figure is now more than \$4 million in direct costs. It is important, following UNCED, to try to tap other resources, particularly the Global Environment Facility, and to use the funds allocated to IOC to identify and formulate new projects, and to support related missions to tap the GEF resources. As you are aware, the funds initially available to GEF to address the follow-up of Agenda 21, will stand at \$3 billion in 1994 - a very considerable amount which we sincerely hope UNESCO can share. With this in mind, we have already invited the Vice-President of the World Bank responsible for sustainable development and the GEF to come to UNESCO. The Executive Director of GEF under UNDP came to UNESCO two weeks ago and met the IOC Secretariat on that occasion. We are initiating programmes to address Agenda 21, and I urge the Secretariat of IOC to continue along this path as regards climate change, biological diversity, etc., which are related to the two Conventions that emerged from UNCED. They are top priorities, and we should try to do all we can to benefit from GEF funding in this respect. Through the Regional Offices and the decentralization that took place, many relevant programmes could, in conformity with the request made by the GEF, be implemented in the regions themselves.

I think that this biennium has seen a very substantial effort as far as programme integration, unity and integrity are concerned. The Secretary of IOC is the Director of all marine activities of UNESCO. All programme specialists, whether in the field or at headquarters - and I wish to emphasize this very much since I intend to give it every support possible - are under his supervision and management. There are programmes which the General Conference requested us to maintain, namely TREDMAR and COMAR. Both of these activities are attracting budgetary resources from UNDP, and interact with MAB on the Mangrove Project; this interdisciplinarity between MAB and the ocean, which is really covered by COMAR, is maintained right now under the direction and supervision of the Secretary IOC.

I think that you are, in fact, dealing with one marine programme with various facets - the living resources, the non-living resources, the interaction of the ocean with climate change, GOOS, and TEMA - all of which constitute a really very solid ocean programme, a marine programme. This programme unity is essential, and I intend to work on it after your Assembly together with the Secretary IOC, with a view to strengthening and reinforcing the directives of the Director-General concerning homogeneity, integrity and unity, *inter alia* through the integration of all posts dealing with marine aspects under the direction of the Secretary IOC.

ANNEX VII

LIST OF WORKING DOCUMENTS

IOC-XVII/1	Agenda
IOC-XVII/1 Add. rev.	Revised Timetable
IOC-XVII/2	Annotated Provisional Agenda
IOC-XVII/3	Summary Report (published in the UNESCO Main Series Documents, as SC/MD/101)
IOC-XVII/4	List of Documents
IOC-XVII/5	List of Participants
IOC-XVII/6	Report of the Secretary on Intersessional Activities
IOC-XVII/6 Suppl.	List of Circular Letters and IOC Information Documents
IOC-XVII/7 Pt.I	Status Report on the IOC Programme and Budget
IOC-XVII/8	Action Paper
IOC-XVII/8 Annex 1	Draft Action Plan for IOC Follow-up to UNCED and Implementation of Agenda 21
IOC-XVII/8 Annex 2	The Approach to GOOS
IOC-XVII/8 Annex 3	The WCRP: State of Implementation and Proposals for Future
IOC-XVII/8 Annex 4	Proposal on the Draft Programme and Budget 1994-1995
IOC-XVII/8 Annex 5	Proposal for the Establishment of a Data Buoy Co-operation Panel
IOC-XVII/8 Annex 6	Development of ASFIS/ASFA and the IOC Future Role in it
IOC-XVII/8 Annex 7	Strategy Plan for the Implementation of the Project on Rapid Seismic Response System
IOC-XVII/8 Add.	Dates and Places of IOC-XVII, EC-XXVII and EC-XXVIII
IOC-XVII/9	Draft Biennial Report of the Commission, 1991-1992

N.B. This list is for reference only. No stocks of these documents are maintained, except for the Summary Report.

**ANNEX VIII/ANNEXE VIII/ANEXO VIII/
ПРИЛОЖЕНИЕ VIII / الملحق الثامن / 附件 VIII**

**LIST OF PARTICIPANTS/LISTE DES PARTICIPANTS/
LISTA DE PARTICIPANTES/СПИСОК УЧАСТНИКОВ
与会者名单 / قائمة المشاركين**

Names and titles in the following lists are reproduced as handed in to the Secretariat by the delegations concerned. Countries are shown in the English alphabetical order.

Les noms et titres qui figurent dans les listes ci-après sont reproduits dans la forme où ils ont été communiqués au Secrétariat par les délégations intéressées. Les pays sont mentionnés dans l'ordre alphabétique anglais.

Los nombres y títulos que figuran en las listas siguientes se reproducen en la forma en que las delegaciones interesadas los han comunicado a la Secretaría. Los países se mencionan en el orden alfabético inglés.

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أدرجت الأسماء والألقاب في هذه القائمة كما قدمتها للسكبرتارية الوفود المعنية، ورتبت أسماء البلاد بحسب الترتيب الهجائي الانجليزي.

下列名单系根据各有关代表团提交秘书处之姓名和头衔复制。国名按英文字母顺序排列。

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**II. PARTICIPANTS FROM MEMBER STATES/
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PARTICIPANTES DE LOS ESTADOS MIEMBROS/
УЧАСТНИКИ ОТ ГОСУДАРСТВ-ЧЛЕНОВ/
مشترون من دول أعضاء / 会员国与会者**

Afghanistan/Afganistán/Афганистан/
افغانستان / 阿富汗
Nor represented

Albania/Albanie/Albania/Албания/البانيا / 阿尔巴尼亚

Head of Delegation

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ANNEX IX

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ACC	Administrative Committee on Co-ordination (UN)
ACMRR	Advisory Committee on Marine Resources Research (FAO)
ACSYS	Arctic Climate System Study
ASEAN	Association of South East Asian Nations
ASFA	Aquatic Sciences & Fisheries Abstracts (FAO-IOC-UN)
ASFIS	Aquatic Sciences & Fisheries Information System (FAO-IOC-UN)
ATCM	Antarctic Treaty Consultative Meeting
AWI	Alfred Wegener Institute for Polar & Marine Research (Germany)
BCR	Community Bureau of Reference
BSH	Bundesamt für Seeschifffahrt und Hydrographie (Germany)
CBD	Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCCCO	Committee on Climatic Changes & the Ocean
CEC	Commission of European Communities
CEOS	Committee on Earth Observing Satellites
CEPPOL	Joint IOC-UNEP Marine Pollution Assessment & Control Programme for the Wider Caribbean Region
CERESCOR	Centre de recherches scientifiques de Conakry (Guinea)
CGMW	Commission for the Geological Map of the World
CGOM	IOC Consultative Group on Ocean Mapping
CIDA	Canadian International Development Agency (Canada)
CICESE	Centro de Investigación Científica y de Educación Superior de Ensenada (Mexico)
CLIVAR	Climate Variability & Predictability
CMM	Commission for Marine Meteorology
CNES	Centre national d'études spatiales (France)
CNODC	China National Oceanographic Data Centre (China)
CODATA	Committee on Data for Science & Technology (ICSU)
COMAR	Coastal Marine Research (UNESCO)
COMARAF	Coastal Marine Research for Africa
COMEMIR	Continental Margin Environment & Mineral Resources
COMSBLACK	Co-operation in Marine Science for the Black Sea
CPPS	Comision Permanente del Pacifico Sur
CSA	Cambridge Scientific Abstracts

CSD	Commission on Sustainable Development
CSIRO	Commonwealth Scientific & Industrial Research Organization (Australia)
CYMEPA	Cyprus Marine Environment Protection Association (Cyprus)
DAR	Data Archeology & Rescue
DBCP	Drifting Buoy Co-operation Panel
DHN	Diretoria de Hidrografia e Navegação (Brazil)
DOSS	IOC <i>Ad hoc</i> Study Group on IOC Development, Operations, Structure & Statutes
EC	Executive Council (IOC)
ECOR	Engineering Committee on Oceanic Resources
ECOSOC	Economic & Social Council (UN)
EDLR	Ecosystem Dynamics & Living Resources
EEC	European Economic Community
ENSO	El Nino & the Southern Oscillation (USA)
ERS	Earth Resources Satellite
ESA	European Space Agency
FAO	Food & Agriculture Organization of the United Nations
FCCC	Framework Convention on Climate Change
FURES	IOC <i>Ad hoc</i> Study Group on Measures to Ensure Adequate & dependable Resources for the Commission's Programme of Work
FUROF	IOC Working Group on the Future Role & Functions of the Commission
GAPA	Geological-Geophysical Atlases of the Atlantic & Pacific Oceans
GCOS	Global Climate Observing System
GDA	GEBCO Digital Atlas
GDC	Global Drifter Center
GE	Group of Experts
GEBCO	General Bathymetric Chart of the Oceans
GEEP	Group of Experts on Effects of Pollutants
GEF	Global Environmental Facility
GEMSI	Group of Experts on Methods, Standards & Intercalibration
GESREM	Group of Experts on Standards & Reference Material
GETADE	Group of Experts on Technical Aspects of Data Exchange
GEWEX	Global Energy & Water Cycle Experiment
GF3	General Format No. 3
GLOSS	IOC Group of Experts on the Global Sea-Level Observing System
GIPME	Global Investigation of Pollution in the Marine Environment
GIS	Geographic Information System

GLOBEC	Global Ocean Ecosystems Dynamics
GOEVS	Global Ocean Euphotic Zone Study
GOOS	Global Ocean Observing System
GFS	Global Positioning System
GTS	Global Telecommunication System
GTSP	Global Temperature-Salinity Pilot Project
HAB	Harmful Algal Blooms
IABP	International Arctic Buoy Programme
IACSD	Interagency Committee on Sustainable Development
IAEA	International Atomic Energy Agency
IAI	Inter-American Institute
IAPSO	International Association for the Physical Sciences of the Ocean
IASC	International Arctic Science Committee
IBCCA	International Bathymetric Chart of the Caribbean
IBCEA	International Bathymetric Chart of the Central Eastern Atlantic
IBCM	International Bathymetric Chart of the Mediterranean
IBCWIO	International Bathymetric Chart of the Western Indian Ocean
IBCWP	International Bathymetric Chart of the Western Pacific
ICES	International Council for the Exploration of the Sea
ICG	International Co-ordinating Group (ITSU)
ICSEM	International Council for the Scientific Exploration of the Mediterranean
ICSPRO	Intersecretariat Committee on Scientific Programmes Relating to Oceanography
ICSU	International Council of Scientific Unions
IDNDR	International Decade for Natural Disaster Reduction
IDPSS	IGOSS Data Processing & Services System
IFREMER	Institut français de recherche pour l'exploitation de la mer (France)
IGBP	International Geosphere-Biosphere Programme
IGM	Intergovernmental Meeting (WCRP)
IGMWCP	Intergovernmental Meeting on the World Climate Programme
IGOSS	Integrated Global Ocean Services System
IHO	International Hydrographic Organization
IMLA	International Maritime Law Association
IMO	International Maritime Organization
INOC	Inter-Islamic Network on Oceanography

INPE	Brazilian Agency for Space Research
IOC	Intergovernmental Oceanographic Commission
IOCARIBE	IOC Sub-Commission for the Caribbean & Adjacent Regions
IOCEA	IOC Regional Committee for the Central Eastern Atlantic
IOCINCWIO	IOC Regional Committee for the Co-operative Investigation in the North & Central Western Indian Ocean
IOCINDIO	IOC Regional Committee for the Central Indian Ocean
IODE	International Oceanographic Data & Information Exchange
IOMAC	Indian Ocean Marine Affairs Co-operation Organization
IOS	IGOSS Observing System
IPB	IGOSS Products Bulletin
IPCC	Intergovernmental Panel on Climate Change
IPHAB	Intergovernmental Panel on Harmful Algal Blooms
IPP	Integrated Project Plan
IREP	International Recruitment Experiment Programme
ISPM	Institut Scientifique des Pêches Maritimes (Morocco)
ITA	IGOSS Telecommunication Arrangements
ITIC	International Tsunami Information Centre
ITSU	International Tsunami Warning System in the Pacific
IUGG	International Union of Geodesy & Geophysics
JGOFS	Joint Global Ocean Flux Study
JSC	Joint Steering Committee
JSTC	Joint Scientific & Technical Committee
KMFRI	Kenya Marine & Fisheries Research Institute (Kenya)
KORDI	Korea Ocean Research & Development Institute (Rep. of Korea)
LME	Large Marine Ecosystems
LOICZ	Land-Ocean Interaction in the Coastal Zone
MAB	Man & the Biosphere
MARPOLMON	Marine Pollution Monitoring
MCT	Ministerio da Ciência e Tecnologia (Brazil)
MEDS	Marine Environmental Data Service (Canada)
METU	Middle East Technical University (Turkey)
MIM	Marine Information Management
MIT	Massachusetts Institute of Technology (USA)
MOU	Memorandum of Understanding

MPRM	Marine Pollution Research & Monitoring
MRI	Marine Related Issues (IOC)
MSCP	Marine Science Country Profile
NERC	Natural Environment Research Council (UK)
NIO	National Institute of Oceanography (India)
NIOF	National Institute of Oceanography & Fisheries (Egypt)
NIOMR	Nigerian Institute for Oceanography & Marine Research (Nigeria)
NMC	National Meteorological Centre
NMFS	National Marine Fisheries Service (USA)
NOAA	National Oceanic & Atmospheric Administration (USA)
NOC	National Oceanographic Centre
NODC	National Oceanographic Data Centre
NOS	National Ocean Service (USA)
NSF	National Science Foundation (USA)
NWS	National Weather Services (USA)
OALOS	Ocean Actions & Law of the Sea (UN)
ODAS	Ocean Data Acquisition Systems
ODP	Ocean Drilling Programme
OOSDP	Ocean Observing System Development Panel
OPC	Ocean Processes & Climate
ORMNT	Organization of Relief in Major Natural & Technological Disasters
ORSTOM	Office de la recherche scientifique et technique outre-mer (France)
OSLR	Ocean Science & Living Resources
OSNLR	Ocean Science & Non-Living Resources
PACON	Pacific Congress
PC	Personal Computer
PICES	North Pacific Marine Science Organization
PRIMO	Programme de recherche internationale en Méditerranée occidentale
RECOSCIX-WIO	Regional Co-operation for Scientific Information Exchange - Western Indian Ocean
RMTP	Revised Medium-Term Plan
RNODC	Responsible National Oceanographic Data Centre
ROPME	Regional Organization for the Preservation of the Marine Environment
SAREC	Swedish Agency for Research Co-operation with Developing Countries (Sweden)
SARP	Sardine-Anchovy Recruitment Project
SCOR	Scientific Committee on Oceanic Research

SHOA	Servicio Hidrográfico y Oceanográfico de la Armada (Chile)
SHOM	Service hydrographique et océanographique de la Marine (France)
SOA	State Oceanic Administration (China)
SOC	Specialized Oceanographic Centre
SOSMED	Study of the South Mediterranean
SPARC	Stratospheric Processes & their Role in Climate
SVP	Surface Velocity Programme
SWCC	Second World Climate Conference
TEMA	Training, Education & Mutual Assistance in Marine Sciences
TREDMAR	Training & Education in Marine Sciences (UNESCO)
UNAM	Universidad Nacional Autónoma de México (Mexico)
UNCED	United Nations Conference on Environment & Development
UNCLOS	United Nations Convention on the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific & Cultural Organization
UNIDO	United Nations Industrial Development Organization
UNU	United Nations University
VCP	Voluntary Co-operation Programme
VLBI	Very Long Baseline Interferometry
VLIR	Flemish Inter-University Council (Belgium)
VNIRO	Russian Institute on Sea Fishery & Oceanography (Russian Fed.)
VUB	Free University of Brussels (Belgium)
WCP	World Climate Programme
WCRP	World Climate Research Programme
WDC	World Data Centre
WESTPAC	IOC Sub-Commission for the Western Pacific
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment
WWW	World Weather Watch
XBT	Expendable Bathythermograph