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Reports of Governing and Major Subsidiary Bodies



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1. OPENING

1 The Chairman, Dr. Manuel Murillo, opened the Eighteenth Session of the IOC Assembly at 10.15 on 13 June 1995.

2 **The Assembly received and noted** with great appreciation statements by the Chairman and by the Director-General of UNESCO, Dr. Federico Mayor, on the occasion of the opening of the Assembly. Their statements are given in Annex III, Parts A and B. The Chairman expressed great satisfaction for the strong and continued support given by the Director-General to the IOC, as evidenced throughout the biennium and through the proposals of the Director-General to the 28th General Conference of UNESCO.

3 The Chairman called on participants to stand in silence for one minute as a mark of respect for distinguished oceanographers who have passed away since the Seventeenth Session of the Assembly. Special reference was made to Klaus Voigt (Germany), Oleg Mamayev (Russian Federation), Erdugan Akyüz (Turkey) and Lee Byung-Don (Republic of Korea).

4 In particular, the Chairman and the Director-General remembered Dr. Klaus Voigt who had served the Commission with great dedication for many years.

5 On 20 June 1995 **the Assembly received** the information that South Africa had been reinstated in the IOC. This news was received with great appreciation and strongly welcomed by the Assembly who then listened to the statement of the Ambassador of South Africa (see Annex III-C). On behalf of all the Member States, the Chairman warmly welcomed this reinstatement.

2. BRUUN MEMORIAL LECTURES

6 **The Assembly noted** that the theme of the Bruun Memorial Lectures, to be given on 16 and 21 June, would be "Results and applications, including the socio-economic ones, of the TOGA Programme". These would be presented by Dr. Pablo Lagos and Dr. James O'Brien (the abstracts are given in Annex V). The texts will be published in the IOC Technical Series.

7 **The Assembly noted** the exhibition and demonstration of ocean observation products arranged in the conference hall, and **expressed** its appreciation to those involved in organizing these.

3. ADMINISTRATIVE ARRANGEMENTS

3.1 ADOPTION OF THE AGENDA

8 **The Assembly adopted** the Agenda as given in Annex I.

3.2 DESIGNATION OF THE RAPPORTEUR

9 **The Assembly accepted** the proposal by Bulgaria to designate Dr. V. Jivago, Russian Federation, to serve together with Dr. B. Smirnov as Rapporteurs for the Session.

3.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

10 **The Assembly noted** that under Rule of Procedure No. 12(2), the Executive Council, acting as the Steering Committee for the Assembly, had appointed a Nominations' Committee for the Assembly with the following composition: Poland (Chairman), Chile, China, Greece, Indonesia, Islamic Republic of Iran, Kenya, Russian Federation and the United States of America.

11 As proposed by the Executive Council, **the Assembly accepted** the establishment of a Technical Review Committee for Resolutions with the following composition: Russian Federation (Chairman), Brazil, Colombia, China, France, Nigeria, Thailand, Turkey and the United States of America.

- 12 **The Assembly adopted** the Provisional Timetable (Document IOC-XVIII/1 Add. prov. rev. 2). The List of Working Documents is given in Annex VIII; the List of Participants in Annex IX; and the List of Acronyms in Annex X.

A. PROGRAMME IMPLEMENTATION

4. REPORT ON ACTIVITIES

4.1 SECRETARY'S REPORT ON INTERSESSIONAL ACTIVITIES; REPORT ON THE COMMISSION'S ACTIVITIES, 1993-1994, AND FINANCIAL STATEMENT, FOLLOWED BY DEBATE

- 13 In presenting his report on activities since the Seventeenth Session of the Assembly and the Twenty-seventh Session of the Executive Council (1994) together with the Biennial Report 1993-1994, (Annual Report 1994 and Document IOC-XVIII/6), the Executive Secretary provided an overview of the major activities and implementation of the Resolutions adopted by the sessions of the Assembly in 1993 and the Executive Council in 1994. The main body of the Annual Report 1994 presents the actions in three sub-sections:

- A. Implementation of resolutions;
- B. Programme activities; and
- C. Co-operation and development.

- 14 In summary: of 27 adopted resolutions, 17 have been fully implemented and 10 partially so. Implementation rates of several programmes need strengthening in order to achieve the desired results and impacts.

- 15 In the Science part of the programme, activities with respect to ocean and climate research, to living and non-living marine resources studies, to ocean mapping, to global and regional research and monitoring of marine pollution and to coastal zone, public awareness and related training actions, are presented.

- 16 Ocean services actions include data management and information exchange, observing system developments, in particular GOOS, Tsunami warning system actions and developments. Several practical results have been obtained resulting in the publication of CD-ROMs with data, including the NOAA World Ocean Atlas 1994, software systems and specific global temperature and salinity data sets. The close linkage of the development of the ocean observing system to the scientific results and programmes is maintained, as seen, for instance, in the report of the Ocean Observing System Development Panel (OOSDP). The results of IGOSS and the Data Buoy Co-operation Panel highlight how international agreements in relation to systematic observations can ensure cost-efficiency and sustained observations. The development of GOOS shows the increasing importance of ocean services in IOC programmes.

- 17 TEMA activities span practically all IOC actions, and some specific training activities are presented in a separate section on TEMA. This, however, does not reflect all TEMA-related actions. The development of a new TEMA strategy adjusted to the needs of UNCED follow-up and implementation of the UN Convention on the Law of the Sea are particularly emphasized.

- 18 In a separate section, activities in twelve different coastal and ocean regions or regimes are presented. Many of these are co-operative efforts involving partners from the United Nations system as well as others, including NGO's, in particular ICSU and SCOR. As regards the IOC they are mostly based on regional subsidiary bodies composed of national institutions.

- 19 The last section of the Annual Report provides information concerning growing co-operation between IOC and other bodies, including co-operation through joint programmes such as GIPME, GOOS,

GCOS and Ocean Mapping. This co-operation helps ensure that communities outside the ocean science and observation sectors are involved with the IOC. In particular, this concerns the Conventions adopted by UNCED (FCCC and Biological Diversity).

20 Public awareness and policy-oriented actions in relation to the Second Conference on Oceanography (Lisbon, 1994) and others, including the Third WESTPAC Symposium (Bali, 1994) and Global Coastal Change Conference (Bordeaux, 1995) were also highlighted.

21 The Executive Secretary reviewed how programme actions relate to and fit the programme and budget adopted by the Assembly (1993) for 1994-1995. He informed the Assembly of the status of the IOC budget, and the overall use of available funds. He also briefly presented the Biennial Report 1993-94 (Document IOC-XVIII/6). He emphasized that the wide range of activities is spreading IOC thin, that the follow-up is insufficient, and that the impact could be much higher if some concentration of effort was achieved in the programming. In this context, he also recalled the significant role of the IOC in the ACC Sub-Committee on Oceans and Coastal Areas, and with respect to ICSPRO. His statement is given in Annex III-D.

22 In the debate which followed, about thirty delegations made statements of a very substantive nature. All delegations praised the Annual Report 1994, welcomed the activities and report as very useful. Specific suggestions were made as regards the balance and text of the Biennial Report, which will be taken into account in the final version to be submitted to the Twenty-eighth Session of the General Conference. The Assembly congratulated the Executive Secretary IOC on his recent appointment to the level of Assistant Director General.

23 Many delegations supported the Director General's proposal for provision of a 'grant-in-aid' relationship between IOC and UNESCO, and stated that such a change would be of great value. Some delegations, however, expressed concern, and stressed that IOC must continue to function with appropriate oversight and financial accountability within UNESCO. Most delegations stressed that IOC needs greater managerial control to set its priorities and to have flexibility in allocating people and funds in a timely manner and to respond to new opportunities. Many delegations expressed their view that GOOS should be a primary focus for IOC, but closely linked to science. In responding to the Executive Secretary's assessment of IOC's principal challenges: (i) insufficient ability to create adequate awareness about IOC and its results at relevant decision-making levels; (ii) inadequate budgetary resources; delegations expressed the view that if IOC can better sell what it does and why it is important, the inadequate budget will be taken care of. An example involves the coastal zone: linking what IOC does with human activities on land, e.g., the associated run-off, degradation of water quality and habitat loss, and with associated economic impacts on fisheries, tourism, and ultimately on the quality of life. IOC cannot afford to simply focus on doing good ocean science. IOC should institutionalize its data collection and translate data into useful information - that is the task for GOOS. The IOC should also help interpret the results into a form people understand, value and get excited about.

24 The IOC should change to a more interdisciplinary approach. The future of coastal oceanography depends on this. Some delegations expressed concern with the proposal to separate the MRI - part of IOC/MRI - from IOC, along with its budget to provide for the new interdisciplinary and intersectoral project focused on coastal zones and small islands. Changes in organizational structures need to enhance prospects for integration, not separate them as it appears in this instance.

25 Many delegations stressed the need for greater emphasis on regional programme development and implementation, and the strengthening of the IOC Regional Secretariats for the Sub-Commissions. Some of the delegations cautioned against regionalization and emphasized the need to maintain a global IOC with global programmes.

26 Most delegations emphasized the need for a strong TEMA and an adjustment of the TEMA strategy to meet the new challenges, focusing on a regional approach. The importance of sustainable management of ocean resources and the marine environment was highlighted, together with the role of IOC to provide scientific input and systematic ocean observations to this end.

27 Several points were raised as to the significance of a financial allocation (grant-in-aid) arrangement with UNESCO, and how this would affect IOC. Many delegations emphasized that IOC must improve its impact and ability to deliver the message of the importance of oceans for the conditions on earth, the role of ocean resources for society, and the significance of the coastal zone. It is important that scientific uncertainties continue to be addressed.

28 The importance of co-operation was brought out, as well as the fact that IOC must be sufficiently strong to be an adequate partner. The representative of WMO, in reviewing the wide range of co-operation between IOC and WMO, pointed out that his Organization wants the IOC to be as strong a partner as possible, with stable and dependable resources, in particular for joint activities.

29 The Representative of the Secretariat for the Convention on Biological Diversity expressed a strong interest in co-operating with IOC in the relevant fields of marine biological diversity.

30 The Executive Secretary responded to the questions raised and reviewed the current programmatic problems of the IOC. His response is given in summary in Annex III-E.

31 **The Assembly adopted** the Annual Report for 1994 and the Biennial Report 1993-1994 for submission to the Twenty-eighth General Conference of UNESCO, subject to some revisions which had been specifically suggested by delegations.

B. STATUS AND EVOLUTION OF THE IOC

5. DEVELOPMENTS WITHIN UNESCO, FOLLOW-UP TO DOSS, AND REVISED RULES OF PROCEDURE

32 The Executive Secretary IOC, in introducing this agenda item, made reference to the following points that were tabled for discussion and their related documentation, as set out in the Annotated Provisional Agenda (Document IOC-XVII/2, paras 16 to 20):

- (i) Revised IOC Rules of Procedure (Document IOC-XVIII/2 Annex 2); and
- (ii) Further Implementation of IOC Resolution XVII-20: Part II of its Annex (Document IOC-XVIII/2 Annex 8).

33 In regard to (i), he informed the Assembly that the analysis had been prepared in accordance with instructions provided by the governing bodies. Particular reference was made to the Twenty-seventh Session of the Executive Council which had reviewed an initial draft (Document IOC/EC-XXVII/Inf.1) and requested (Document IOC/EC-XXVII/3, para. 152) that:

'the revised draft rules of procedure should be polished in light of these comments and delivered to the Assembly'.

34 In regard to (ii), he reminded the Assembly that, in adopting IOC Resolution XVII-20, the majority of proposals made by the *ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS) as found in Part I of the Annex to the Resolution had been agreed upon. On the other hand, five topics, including revised draft rules of procedure, were deferred for further study, the state of which and suggestions for future elaboration are reported upon in Document IOC-XVIII/2 Annex 8.

35 The Assembly was also informed of recent developments concerning proposals made by the Director-General, as set forth in the UNESCO Draft Programme and Budget for 1996-1997 (Draft 28 C/5: paras 2364-2379), to the effect that the support provided by UNESCO to the IOC be made in the form of a financial allocation. In this respect, reference was made to the Annex to IOC Resolution XVII-20, in particular para. 10 of Part I through which the Assembly:

"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".

It was noted that the term 'grant-in-aid' was subsequently replaced by the term 'financial allocation' by the 27th UNESCO General Conference when deciding on similar arrangements for the IIEP.

36 The Chairman provided information regarding discussions that had taken place at the 146th UNESCO Executive Board in regard to the establishment of a Special Account for the IOC and related financial regulations. Having received the proposals of the Director-General on New Arrangements for the IOC, as found in Document 146 EX/20, the Executive Board, through its Decision 5.3.1, deferred the matter to its 147th Session, pending further clarification. The two referenced documents were distributed to the Assembly for its information.

37 The ensuing debate generated a wide range of comments from Member States, with the majority of speakers expressing their support of the proposal found in the UNESCO Draft 28 C/5 to provide support to the IOC in the form of a financial allocation. A few speakers, however, emphasized the concerns that their representatives to the UNESCO Executive Board had expressed, particularly in regard to the fact that the IOC Assembly had not yet expressed its final views.

38 In order to discuss these matters in more depth, an *ad hoc* sessional working group on Agenda Item 5 was established under the Chairmanship of U. Lie, Past Chairman IOC and Delegate of Norway. The group, open to all Member States, held two meetings and, through its Chairman, reported to plenary with proposals for: (i) a draft resolution containing revised terms of reference and composition for continuation of the work of the ad hoc Study Group on DOSS; (ii) the structure and elements of response that IOC would provide to the Director-General for his use in preparing a report to the 147th UNESCO Executive Board to facilitate their consideration of the new arrangements for IOC; (iii) a draft resolution by which the IOC Assembly provides its final views in reaction to Decision 5.3.1 of the 146th UNESCO Executive Board.

39 In regard to the revival of the *ad hoc* Study Group on DOSS, now called DOSS 2, **the Assembly emphasized** the importance of ensuring that the expertise associated with the work of the Study Group would indeed reflect the interests and concerns of IOC Member States. To this end, **the Assembly encouraged** all Member States to provide proposals to the secretariat of those individuals who could contribute to the studies at hand, with an indication of the particular fields of expertise.

40 **The Assembly adopted** Resolution XVIII-1.

41 In considering Decision 5.3.1 of the 146th UNESCO Executive Board, **the Assembly agreed** that two aspects should be addressed.

42 The first concerns para. 5 of Decision 5.3.1 which requested that the Director-General submit a report to the Executive Board at its 147th session.

43 **The Assembly took note** of Decision 5.3.1 of the 146th UNESCO Executive Board and, in particular, para. 5 by which the Director-General is requested to submit a report to the Board at its 147th session.

44 **The Assembly instructed** the Executive Secretary IOC to provide such information, based upon the following background material as the contribution of the IOC to the requested report:

- (i) Statement of the Executive Secretary IOC as presented to the Eighteenth Session of the IOC, following debate under Agenda Item 4.
- (ii) Brief statement on the principles under which the IOC has been established as a body with functional autonomy within UNESCO.

- (iii) Administrative modalities to improve the effective response of IOC to the wishes of its Member States.
- (iv) Bibliography of related documentation to provide adequate information to the Executive Board, facilitate its work and increase awareness of the role of the IOC as the marine science arm of UNESCO.

45 The second concerns para. 4 of Decision 5.3.1 by which it was observed that the IOC Assembly had not provided its "final views".

46 Discussion regarding para. 4 of Decision 5.3.1 stimulated a great deal of debate, during which Member States expressed their views and requested clarification of the basic principles at hand.

47 **The Assembly reiterated** the position taken in IOC Resolution XVII-20 (Part I of the Annex: para. 10) to the effect that the Commission seeks as *"one means of achieving greater dependability in IOC resources ... a 'subvention' or 'grant-in-aid' relationship with its parent body"*. It was duly noted that 'financial allocation' is the appropriate term as subsequently decided upon by the 27th UNESCO General Conference (when deciding on similar arrangements for IOC).

48 **The Assembly expressed** its deep gratitude to the Director-General for his positive response to this Resolution, as demonstrated by the inclusion within the Draft UNESCO 28 C/5 of provisions for a financial allocation to the IOC.

49 Some Delegations stressed the need for the IOC Secretariat to clarify the supervisory mechanisms and ways and means that it proposes for financial and administrative autonomy within UNESCO, as soon as possible.

50 **The Assembly noted** that the administrative practice of UNESCO requires that a Special Account be established before such a financial allocation drawn from the UNESCO regular budget can be received by the Commission, should the 28th UNESCO General Conference approve the proposal.

51 In order to ensure that the required internal administrative practice of UNESCO is operational by 1 January 1996 (the first day of the coming UNESCO biennium), **the Assembly underlined** that all due regulations and rules applicable to the Special Account should be transmitted to the governing bodies of UNESCO.

52 **The Assembly expressed** its appreciation to the UNESCO Executive Board for the interest in IOC that had been demonstrated by the request for further information and for the proposed amendments to the financial regulations which would provide an opportunity for the IOC to make periodic reports, with due accountability, to the governing bodies of both the UNESCO Executive Board and the General Conference.

53 **The Assembly noted** that it was desirable to foster exchanges of information between the national action addresses and committees of the IOC and the national commissions and permanent delegations of UNESCO.

54 **The Assembly adopted** Resolution XVIII-2.

55 In conclusion, **the Assembly expressed** its appreciation to the Executive Secretary IOC and to those in the UNESCO secretariat responsible for administrative and financial matters, for the work undertaken in a spirit of collaboration and with a common view to providing the practical conditions for the improved functioning of the IOC.

6. SECOND INTERNATIONAL CONFERENCE ON OCEANOGRAPHY - FOLLOW-UP

56 The Chairman of the Conference, Prof. Mario Ruivo (Portugal), introduced the item recalling the objectives of the Conference together with the results and identified needs for follow-up actions. He referred to Resolution XVII-16 which specified the actions which had been undertaken. He recalled that the Conference was a joint venture of the Government of Portugal and IOC.

57 He also referred to the IOC Annual Report 1994 where the Conference objectives and structure were presented, together with the texts of the Declaration and Shared Vision resulting from the Conference. Finally he presented the Draft Report of the Conference (Document IOC-XVIII/Inf.3) in which a summary of presentations and debates is given. The Conference took place in Lisbon, Portugal, from 14-19 November 1994 and was attended by over 150 participants from about 60 countries covering all geographical regions. It was a truly global conference, with about 40 developing countries represented.

58 The Conference identified the scientific needs and required capabilities, as well as the institutional requirements for research, development and protection of the marine environment and its resources at the approach of the Third Millennium. The Conference defined global challenges to society presented by the concepts of sustainable development and bio-diversity protection, identified the scientific and technical elements for a rational response to these challenges, including the limits to the carrying and productive capacity of the ocean, as well as the need for a special effort aimed at developing public awareness.

59 Prof. Ruivo emphasized the importance of the Declaration and Shared Vision approved by the Conference which contains a call upon Member States to take urgent action to ensure that a cohesive and co-operative approach to ocean science, ocean services and related capacity building, is applied within the UN System, using the IOC as an appropriate institution for facilitating this. The draft Summary Report of the Second International Conference on Oceanography was prepared by the General Rapporteur of the Conference (Dr. Sidney Holt) and made available to the Assembly (Document IOC-XVIII/Inf.3). The proceedings of the Conference are in preparation.

60 **The Assembly acknowledged with appreciation** the results of the Conference and paid tribute to the government of Portugal and to Prof. Ruivo, personally, for the excellent work in the preparation and implementation of the Conference and for the provided hospitality.

61 **The Assembly agreed** that the Conference signifies an important achievement in bringing together scientists and decision and policy-makers and in establishing a dialogue between these groups, in sensitizing them to the importance of the ocean for sustainable development, required capacity building as regards the key role of scientific research and knowledge in such a process.

62 **The Assembly supported the view** of the Conference concerning the important role IOC can play to ensure the reinforcement of the ocean partnership for integrated management of oceans and coastal areas, and all types of seas that would help to ensure sustainability of the global ecosystem.

63 **The Assembly strongly endorsed** the invitation of the Conference to the Director-General of UNESCO to consider appropriate measures to further reinforce IOC, so as to enable it to respond fully to its mandate and role in ocean and coastal affairs within the UN System. It also **expressed** its appreciation of the willingness of the Government of Portugal to bring the outcome of the Conference to the attention of the Commission on Sustainable Development (CSD), as a contribution to the agenda item on the Oceans, and **strongly endorsed** such an action.

64 The importance of increasing the dialogue with management-oriented, economic and socio-economic sectors of society in order to achieve the full benefits of the results of the ocean and coastal area research and observations, which had been brought out at the Conference, was also emphasized.

65 A few countries stressed the need to find the best way to ensure a more active participation of Member States in IOC activities through TEMA, as well as to strengthen national capacities in marine science and applications.

66 The Delegate of Malta drew special attention to the need to strengthen the IOC National Committees, and called on Member States to improve the links between national institutions and IOC, and to make the IOC National Committees more responsive to the IOC needs.

67 **The Assembly called upon** the Chairman of the Conference to convey the invitation of the Assembly to the Portuguese Government to bring the findings and decisions of the Conference to the UN General Assembly and to give wide publicity to the scientific conclusions of the Conference.

7. MEDIUM-TERM PLAN 1996-2001 AND PRELIMINARY CONSIDERATION OF PROGRAMME AND BUDGET FOR 1996-1997

68 The Chairman recalled the decision of the Assembly in 1993 that early consideration should be given to the Programme and Budget for the coming biennium at each Assembly. He referred to the Expanded Annotated Agenda (Document IOC-XVIII/2) and its Annex 7 which presents the proposal on the Draft Programme and Budget for 1996-1997. He invited the First Vice-Chairman to introduce the proposal.

69 The First Vice-Chairman, in his introduction, emphasized several points to be considered in the programming and budget specifications, including the need to set priorities, concentration, and ensure a time limit to projects. He emphasized the role of the IOC in the UN system to deal with ocean science and services to help resolve global and regional ocean issues. He analyzed three points related to the budget: its size; dependability of resources; and presentation of related resources.

70 With respect to the programme, he emphasized the need for increased concentration, efficiency, effectiveness, evaluations and completion of projects. He concluded by stressing the need for the proposed *ad hoc* sessional group on the further development of the Draft Programme and Budget to concentrate its attention on the presentation of information regarding the budget, and the process of focusing the programme on urgent issues and how Member States could contribute to this process. His statement is given in Annex III-F.

71 The Chairman proposed, and the **Assembly decided** to establish an open-ended *ad hoc* sessional group to further develop and complete the draft proposal for the Programme and Budget for 1996-1997, taking into account the concerned debates and instructions of the Assembly in its work. Some delegations made preliminary comments on the proposed Draft Programme and Budget, and pointed out that the Executive Board had decided on a three percent lapse factor, instead of two percent, which should be taken into account.

72 The Chairman drew the attention of the Assembly to the Draft IOC Medium-Term Strategy (Document IOC-XVIII/2 Annex 3). The Executive Secretary, in introducing this document, recalled the debate of the Twenty-seventh Session of the Executive Council and that the suggestions made then were fully taken into account in the revised IOC Draft Medium-Term Strategy. He emphasized that the proposed strategy takes an issue-oriented approach, and endeavors to relate the IOC programmes to major current issues of society regarding the oceans and the marine environment conditions. He presented the basic elements, recalling in this context the IOC Strategy for the Future adopted at the Sixteenth Session of the Assembly (Document SC/MD/97, Annex VII). He emphasized the objectives, mechanisms, evaluation processes, and indicated expected results over the medium-term period (1996-2001).

73 He again emphasized the need for concentration of effort and limitation of programme extensions.

74 Finally, in referring to Document IOC-XVIII/2 Annex 7, he suggested a strengthening and focusing of the IOC Secretariat through relating its structure to the major programme elements. This

would result in three major units on: sciences; services (including GOOS); TEMA and regional activities. Each would be headed by a senior UNESCO staff member.

75 In the ensuing debate, the statements of the delegations showed overall support to, and concurrence with, the proposed Draft Medium-Term Strategy, welcomed the approach and agreed on the value of an overall path for future programming and directions. Several proposals were made for additional programme elements and focusing, e.g., inclusion of deep-sea floor ecology studies; biodiversity; emphasis on GOOS and services; establishment of regional research programmes, driven by regional interests from within the regions, but attracting the participation of scientists from outside the regions associated with leading scientific institutions.

76 The overall great significance of the TEMA Programme and need for its re-structuring and strengthening were re-emphasized by several delegations, by putting special emphasis on the regional approach.

77 Some delegations pointed out that in areas where no regional IOC subsidiary bodies exist, regional co-operative programmes are nevertheless carried out, e.g., in the western Atlantic through ASOS. Some adjustments to the text of Document IOC-XVIII/2 Annex 3, were requested, which have been taken up in the final version.

78 Several delegations referred to the mechanism of decentralization as a possibility to re-enforce the Secretariat, e.g., through carefully decentralizing well defined tasks to competent national or international laboratories.

79 Delegates emphasized the need to: (i) strengthen the links to the scientific community and also to attract young scientists; (ii) improve the links with users and application sectors; (iii) strengthen the role of IOC in integrated coastal area management; (iv) strengthen the IOC contribution to the follow-up to the Small Islands Developing States Conference and the related action plan; and (v) raise public awareness and strengthen the role and capacity of relevant national bodies.

80 The Medium-Term Strategy should also bear in mind the 1998 International Year of the Ocean.

81 Finally, it was pointed out that proper evaluations must be ensured and also the results of the programmes with reference to the identified major issues must be presented. The assessment process should be a continuous one, and should also be used to help obtain budget reinforcement, and obtain further support from co-operating partners.

82 **The Assembly decided** that the Medium-Term Strategy document should be revised taking into account the comments and proposals made and be attached to the Assembly Report as Annex VI.

C. PROGRAMME DEVELOPMENT

8. FOLLOW-UP OF THE 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

8.1 AGENDA 21 AND ACC SUB-COMMITTEE ON OCEANS AND COASTAL AREAS

83 In introducing this agenda item, the IOC Senior Assistant Secretary for Information and Co-ordination, Ms. N. Philippon-Tulloch, spoke also in her capacity as Secretary of the ACC Sub-Committee on Oceans and Coastal Areas. Following reference to the Annotated Provisional Agenda (Document IOC-XVIII/2: paras 29-33) and the Report of the Second Session of the Sub-Committee (issued as an information document as IOC/INF-989), she provided an overview of progress made to date by the Sub-Committee in fulfilling its responsibilities for monitoring, reporting upon and proposing ideas for implementation of Chapter 17 of Agenda 21.

84 Ms. Philippon-Tulloch made particular reference to the agreements reached by Members of the Sub-Committee at its first two sessions (FAO Headquarters, Rome, 19-21 April 1994 and WMO Headquarters, 23-27 January 1995) in regard to timely completion of its report which will be submitted through the Inter-Agency Committee on Sustainable Development (IACSD) to the Commission on Sustainable Development (CSD) in 1996 as concerns:

- (i) distribution of responsibilities among the participating agencies for each of the Programme Areas contained in Chapter 17, and
- (ii) progress made at the Second Session towards improving ways and means by which the UN System collaborates in implementation of Chapter 17 as a whole, including cross-sectoral issues, especially within the perspective of agreeing upon co-operative programme frameworks.

85 The Assembly was also informed of the consultations with Member States and concerned non-governmental organizations which would be undertaken by the CSD Secretariat in New York in the form of a questionnaire. The purpose of this questionnaire is to seek information from Member States as well as their views on relevant matters so that they can be taken into account in completion of the report. Noting that the diversity of sectoral subjects in Chapter 17 seen in the composition of the Sub-Committee is also reflected at the national level, Ms. Philippon-Tulloch encouraged IOC national contacts to make every effort to ensure that a full response was provided to the CSD Secretariat.

86 The Chairman of the Sub-Committee, Dr. S. Garcia, who also represented FAO, reiterated that collaboration between agencies will only be truly effective when based upon effective co-ordination at the national level, and also emphasized the importance of a concerted approach in mobilizing funding.

87 In the ensuing debate, a number of Member States provided information regarding national initiatives that were being stimulated as a result of UNCED and the stimulation provided through Agenda 21 as a framework for activities at the national, regional and global levels.

88 The Representative of the United Kingdom informed the Assembly of a UK Workshop on Environmental Science, Comprehensiveness and Consistency in Global Decisions on Ocean Issues, to be held 29 November-1 December 1995. In referring to the long-established need to raise awareness amongst high-level decision makers of ocean and coastal area concerns, he noted that the workshop was being organized following the initiative of the Secretary of State for the Environment who is also a member of the CSD.

89 Other representatives, including those of Canada, India and Indonesia, provided information on the development of specific national policy statements and guidelines as examples of how the UNCED process is beginning to bear fruit in regard to development of strategies on ocean and coastal area issues. All speakers emphasized the importance of accelerating efforts that would lead to integrated coastal area management and its related human and infrastructure aspects, the ocean component of which is an integral and vital element.

90 The Representative of the United Nations made special reference to the Train-Sea-Coast Programme which was being undertaken in collaboration with and several other UN bodies, including the IOC, and which would serve as a joint contribution to the human resource component of the co-operative programme frameworks being developed by the Sub-Committee.

91 **The Assembly emphasized** that a concerted approach within the UN System, together with appropriate national mechanisms, was an essential factor to successful implementation of Agenda 21 as a whole and Chapter 17 in particular.

92 **The Assembly conveyed** to the ACC Sub-Committee on Oceans and Coastal Areas its appreciation of the complexity of the tasks at hand and **suggested** the following observations as a contribution to its work:

- (i) the importance of a concerted approach within the UN System to human and institutional resource development at the national level;
- (ii) the need to encourage the establishment, or strengthening, of appropriate national coordination mechanisms for ocean and coastal area concerns;
- (iii) the need to take into account the socio-economic dimension, especially in regard to the priority that should be accorded to integrated coastal area management and, in particular, to "vulnerable" areas - whether influenced by critical dwelling, environmental degradation or natural disaster factors.

93 **The Assembly requested** the Secretary of the Sub-Committee to keep IOC Member States informed of action taken by the CSD Secretariat in regard to soliciting national input to the process of preparing a comprehensive report in 1996.

8.2 UN YEAR OF THE OCEAN 1998

94 The Chairman referred to Document IOC-XVIII/2, paragraphs 34-39, providing the necessary background for the item, and recalled Resolution XVII-17, which had initiated the process.

95 The Executive Secretary briefly introduced Document IOC-XVIII/2 Annex 4, explaining the proposed approach in using existing and planned IOC programme actions to support the Year of the Ocean, emphasizing public awareness creation and additional educational actions, as well as the proposal for an IOC preparatory task team for the IOC contribution to 1998 International Year of the Ocean. He also explained that, in view of the need for IOC to prepare public information and educational material, some financial resources for these preparations had been included in the proposed programme and budget 1996-97 (Document IOC-XVIII/2 Annex 7). He invited the *ad hoc* sessional group on the draft programme and budget to consider this matter.

96 In the ensuing debate, all delegations expressed strong support for IOC's participation and leading role within UNESCO, in the 1998 International Year of the Ocean, and in association with the United Nations System through the ICSPRO mechanism, as well as in seeking co-operation with non-governmental organizations in this matter. The great importance of public awareness creation and general educational activities was stressed by most delegations.

97 The Delegations generally concurred with the approach adopted in Document IOC-XVIII/2 Annex 4, and endorsed the creation of a time-limited preparatory task team, with regional participation. Several additional regions to those mentioned, e.g. Southeast Pacific through CPPS, and Western Atlantic through ASOS, expressed interest in also being involved in the task team.

98 This event in 1998 was considered by many delegations as a unique opportunity for IOC to create much more awareness about itself, at national and international levels.

99 The Year of the Ocean should be seen as a charter for public education as regards the role of oceans for society. Appropriate media mechanisms should be used; the IOC could possibly make an inventory of the TV material on ocean science-related actions and, if possible, create a special educational production. Posters should also be prepared for this purpose by IOC.

100 The Canadian Delegate proposed an Ocean Charter that could be developed further by the Executive Council and Assembly and possibly open for signature by governments during the Year of the Ocean in 1998. The draft text is included (Annex VII-A). This initiative was welcomed by several delegates. The Delegate also emphasized the promotion of 8 June as Ocean Day. He mentioned the "Summit of the Sea Conference", scheduled for 1997 in Newfoundland, and the hosting by Canada of the WOCE Conference in 1998.

101 The Delegate of Portugal provided additional information on the on-going planning of 1998 International Year of the Ocean and EXPO.98. The latter mechanism will also provide many opportunities for public awareness creation of the IOC. It is possible that aspects of EXPO.98 will be under the UN umbrella with UNESCO and IOC as the lead agency for that particular part. He referred to several planned conferences, including "Ocean and Society on the Threshold of the Third Millennium" and a Conference on satellite remote sensing on ocean applications in new technology. He invited IOC to consider association with these events, and to perhaps arrange some of its planned meetings in Lisbon at EXPO.98. This was seconded by some other delegations.

102 Several delegates furthermore informed the Assembly of national plans with respect to public awareness creation, education, policy formulation and the strengthening of the research link with users and applications.

103 The Delegate of Cuba referred to the organization in 1997 of the Fourth International Marine Science Conference in Cuba, and invited IOC to plan an associated regional activity.

104 All delegations confirmed the interest of their countries in participating in activities within the 1998 Year of the Ocean, in partnership with IOC. Many expressed interest in being associated with the preparatory task team. Specific proposals for actions were made, including the restoration of historical marks, and commemoration of historical voyages.

105 **The Assembly confirmed** IOC's association with 1998 Year of the Ocean and EXPO.98; **emphasized** that as far as possible the activities should be part of the planned or on-going IOC programmes and in conformity with present provisions; **stressed** the focus on public awareness creation and education; and **instructed** the Executive Secretary to follow-up the proposals made, using the basic approach presented in Document IOC-XVIII/2 Annex 4 (Annex VII-B), including the servicing of the task team, which, however, would work mainly through correspondence.

106 **The Assembly adopted** Resolution XVIII-3.

9. IOC AND UNCLOS

107 The Chairman introduced the agenda item, referring to documents IOC/INF-990 (Report of the *ad hoc* Working Group on IOC Responsibilities and Actions in Relation to UNCLOS), and IOC/INF-1007 (Summary Report of the IOC/OSNLR *ad hoc* Expert Consultation on UNCLOS).

108 He referred to the Twenty-seventh Session of the IOC Executive Council, Paris, 5-12 July 1994, when the item "IOC In Relation to the UN Convention on the Law of the Sea" was considered, in view of the imminent coming into force of the Convention. The Executive Council discussed at some length document IOC/EC-XXVII/15 (IOC and UNCLOS: Responsibilities and Actions) prepared by Prof. Yankov in co-operation with the Secretariat, and decided to establish an *ad hoc* Intersessional Working Group on IOC Responsibilities and Actions in Relation to UNCLOS with clearly defined terms of reference, to further study the implications of UNCLOS on IOC and suggest actions to be taken.

109 He briefed the Assembly on follow-up actions taken by the Secretariat in accordance with the decisions of the Executive Council in terms of IOC short-term responsibilities, including the compilation of a list of experts for use by the Special Arbitral Tribunal together with activities to assist the work of the Commission on the Limits of the Continental Shelf (CLCS), both actions taken at the request of UN-DAOLOS. He also informed the Assembly of actions taken in relation to the *ad hoc* working group on UNCLOS, which had been established as an open-ended group of the Executive Council. He stressed the need for the IOC to carry out its long-term duties in relation to UNCLOS, especially in the promotion of marine scientific research, training and capacity building, the transfer of marine technology, in addition to IOC short-term responsibilities in relation to the Special Arbitral Tribunal and the CLCS. He pointed out that the Assembly might wish to move towards a clear definition of specific role and responsibilities for the IOC based upon which IOC could take the appropriate further actions.

110 At the invitation of the Chairman, Prof. Yankov, the author of Document IOC/EC-XXVII/15 and former Chairman of Committee III (on marine scientific research and protection and preservation of the marine environment) of the Third UN Conference on the Law of the Sea (1973-1982), gave some additional background information on the subject. He noted that the responses from the *ad hoc* working group on UNCLOS concurred with the proposed new and evolving responsibilities of the IOC and the logical expansion of IOC's existing functions and actions as a result of UNCLOS, as well as the classification of IOC's new role and responsibilities into three categories as mentioned in Annex II of Document IOC/EC-XXVII/15. He pointed out that the revised version of the role and responsibilities presented in Annex II of IOC/INF-990, with proposed adjustments, still need further elaboration so as to more fully reflect the possible role and responsibilities of IOC. He suggested that IOC should co-operate with the International Sea-Bed Authority whose present work is mainly to conduct research, studies and assessment in relation to the exploitation and exploration of deep sea resources. He drew the attention of the Assembly to the special role of international organizations, in accordance with Article 247 of the Convention, to possibly facilitate marine scientific research through the formulation of more detailed and practical guidelines, criteria and procedures in addition to the efforts made by the United Nations in this regard.

111 The Executive Secretary IOC also drew the attention of the Assembly to the UN General Assembly's resolution on the Law of the Sea at its Forty-ninth Session, December 1994, which *inter alia*, called upon the designated, competent international organizations to take specific actions to ensure the effective implementation of the Convention. He informed the Assembly that IOC has been invited by the UN to contribute to the Annual Report of the UN Secretary-General on the Law of the Sea at the Fiftieth Session of UN General Assembly.

112 To facilitate discussion on the subject, the Assembly decided to establish an open-ended sessional working group led by the Second Vice-Chairman, Dr. Metalnikov, to first exchange views on the subject.

113 The sessional Working Group held three meetings on 16, 19 and 20 June, with the participation of about twenty delegations. The following main concerns were expressed:

- (i) Document IOC/INF-990 is based on a very limited number of responses from Member States to the IOC Circular Letter No. 1436 in the light of the decisions of the Twenty-seventh Session of the Executive Council, and includes little and insufficient adjustments to Document IOC/EC-XXVII/15, particularly its Annex II (List of Articles of UNCLOS Relevant to the Role and Functions of IOC), which is considered not to have correctly reflected the IOC role under UNCLOS and requires reconsideration and redrafting (see statements of Argentina and Brazil in Annex III-G);
- (ii) There are questions on the juridical basis of IOC holding consultations on issues in relation to the Commission on the Limits of the Continental Shelf (CLCS) since Document IOC/EC-XXVII/15 was strongly questioned during the last Executive Council. Some wording in IOC/INF-1007 does not truly reflect the provisions of UNCLOS (see statements of Argentina and Brazil in Annex III-G);
- (iii) More time is needed to examine IOC/INF-990 and IOC/INF-1007 before substantial comment could be made;
- (iv) The decision of the Twenty-seventh Session of the Executive Council has not been fully implemented regarding the establishment of an intersessional working group on IOC responsibilities and activities related to UNCLOS. For this reason, there is a need to establish such a special group to study the matter.

114 Many Delegations expressed their general support for IOC to take positive and effective action to respond to UNCLOS as a competent international organization in the field of marine scientific research.

115 The Delegate of Greece proposed that a meeting of the open-ended intersessional Working Group on IOC in Relation to UNCLOS be hosted in Greece. This proposal is subject to official confirmation from the Greek Government to the Executive Secretary IOC. The Assembly thanked the Delegate of Greece for this offer.

116 The Delegate of Pakistan suggested that IOC publish a handbook on IOC and UNCLOS highlighting those provisions of UNCLOS that fall within this area of competence of IOC, which will help increase the visibility of IOC in governments in the context of UNCLOS.

117 The Delegate of the Russian Federation noted that UNCLOS presents a satisfactory balance with regard to the inter-relation between the rights of coastal and researching States concerning marine scientific research on the continental shelf and in the Exclusive Economic Zone. This is why B.2 of the Annex to IOC Resolution XVIII-4 does not reflect this balance, has no direct connection with the role of IOC, and has a more political than legal nature.

118 The Delegation of Turkey sees the ultimate objective of the work to be carried out by the Working Group as the achievement of technical and scientific co-operation to which the Turkish Government is fully and enthusiastically dedicated. It sees great merit in this ultimate goal and has pursued it long before its signature of the UN Convention on the Law of the Sea.

119 The Delegation of Turkey understands that issues pertaining to general legal aspects of UNCLOS and their political implications, are strictly outside the scope of the task of the Working Group and the results of the work of the Working Group will in no way prejudice the positions of the Government with regard to UNCLOS.

120 **The Assembly took note** with satisfaction of the consensus achieved in the *ad hoc* sessional working group on UNCLOS concerning the ways to proceed with the work in relation to UNCLOS through an *ad hoc* intersessional working group with its terms of reference. **The Assembly expressed** its appreciation to Dr. Metalnikov for successfully chairing the sessional working group as well as to all participants for their spirit of co-operation and willingness to find a solution.

121 **The Assembly noted** that the study on the implications of UNCLOS on IOC has been carried out since the early 1980s and thus should be completed as soon as possible, so that IOC could concentrate on the actual implementation of relevant activities.

122 **The Assembly adopted** Resolution XVIII-4.

10. OCEANS SCIENCES

10.1 OCEANS AND CLIMATE

123 The Chairman made a brief overall introduction referring to previous decisions and resolutions of the Assembly at its Seventeenth Session (1993) and the Executive Council at its Twenty-seventh Session (1994). These demonstrate the importance that the Commission attaches to the issue of oceans and climate. In particular, he recalled the decision of the IOC to formally co-sponsor WCRP, and to become associated with the Interagency Co-ordinating Committee on the World Climate Programme. He recalled the participation of the IOC in the Second World Climate Conference in 1990 and the Intergovernmental Meeting on the World Climate Programme in 1993. He also referred to the participation of the IOC in the Intergovernmental Negotiating Committee on a Framework Convention on Climate Change and the First Conference of the Parties to that Convention in 1995.

124 The Chairman then suggested that, in view of the inter-relationship of the sub-items of this Agenda item, the introductions be made in sequence, and that in the subsequent debate Delegations should identify which sub-items they are addressing. He drew the attention of the Assembly to the relevant pages in the Expanded Annotated Agenda (Document IOC-XVIII/2), and the actions requested of the Assembly.

10.1.1 WCRP-JSC, including TOGA and CLIVAR

125 Dr. Hartmut Grassl, Director of the WCRP, began his introduction of this agenda item by reviewing the successes of the completed TOGA programme and the remarkable degree of international participation in the current intensive observational phase of WOCE that will result in some 90% of the WOCE Hydrographic Programme (WHP) sections being occupied. The increasingly skillful forecasts of El Niño, up to a year in advance in some cases, are already being used to advantage by a few nations in crop planning, water resource management, etc. The post-TOGA emphasis is now to spread the benefits being realized by these few nations to all the nations affected by the ENSO by enhancing their capability to exploit climate forecasts. In the case of WOCE, the focus is to lay the groundwork for the development of longer range climate predictability. The new WCRP initiative, the Climate Variability and Predictability (CLIVAR) Programme aims to advance the understanding of natural climate variability as well as the influence of human activities on this variability and to determine climate predictability on both the interannual and interdecadal timescales. Dr. Grassl stressed that he was very pleased with the way the WMO-IOC-ICSU were co-operating and that the WMO Congress had just approved the continuation of this co-sponsorship arrangement for the WCRP. He emphasized that the co-sponsorship by the IOC of the WCRP had ensured the full involvement of the oceanographic community in that Programme, which is of utmost importance for its success.

126 **The Assembly expressed** its appreciation to Dr. Grassl for his introduction and its satisfaction with IOC's participation in and contribution to the WCRP. **The Assembly decided** that the IOC should continue this co-sponsorship.

10.1.2 WOCE

127 Dr. John Church informed the Assembly of the excellent progress in WOCE and reminded the Member States that the important next phase, the analysis, interpretation modelling and synthesis phase, was scheduled to continue through 2002. He described the functioning network of data centres and analysis centres set up to facilitate this phase and illustrated some of the early impressive results of the WOCE program derived from preliminary analyses of few of the first sections completed in the WHP. A North Atlantic section at 24°N shows long-term warming consistent with model predictions of global warming, while another section at 58°N shows unexpected long-term cooling. Some of the early tracer observations of high latitude deep convection revealed defects in the parameterization of the processes in models. The TOPEX-POSEIDON observations underscore the value of high quality altimeter observations for measuring long-term ocean circulation variability. He called on nations to enlarge the community of scientists involved in data assimilation, to assure the continuation of high quality satellite altimeter observations and to give high priority to a gravity mission to extract the most value from the altimeter data. He concluded his presentation by noting that the real payoff from WOCE depended on completion of the WHP sections from shore to shore and the analysis and synthesis phase. The former depends on access to EEZ waters of Member States in order to obtain measures of heat and other transports across the sections. The latter depends on strengthening the international data assembly and special analysis centres and safeguarding funding for WOCE through its scheduled completion in 2002.

128 Dr. Leonard Otto reported on the outcome of the meeting of the Intergovernmental WOCE Panel held the week prior to the IOC Assembly. He drew the attention of the Assembly the Executive Summary (Document IOC-WMO/IWP-III/3S) which contained a number of recommendations the Panel believed were fundamental to the realization of the full benefit of the enormous resources already invested in WOCE. These recommendations were incorporated in **Resolution XVIII-5** which was **adopted** by the Assembly. He emphasized several points in relation to these recommendations where action by Member States is called for:

- (i) Access to certain areas under national jurisdiction where close-to-shore boundary currents exist is crucial to completing the WHP sections necessary for calculating heat, fresh water and other transports.

- (ii) Secondments by Member States for even short periods of 3-6 months to the DACs and SACs will help the staffs of these centers to acquire and process WOCE data. This assistance would be of direct benefit to the Member State as well, in that it would enhance the capability of the seconding nation to utilize data and realize the full benefit of the entire WOCE system of data centres, a network which is destined to be taken over by CLIVAR after WOCE.
- (iii) The International WOCE Conference to be hosted by Canada in 1998 merits the full support of all Member States.

129 Several delegations informed the Assembly of national activities in relation to WOCE. They all emphasized the need to ensure the completion of WOCE, welcomed the recommendations and, in particular, the proposed WOCE Conference planned for 1998.

130 **The Assembly reconfirmed** the strong commitment of IOC to the completion of WOCE and **endorsed** the results and recommendations of the Third Session of the IWP.

10.1.3 Relations with UN-FCCC, including the First Conference of the Parties (COP), and IPCC

131 Referring to the request of the Executive Council at its Twenty-seventh Session (Document IOC/EC-XXVII/3, para 30), the second Vice-Chairman presented the in-depth Report on Climate-related Issues with an attached draft resolution for consideration by the Assembly (Document IOC-XVIII/2 Annex 5). He referred to the specific provisions of Chapter 17 of Agenda 21 of UNCED which requested IOC and other relevant competent United Nations bodies, with the support of countries having the resources and expertise, to carry out analysis, assessments and systematic observations of the role of oceans as a carbon sink. The report has three main sections devoted to, respectively, IOC activities in the World Climate Programme, in the UN-FCCC and COP process, and in the IPCC, as well as an additional part concerning IOC's interaction with the GCOS.

132 Attention was drawn to some results of a number of specific events:

- (i) Conclusion and recommendations of two meetings of Scientific and Technical Experts organized in Malta in 1991 and 1994, by the IOC with the support of the Foundation of International Studies of the University of Malta;
- (ii) A special paper "CO₂ and Ocean: A review of the State of Knowledge", edited by Arthur G. Alexiou;
- (iii) The briefing on sea-level rise for AOSIS States, provided by the GLOSS Chairman Dr. David Pugh at INC-X;
- (iv) The transfer of related IOC publications to the UN-FCCC Secretariat.

133 Among the actions proposed for the future were:

- (i) Strengthening the co-operative links between IOC and IPCC, and IOC and SBSTA of the UN-FCCC/COP;
- (ii) Preparation of the GLOSS Sea-Level information data base on floppy disks for demonstration and distribution among AOSIS States during the COP-2 of UN-FCCC (1996);
- (iii) Organization of the third meeting of Scientific and Technical Experts in Malta for consideration of the problem of greenhouse gases (besides CO₂) interactions with World Ocean;
- (iv) Initiation of the Coral Reefs Study from the carbon accumulation viewpoint;
- (v) Preparation and transfer to the IPCC of the list of the IOC experts.

134 Many delegations expressed support to IOC's association with the development and implementation of relevant aspects of the UN-FCCC and related bodies.

135 The representative of the UN-FCCC Secretariat, Mr. Sálvano Briceño, made a statement in which he informed the Assembly as to how the UN-FCCC was created, developed and signed in 1992 in Rio. He pointed out that the Convention came into force in March 1994, and is now ratified by 136 states. He also informed the Assembly that in April 1995 the COP-1 was held in Berlin and important decisions were made such as the adoption of the "Berlin mandate" for negotiation of the next step in the reduction of anthropogenic carbon dioxide emissions by developed states. He noted that two subsidiary bodies were established by the Convention - for Science and Technical Advice and for Implementation (SBSTA and SBI) and they would be meeting soon. He recommended the Assembly to strengthen links with the IPCC and participate in the SBSTA. He also noted the importance of the ocean-atmosphere interaction and underlined the significance of systematic observations for UN-FCCC. He set much store by the IOC's efforts to present the best available knowledge related to oceans and climate. He also thanked the IOC for the support provided thus far to the UN-FCCC Secretariat. His statement is given in Annex III-H to this report.

136 **The Assembly decided** that IOC should maintain its links and co-operation with bodies and mechanisms of the UN-FCCC, in particular with the Climate Change Secretariat and the SBSTA.

10.1.4 OOSDP and the Second Meeting of Scientific and Technical Experts on Oceans and Climate (Malta, 1994)

137 Dr. Arthur Alexiou introduced this item by bringing to the attention of the Assembly the complete set of publications produced by the OOSDP which includes a comprehensive Final Report and seven scientific background reports. He noted that the final document had gone through several stages of review before being published. The report has been endorsed by the JSC of the WCRP, the JSTC, and J-GOOS, which forwarded it to I-GOOS. I-GOOS has agreed to form a Panel to consider the Report from a Member State's implementation perspective. J-GOOS, JSTC and the JSC have taken steps to establish a follow-on Ocean Observations Panel for Climate (OOPC). J-GOOS is also planning to open the OOSDP report to a wider audience via a 3-4 day workshop in order to generate more public debate among implementation agencies and managers of user groups of ocean climate observations.

138 Dr. Alexiou also introduced the separate item concerning the second meeting of Scientific and Technical Experts on Oceans and Climate hosted by the Government of Malta. As a direct consequence of international agreements embodied in Chapter 17 of Agenda 21, this meeting was oriented to the problem of the oceans and CO₂, with particular consideration of the ocean capacity as a CQ sink. The magnitude of uncertainties in ocean carbon fluxes is still too large to reliably partition between the land and the ocean, the fate of that fraction of the anthropogenic CO₂ that is known to have been injected into the atmosphere that is not there now. The Malta 1994 meeting provided a basis for developing a strategy for further analyses, assessments and observations called for in Agenda 21. It is important for IOC to maintain this activity and assure a response to the Commission on Sustainable Development with respect to Chapter 17 of Agenda 21.

139 Many delegations made interventions on the these items that included descriptions of their contributions to climate studies as well as comments regarding IOC's climate-related activities. All comments were in the same vein, recognizing IOC's support of developing countries' participation in ocean climate science activities such as IAPSO, as well as congratulating IOC for the Malta document and voicing continued support for WOCE, CLIVAR and other programmes of the WCRP with particular mention of the WOCE International Conference and encouraging continued joint efforts with ICSU and WMO and the continued joint efforts with SCOR and JGOFS with regard to ocean CO₂. They also reacted favourably to the OOSDP Report and the establishment of a joint follow-on OOPC. The importance of moving forward with the climate module of GOOS was noted by referring to the success of TOGA and the benefits already being accrued by some countries and that efforts should be accelerated to spread these benefits to all nations impacted by ENSO. Strengthening of links with other intergovernmental climate activities, such as the IPCC, by assigning a specific individual within the IOC secretariat to serve as liaison and co-ordinator for all its climate-related activities was encouraged. It was agreed that the IOC should also invite Professor Bert Bolin, Chairman of the IPCC, to address the next Assembly as a means of enhancing further the IOC's contribution.

The Assembly adopted Resolution XVIII-6.

10.1.5 World Climate Programme (WCP) Joint Proposal

140 The Executive Secretary of the IOC presented "The Climate Agenda" (Document IOC-XVIII/Inf.1), which contains the Extensive Policy Makers' Summary and the Executive Summary of the "Climate Agenda". The proposal for this Integrating Framework was prepared by FAO, ICSU, UNEP, UNESCO and its IOC, and WMO, through the Co-ordinating Committee for the World Climate Programme. He explained that it had been agreed that this would be presented to the governing bodies of the co-sponsors. The Assembly was then invited to provide its comments. The requirements and needs of systematic observations as regards climate change are important justifications of this serious development of the WCP initiated by the intergovernmental meeting on WCP held in Geneva, April 1993. The implementation of this significant, wide-ranging programme needs to properly develop the mechanism of co-ordination on international and national levels. In this connection, the IOC participation in this process is extremely important, including membership in the Inter-Agency Co-ordination Committee.

141 Seventeen delegations took part in the discussions on this item. All of them recognized the IOC participation in climate-related programmes as successful and important. Many delegations stressed the need to continue the IOC contribution in this direction.

142 **The Assembly decided** that IOC should continue and expand its association with the WCP, and **endorsed** the Climate Agenda.

10.2 OCEANS AND GLOBAL CHANGE: LOICZ; JGOFS, INCLUDING CO₂ PANEL; COASTAL ZONES (COASTS)

143 The Executive Secretary introduced the item referring to Document IOC-XVIII/2, item 10.2 and Documents IOC/INF-987 and IOC/INF-987 Add. He recalled Resolution XVII-1 "Coastal Zone Activities" through which the Assembly had set up an *ad hoc* IOC Group of Experts on Coastal Zone Activities including representatives from Member States and the Commission's regional and global programmes. This group was requested to prepare a report for this Assembly. Since the Working Group had completed its mandate through the presentation of Document IOC/INF-987, he proposed that the *ad hoc* IOC Group of Experts had completed its work and could be terminated.

144 With respect to training matters he recalled that IOC is a partner in the UN (DOALOS)-UNDP Train-Sea Coast Programme, at present, as regards IOC, with emphasis on Africa.

145 The Executive Secretary also recalled several activities of the IOC related to ICAM at regional level, and the association of these activities with the Coastal Change Conference (Bordeaux 1995) through regional preparation of related cases on coastal zone studies and management aspects, which can provide input for a series of manuals.

146 He recalled the instruction to the Secretary IOC during the Twenty-seventh Session of the Executive Council to develop a training programme on integrated coastal zone management for the benefit of managers, decision-makers and technicians who are actually involved in coastal zone management and to submit a draft programme to this Assembly. This proposed draft programme is presented in Document IOC/INF-987 Add.

147 He briefed the Assembly on the development of the Coastal Ocean Advanced Science and Technology Study (COASTS), the Workshop in Liege, May 1994, and the continued development of the programme at regional level in WESTPAC through modelling and observation of the coastal zone circulation.

148 He informed the Assembly on IOC's involvement in coral reef monitoring and research activities through the pilot monitoring experiment (see item 11.1.1), and the co-ordination of this activity with the International Coral Reef Initiative (ICRI) and the support provided from the United States of America to this end, as well as offers of support from several other Member States.

- 149 The Executive Secretary informed the Assembly that IOC has a Memorandum of Understanding on co-operation with IGBP-LOICZ, and that co-operation with LOICZ is proceeding well. The IOC was a co-sponsor of the recent open science meeting of LOICZ (The Philippines, 24-28 April 1995) where agreement had been reached on cooperation between LOICZ and the IOC regional subsidiary bodies in Africa (IOCEA and IOCINCWIO) in the implementation of the LOICZ regional activities in those parts of Africa.
- 150 He noted that the CO₂ question and JGOFS had been partially considered under item 10.1.
- 151 Finally, the Executive Secretary mentioned the IGBP/START initiative, which is now also sponsored by WCRP and SHS. Through WCRP, the IOC is thus also associated with START. He suggested that the need for co-ordination and harmonization of related training activities be discussed under TEMA (Agenda item 12).
- 152 **The Assembly endorsed** the Report on Coastal Zone Studies and Co-ordination of Coastal Zone Activities with its Addendum and agreed that the *ad hoc* Intersessional Working Group on Coastal Zone Activities, having fulfilled its mandate, was hereby terminated.
- 153 **The Assembly noted** with satisfaction the various activities carried out by the IOC on both a regional and global basis and IOC's role in the co-ordination of system-wide coastal zone activities, as reflected in Document IOC/INF-987.
- 154 Some delegations put questions on the IOC contribution to and role in the newly proposed UNESCO Project on Environment and Development in Coastal Regions and in Small Islands, which is based on the joint statement of the chairpersons of IOC, IHP, MAB, IGCP to Commission III of the 27th General Conference of UNESCO. It aims at ensuring co-ordination among the relevant UNESCO programme activities in IOC, MAB, IHP and IGCP and MOST. These delegations expressed their concern on the possibility of losing unity for IOC/MRI in this proposed Project. Some argued that since this Project is more concerned with the coastal zone and IOC/MRI contributes a greater part of the fund, IOC/MRI should take the leading role in this project. **The Assembly established** a small *ad hoc* sessional working group chaired by the Fourth Vice-Chairman, to define the possible activities of IOC during the intersessional period, in particular, with respect to the proposed intersectorial project.
- 155 **The Assembly emphasized** that coastal zone activities represent a new development for IOC, as well as a major trend in the development of future IOC activities. **The Assembly realized** that integrated coastal area management (ICAM) is a very complicated process and involves efforts both in terms of the interdisciplinary study of natural and social sciences and well co-ordinated administration at various levels. **The Assembly encouraged** more interaction between IOC scientific programmes and socio-economic aspects in the further implementation of coastal zone activities. **The Assembly decided** that a co-ordinator should be designated in the IOC Secretariat to ensure the effective linkage between scientific programmes and coastal zone management needs.
- 156 **The Assembly realized** the need to streamline the existing IOC coastal zone-related activities, define a co-ordinator, and possibly develop a harmonized and focussed coastal zone programme which will be distinct from existing IOC activities and with separate funding. This could be the dedicated training programme outlined in IOC-INF/987 Add. **The Assembly urged** the strengthening of the present subject-oriented programmes, e.g. OSLR, OSNLR, GIPME, and others, so as to produce more products from these programmes for users.
- 157 **The Assembly also realized** the importance of developing common methodologies to be used by marine scientists in coastal zone management, and agreed that IOC should take initiatives in this respect. **The Assembly acknowledged** the importance of a regional approach in coastal zone management and flexibility in adopting top-down or bottom-up approaches in different cases.
- 158 Many delegations briefed the Assembly on their national activities, experience and plans in the coastal zone. The Delegate of the Netherlands informed the Assembly on their initiative to attract donors to various aspects of integrated coastal zone management and invited IOC to become involved in this activity. **The Assembly took note** of this information with appreciation.
- 159 **The Assembly attached** much value to IOC/INF-987 Add. as an excellent framework on the IOC coastal zone training programme, particularly to the classification of three categories of training courses, to

serve the needs of different target groups of managers. **The Assembly emphasized** the importance of data collection using GIS in coastal zone management and suggested that the use of GIS be included in all categories of proposed IOC training courses. The Delegates of Turkey and China made offers to organize such proposed international coastal zone management training courses in co-operation with IOC in their countries, possibly in 1996. **The Assembly expressed** its thanks for these offers.

160 With regard to IOC co-operation with IGBP, **the Assembly took note** with satisfaction of the progress, particularly in terms of the conclusion of a Memorandum of Understanding with LOICZ, the IOC co-sponsorship of IGBP/START and the continued interaction with SCOR-JGOFS mainly through the CO₂ Panel, and urged the Executive Secretary IOC to ensure that this co-operation be further maintained and broadened, particularly in its co-operation with START, using extrabudgetary resources.

161 Several Delegations expressed their thanks to IOC for sponsoring their scientists' participation in the LOICZ meeting in the Philippines.

162 Considering the Memorandum of Understanding between LOICZ and IOC, the Delegation of Nigeria supported the recommendations of the African group at that meeting and urged IOC to co-operate with LOICZ in the implementation of the recommendations.

163 **The Assembly adopted** Resolution XVII-7 on "Coastal Regions and Small Islands", and **invited** the IOC Action Addressees to bring this Resolution to the attention of the UNESCO National Commissions.

10.3 OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR); IPHAB; GLOBEC; CONVENTION ON BIOLOGICAL DIVERSITY

164 The presentation and discussion of the OSLR Programme focussed on Harmful Algal Blooms, Marine Biodiversity, and the SCOR-IOC-ICES-PICES International Global Ocean Ecosystems Dynamics (GLOBEC) Programme.

165 The Executive Secretary IOC recalled Resolution XVII-2, adopted by the Seventeenth Session of the Assembly, on the refocussing of the OSLR Programme. In the intersessional period the OSLR Programme has developed with respect to Harmful Algal Blooms and marine biological diversity. Other components of the Programme have been maintained, but their development has been impeded by lack of a permanent Technical Secretary for OSLR, as well as lack of funds.

166 The Representative of FAO informed the Assembly that due to resource problems and the need to focus on selected actions, FAO has decided to withdraw as formal co-sponsor of OSLR. He noted that the present activities of OSLR no longer corresponded to the priorities of FAO. Nevertheless he stressed that FAO continues to have an interest in the science needed to understand oscillations of marine living resources and in drawing on the scientific advice of, e.g., IPHAB. FAO will also co-operate in the Living Resource Module of GOOS, and GLOBEC.

167 The out-going Chairman of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms (IPHAB), Dr. Bernt I. Dybern (Sweden), introduced the problems associated with harmful algae, and informed the Assembly of the developments of the HAB Programme as well as the decisions and Recommendations of the Third Session of the Panel. The occurrence of harmful algae was presented as a global problem which has serious economical and health impacts in many Member States. The HAB Programme Office needs additional staff to ensure continuity of Programme development and implementation. The HAB Training and Capacity Building Programme is proceeding well, but requires the persistent support of Member States. The formation of working groups on marine biotoxins, transfer of phytoplankton by ballast water of ships, and a regional HAB working group for South America, are recommended to facilitate scientific progress. The incorporation of HAB monitoring into national, regional and inter-regional GOOS activities is considered a priority.

168 The Chairman of the IOC-NOAA *ad hoc* Consultation on Marine Biodiversity, Prof. Ulf Lie (Norway), referred to Document IOC-XVIII/2 Annex 9, and presented the results and Recommendations

of the Consultation (Paris, 3-5 May 1995), with respect to: (i) the requirement for a fundamentally different approach to studies of biological diversity in the marine environment than in the terrestrial one; (ii) the need to provide education at the community level on the value of marine biodiversity in sustainable utilization of marine resources; (iii) the importance of monitoring changes in marine biodiversity and ecosystem conditions; (iv) the need for advice on proper and relevant data management along with training programmes for development of national inventories; (v) the effects of possible exploitation of sea-bed resources on deep-sea biodiversity; (vi) the reduction of collections within museums and scientific institutions due to budgetary and staff shortages; (vii) the scarcity of experts on the taxonomy of marine organisms, particularly in developing countries, the necessity to upgrade taxonomic expertise and the need for para-taxonomists for the rapid assessment of biodiversity; (viii) the importance of the protection of species and habitats including an integrative perspective.

169 The Deputy-Secretary of the Secretariat to the Convention on Biological Diversity, Mr. Ahmed Djoghlaif, recalled the history of the Convention and its objectives, and referred to the medium-term programme of work for 1995-97 adopted by the Conference of the Parties to the Convention on Biological Diversity at its First Session (Nassau, Bahamas, 28 November-9 December 1994), which, *inter alia*, concerns the conservation and sustainable use of coastal and marine biological diversity. Reference was made to the First Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to the Conference of the Parties to the Convention, the Agenda of which includes an item dealing with scientific, technical and technological aspects of the conservation and sustainable use of coastal and marine biological diversity. He informed the Assembly that the meeting would take place at UNESCO Headquarters, 3-7 September 1995, and remarked that this has to be seen as a sign of co-operation between the Convention, UNESCO, and IOC. He referred to the IOC-NOAA *ad hoc* Consultation on Marine Biodiversity as a very important contribution of IOC to the activities of the Convention on Biological Diversity, and pointed out the existing basis for co-operation between the IOC and the Convention.

170 The Executive Secretary IOC introduced the GLOBEC item and referred to Resolution IOC-XVII-2, which endorsed IOC co-sponsorship of the GLOBEC Programme. He pointed out that IOC's role is to ensure intergovernmental linkages and that GLOBEC should be associated with other international research programmes.

171 **The Assembly responded strongly** to the issues with twenty-two Delegations providing comments regarding their interest and participation in OSLR activities.

172 **The Assembly noted** the need for a permanent Technical Secretary for OSLR, and the need for staff for the HAB Programme Office, and expressed its grave concern about the present situation as regards staffing.

173 **The Assembly noted with appreciation** the secondment by Denmark and Italy of Associate Experts for OSLR.

174 **The Assembly welcomed** the indication from the United States at the Seventeenth Session of the Assembly, that it would consider the partial financing of a permanent post as Technical Secretary for OSLR, and expressed its great appreciation that this had been fulfilled, and that funds had been made available to the IOC, but **noted with concern** that matching funds had not yet been identified.

175 **The Assembly noted** with regret the withdrawal of FAO as co-sponsor of OSLR, and stressed the importance of proper linkage between relevant IOC activities and the fisheries community, e.g. with respect to the further development of the Living Resource Module of GOOS.

176 **The Assembly urged** that negotiations be taken up at the appropriate level of UNESCO-IOC and FAO so as to ensure the basis for continued joint activity and co-operation.

177 **The Assembly commended** the IPHAB on its achievements, and the Secretariat on its fast development and co-ordinated implementation of the Programme with relatively few resources. The HAB Programme was referred to as a model for an inter-disciplinary programme combining research, monitoring, training, and policy aspects of a problem. Several Member States referred to their serious problems with harmful algae, and the establishment of national HAB groups.

- 178 **The Assembly stressed** the need to develop existing and new regional components of the HAB Programme.
- 179 **The Assembly noted with satisfaction** the opening of the IOC Science and Communication Centre on Harmful Algae at the University of Copenhagen, Denmark on 5 May 1995. The Centre is established for a five-year period, and has been made possible through a major contribution to the IOC Trust Fund by Denmark (DANIDA).
- 180 The Delegate of Spain informed the Assembly on the progress in establishing an IOC Science and Communication Centre on Harmful Algae at the Instituto Español de Oceanografía, Vigo, Spain, as offered by Spain at the Seventeenth Session of the Assembly. The Centre is expected to be established for the period 1996-2000 through a contribution to the IOC Trust Fund or another appropriate arrangement with IOC.
- 181 **The Assembly noted with satisfaction** the planned opening of the Centre in Vigo in 1996.
- 182 **The Assembly thanked** the United States for its offer to let the National HAB Office at the Woods Hole Oceanographic Institution serve the Programme.
- 183 **The Assembly took note** of the information that the Science and Communication Centres will, in particular, focus on the implementation of the HAB Training and Capacity Building Programme, and communication and information networks, and that activities of the Centres will be complementary and co-ordinated by IPHAB and the IOC Secretariat.
- 184 **The Assembly welcomed** the indication by Japan that it will provide additional resources to the IOC Trust Fund for HAB training activities in WESTPAC.
- 185 **The Assembly also welcomed** the indication from Italy that it will strengthen the activities of the IPHAB through the new Chairman of IPHAB, Dr. Adriana Zingone (Italy).
- 186 **The Assembly welcomed** the offer from Sweden and Chile to support the preparation and publication respectively of information leaflets on the HAB Programme.
- 187 **The Assembly stressed** the need to ensure appropriate co-ordination between HAB Programme activities on marine biotoxins, monitoring, and transfer by ballast water of ships, and the already identified activities on the same topics by the GIPME Groups of Experts and the Health of the Ocean Panel for GOOS.
- 188 The Representative of ICES confirmed the continued co-operation with IOC on addressing the important and urgent problems related to HAB, including the already existing ICES-IOC Working Group on the Dynamics of Harmful Algal Blooms. ICES appreciated the opportunity to participate in IPHAB-III. ICES welcomed the support of IOC and IMO in helping to ensure the success of a theme session on "Ballast water: ecological and fisheries implication" at the ICES 1995 Annual Science Conference, Aalborg, Denmark, September 1995. This event has attracted cutting-edge papers from all over the world. In this context the proposals contained in Recommendation IPHAB-III.3 on the formation of a new working group on ballast water with ICES and IMO co-sponsorship is both timely and appropriate. ICES will give this matter urgent consideration, should the working group be established.
- 189 **The Assembly adopted** Resolution XVIII-8.
- 190 **The Assembly noted** the importance for IOC to be associated with the Convention on Biological Diversity, in view of the scientific advice which IOC can provide to the Conference of the Parties to the Convention, through its SBSTTA.
- 191 **The Assembly took note** of the recommendations of the IOC-NOAA *ad hoc* Consultation on Marine Biodiversity, including the proposed establishment of a two years IOC Pilot Programme on Marine Biodiversity.

192 **The Assembly agreed** on the urgent need to identify parameters and development of methodologies for monitoring changes in marine biodiversity.

193 **The Assembly took note** of the information on the activities of the Expert-center for Taxonomic Identification (ETI) in Amsterdam, which was set-up by the Government of the Netherlands and the University of Amsterdam, with the assistance of UNESCO. ETI serves as a mechanism for compilation of taxonomy-oriented products as well as training activities, and is presently contributing to the IUBS-ICSU-IUMS Species 2000 Programme.

194 **The Assembly stressed** the importance of co-operation with UNEP and FAO for marine biodiversity, as well as the UNESCO Man and Biosphere Programme.

195 Several Delegations referred to national activities in the field of marine biodiversity and the importance of addressing marine biodiversity also from a deep-sea perspective. **The Assembly welcomed** the suggestion from the Russian Federation to establish a long-term deep-ocean international programme on the study of marine biodiversity in hydrothermal vents.

196 The Delegate of the Islamic Republic of Iran urged IOC to closely co-operate with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), bearing in mind the Terms of Reference of CITES and the immense experience gained by this relevant body with regard to the protection of endangered species/creations, including marine biological resources. Such co-operation would enable IOC to fulfill its commitment more appropriately in this regard.

197 **The Assembly adopted** Resolution XVIII-9.

198 **The Assembly reiterated** the importance of GLOBEC and expressed strong support for continued IOC participation in its further development.

199 Several Delegations noted that GLOBEC is essential to supplement information gathered by other international research programmes, e.g. WOCE.

200 The Representative of ICES informed the Assembly that an ICES Project Office for the co-ordination of activities within the GLOBEC Cod and Climate Programme will be opened by the end of 1995. The Office will be sponsored by USA and Norway.

10.4 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR) INCLUDING THE CONFERENCE ON COASTAL CHANGE (BORDEAUX, 1995)

201 Dr. Claude Latouche, IOC Consultant for the programme Ocean Science in Relation to Non-Living Resources (OSNLR), introduced the agenda item, referring to IOC Workshop Report No. 105 and Document IOC/INF-987. He presented the most important actions in OSNLR during the intersessional period. The Coastal Change Conference (Bordeaux, France, 6-10 February 1995) was organized following Resolution XVII-3 of the Assembly relative to the development of OSNLR. One of the major aims of the Conference within the framework of, and as a follow-up to UNCED, was to examine the nature, origin and impact - including socio-economic effects - of physical coastal changes and to facilitate effective communication between scientists and the user community. The Conference was jointly organized and supported by IOC and the Aquitaine Region (France) with additional support from SCOR and the EC. Support was given to a substantial number of participants from developing countries and Eastern European Member States. Over three hundred scientists and coastal zone managers from fifty countries and non-governmental organizations (NGOs) participated. Through ninety oral presentations, sixty posters and two days pre- and post conference field trips, the following questions were addressed: (i) what are the phenomena responsible for physical coastal changes? (ii) what are the socio-economic implications of changes? and (iii) how can science be used for integrated coastal zone management? Many papers documenting the threats currently facing the coastal zone highlighted the need to take an holistic approach when addressing problems of the coastal zone, with scientists working together with managers.

202 Proceedings for the Conference will be published very soon. One significant output is the agreement to use some of the selected case studies presented to produce a set of practical manuals that will

facilitate the assessment of coastal changes and provide guidelines to coastal scientists on the ways in which they can effectively contribute to coastal zone management.

203 Referring to Document IOC/INF-991, Dr. Latouche explained that an *ad hoc* Consultation on OSNLR was organized during the Coastal Change Conference, 8 February 1995. The objective was to obtain ideas and advice on the future development of OSNLR, particularly in the context of the IOC follow-up to UNCED and a possible role in relation to UNCLOS. The *ad hoc* Consultation considered that OSNLR, particularly its coastal components, has a major role to play in this follow-up and, to this end, proposed various actions to be further developed.

204 Referring to Document IOC/INF-1007, Dr. Latouche recalled the IOC-OSNLR *ad hoc* Expert Consultation on UNCLOS (Paris, 20-21 March 1995), as part of IOC's short-term responsibilities in relation to UNCLOS, as well as to the request of the UN-DOALOS concerning IOC assistance to determine the limits of the continental shelf.

205 The Delegate of Canada recalled the International Conference "Coastal Zone Canada 94", held in Halifax, 20-23 September 1994. He informed the Assembly that a draft Conference Statement and Call for Action has now been prepared and a limited number of copies were available to delegates.

206 At the regional level, a great deal of action had been implemented within the framework of OSNLR, particularly its coastal components. Workshops on coastal erosion related to sea-level rise have been convened by IOCARIBE Sub-Commission, Martinique (November 1993), devoted to Small Islands (IOC Workshop Report No. 97); at Isla Margarita, Venezuela (May 1994) dedicated to the cartography of critical coastal areas. The WESTPAC Sub-Commission organized a workshop on Palaeogeographic Maps in Kuta, Bali, Indonesia, 20-21 November 1994 (IOC Workshop Report No.106). A workshop jointly supported by IOC, UNEP, WMO and SAREC was convened in Zanzibar, Tanzania, 17-21 January 1994 (IOC Workshop Report No. 96). A Symposium on Sedimentary Budgets along the coast of West Africa was held in Lagos, Nigeria, 17-20 May 1994 and a plan of action for the implementation of OSNLR was adopted at the Fourth IOCEA Session (Document IOCEA-IV/3S). In the south west Atlantic, the following OSNLR regional group activities have taken place: the organization of an oceanographic cruise, a training course and regional group meetings; development of co-operative studies on beach evolution; presentation of papers.

207 **The Assembly expressed** its appreciation of the development, and **stressed** the importance of the OSNLR Programme, particularly the follow-up to the Coastal Change Conference.

208 **The Assembly stressed** that the coastal zone is one of the major resources of the human environment. Its morphological characteristics have to be monitored and then protected taking into account the human factor and natural relationships of the coastal zone both with the open ocean and adjacent basins.

209 **The Assembly acknowledged** that, in the framework of IOC's follow-up to UNCED, the OSNLR Programme and relevant recent activities can provide the most appropriate scientific basis for research relative to coastal zone management.

210 **The Assembly adopted** the suggestions for improving the OSNLR Programme presented by the *ad hoc* consultation on OSNLR and **recommended** that, without neglecting the other components of the programme, a plan for a specific development of OSNLR in the framework of the global IOC Strategy relative to the Coastal Zone, be prepared by a small group of experts.

211 **The Assembly emphasized** that the necessary multidisciplinary approach requires the adoption of a precise methodology, as well as co-ordination between all the organizations and programmes participating in coastal zone management.

212 **The Assembly recommended** that, based on appropriate case studies, such as those presented at the Coastal Change Conference, guidelines and manuals on regional coastal zone management should be prepared within the framework of OSNLR. As a first attempt to this objective, a volume relative to the temperate zone will be made available by France at the end of 1995.

213 The delegate of Nigeria offered the use of the Nigerian research vessel for a second IOCEA cruise in the Gulf of Guinea to use acoustic methods to study sediment fluxes, and urged the Executive Secretary to ensure that the cruise be organized in 1996.

214 **The Assembly noted** that the Delegates of Argentina and Brazil specially requested a revision of the juridical basis of some parts of Document IOC/INF-1007 relative to UNCLOS. Their statements are included in Annex III-G.

10.5 OCEAN MAPPING

215 The item was introduced by Mr. Desmond P. D. Scott referring to document IOC/INF-899, Report of the Consultative Group on Ocean Mapping to the Eighteenth Session of the Assembly. He reviewed the state of development of the General Bathymetric Chart of the Ocean (GEBCO), the International Geological-Geophysical Atlases of the Atlantic and Pacific Oceans (GAPA) and the regional international bathymetric chart series. He informed the Assembly about the results of the Fifth Meeting of the Consultative Group on Ocean Mapping (CGOM), Bremerhaven, 24-25 April 1995 and the Joint IOC-IHO Guiding Committee for GEBCO, Monaco, 15-17 May 1995. He also drew attention to the close and mutually beneficial co-operation which obtained between IHO and IOC relevant to the Ocean Mapping Programme and related activities.

216 The Delegate of Italy expressed his thanks to Commander Desmond Scott for his enthusiastic and very efficient work for the oceanographic community. As a consequence, IOC regards IBCM as a model project whose importance is paramount to the earth's sciences. It was therefore decided to complete the information contained in the geological-geophysical data which constitutes the series, and to include the information of near or under-bottom characteristics, all together reducing the uncertainties inherent in one single parameter. Thanks is also expressed to Russian colleagues for the perfect technical presentations.

217 Sixteen delegations stressed the importance of the Ocean Mapping Programme and expressed gratitude to Mr. Scott, Chairman of the Consultative Group on Ocean Mapping, and Permanent Secretary GEBCO, for his input to the advancement of the Ocean Mapping Programme.

218 Mr. Scott thanked the delegates for the high appraisal of his activities and informed the Assembly of his intention to resign from the post of Permanent Secretary GEBCO at the end of this year. His replacement in this post, Mr. Brian Harper, formerly of the British Hydrographic Office, had already been nominated.

219 **The Assembly expressed** its strong satisfaction that the global programme of Ocean Mapping is developing very well and emphasized that it is the basis for many IOC projects and would be relevant to UNCLOS. **The Assembly welcomed** the digitization programme, and in particular, the issue of the GEBCO Digital Atlas on CD-ROM, and noted that it is indeed a revolution in bathymetry. The application of modern observational and analytical techniques was considered to be of great importance as these techniques can provide additional very valuable information to the scientific community.

220 **The Assembly decided** on the need to pursue the preparation of the regional bathymetric chart series and also noted the considerable progress made, particularly with regard to the International Bathymetric Chart of the Mediterranean and its Geological-Geophysical series, the International Bathymetric Charts of the Caribbean Sea and the Gulf of Mexico, and of the Central Eastern Atlantic.

221 Certain delegations emphasized that priority should be given to the work on the International Bathymetric Chart of the Western Pacific and requested the IOC Executive Secretary to find the necessary funds in order to organize the next Editorial Board Meeting for the above-mentioned project by 1996.

222 Several delegations informed the Assembly of their on-going national programmes contributing to Ocean Mapping.

223 Mr. Scott mentioned the centenary of the GEBCO project at the turn of the century (1999-2004) and reported on plans to publish a scientific report on the history of GEBCO, followed by a popular book to celebrate this event.

224 The Delegate of the Russian Federation confirmed financial support for a seconded staff member to the IOC Secretariat and, at the same time, requested the IOC Executive Secretary to ask the Director-General

of UNESCO to establish a permanent professional post for Ocean Mapping. **The Assembly strongly endorsed** this proposal.

225 **The Assembly decided** that the Ocean Mapping Programme was one of the most successful projects of IOC and should be provided with the necessary support.

226 **The Assembly thanked** the Governments of Canada, the Russian Federation, UK, USA, and other countries for their permanent efforts to support ocean mapping activities.

227 **The Assembly took note** of the information provided in IOC Document IOC-XVIII/2 Appendix 1, on the financial requirements for a satisfactory implementation of the Ocean Mapping Programme, including the coverage of the IOC Consultative Group on Ocean Mapping activities and meetings of the Regional Editorial Board.

228 **The Assembly adopted** Resolution XVIII-10.

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

229 This agenda item was introduced by Dr. Neil Andersen, Chairman of the Committee for GIPME. He noted that the IOC Annual Report for 1994 described many of the recent accomplishments in this Programme. He made particular reference to the recently completed review of the Marine Environmental Studies Laboratory (MESL) of the Marine Environmental Laboratory (MEL) of the International Atomic Energy Agency (IAEA) in Monaco which was conducted in April of this year. This laboratory plays an integral part in the implementation of GIPME, particularly with regard to the preparation of manuals, standard reference materials and intercalibration activities. It was pointed out that the results of the review indicated that the quality of the work being conducted at the laboratory continues to be of a high-level and the importance to the GIPME Programme remains undiminished. However, this is not to say that there are no problems. Because of increasing budgetary restrictions being faced by just about every organization at this time, the IAEA has been forced to curtail resources at the Monaco facility that are identified with non-nuclear work. Additionally, there is a strong possibility that due to cutbacks in UNEP budgets in general, there will be a reduction in resources being provided to MESL. The review noted that if IOC could become a full partner in the umbrella project between the laboratory and UNEP, this would ease the problems considerably. The decentralization issue discussed under Agenda Item 7, which received no dissenting comments during the related debate, can also be expected to contribute to a solution of the problem.

230 Developments in the next phase of the Open Ocean Baseline Project, publications of JGOFS Protocols, implementation of the Time Series Programme in the Cariaco Trench jointly between Venezuela and the US, development of two brochures for the GIPME Programme, plans for the next steps to be taken with regard to finalizing the Strategic Plan for the Health of the Ocean Module for GOOS, and contributions to the ACOPS Conference on land-based sources of marine pollution, were all referred to as just completed or on-going activities. In concluding his introduction, Dr. Andersen referred to several on-going regional activities as examples of aspects of the Programme that, when taken together, comprise a portion of the global perspective on marine pollution being provided by GIPME.

231 Dr. Manfred Nauke of the IMO then added several comments from the perspective of his organization as to the importance of co-sponsoring the GIPME Programme. He referred to the important aspects of using the available GIPME mechanisms in implementing the conventions which are IMO's responsibility, namely, the London, MARPOL, and Oil Pollution Prevention and Preparedness Conventions. He further noted the important contributions being provided by GIPME to implementing UNDP-IMO-GEF Projects in the East Asian Seas Region concerned with baseline and monitoring studies and data management, as well as to GESAMP's work in generating the next version of the State of the Marine Environment. He pointed out that all IMO delegations were not totally informed of the important benefit to the IMO of the collaboration with IOC through GIPME. He expressed hope that the brochure that will be printed by IMO will help to resolve this issue but encouraged delegations present to bring the message home.

232 In noting that he had made an identical intervention at EC-XXVII, Dr. Mario Ruivo, Chairman of the IOC-UNEP Intergovernmental Panel, made an intervention for the specific purpose of pointing out that the Panel was not functioning. He strongly recommended that a substantive evaluation was needed and a decision made to either continue it, if it could function, or, if not, disband it.

233 Twelve delegations then made interventions. Strong support was given to continuation of the GIPME Programme. Many delegations described national activities which were viewed as contributions to GIPME and MARPOLMON. The work being conducted on developing the Health of the Ocean Module through GIPME was recognized as a very important development. In particular, the United Kingdom referred to the oil spill that occurred in their coastal waters several years ago, noting that two reports were available concerning a study and a legal investigation. The Ukraine Delegation considered GIPME to be one of the most important programmes of the IOC. The Delegation of Malaysia felt that GIPME was vital to the health of their maritime area. The Delegation of the Russian Federation pointed out the importance of the Programme in the context of its upcoming increasing oil and gas prospecting in the Barents and Black Seas. The Delegation of Japan took note, along with that of the Islamic Republic of Iran, of the work done in the Persian Gulf on the oil spill following the recent hostilities. The Delegate of Portugal noted its support for the Programme in general, and the annual work plan and, in particular, for collaboration with the Marine Environment Studies Laboratory (MESL), noting the importance of maintaining the state of the health of coastal areas and its management based on integrated studies. The Delegate of Portugal offered to host a GEEP Workshop in 1997. The Delegation of Canada, in stressing its support, in particular for the MESL contribution, voiced its agreement with Dr. Ruivo concerning the GIPME Panel to either have it function or disband it. The Delegations of Bulgaria, Greece, Pakistan, Thailand and the United States voiced their support for the Programme.

234 The Delegate of the Islamic Republic of Iran referred to the environmental problems of the Persian Gulf area, and noted that monitoring had been done some years ago and suggested that further investigations be made under the auspices of UNESCO and IOC, to study long-term aspects. He also pointed out the overlap of conferences on these matters in the Islamic Republic of Iran and Japan, and suggested that this should be avoided.

235 The Representative of the United Nations Industrial Development Organization (UNIDO), Dr. Chidi Ibe, informed the Assembly that UNIDO is the executing agency for a new UNDP-GEF initiative on Marine Environmental Management in the Gulf of Guinea on the Western African coast. It is a programme that has, as its foci, the prevention of coastal water pollution and conservation of biodiversity. The Programme receives technical backstopping and other in-kind contribution from the US Department of Commerce National Oceanic and Atmospheric Administration (NOAA) and has UNEP as an associated agency. The approaches used are based on the Large Marine Ecosystem concept of marine pollution and living resources management and are predicated on the conviction that the agents of marine pollution and living marine resources respect no jurisdictional boundaries and few geographic ones and so necessarily require large scale, concerted and holistic approaches for assessment and management. However, it was noted that to be successful, the concept of LME management must be coupled with the Management of Marine Catchment Basins (MCBs) which are defined as the areas adjacent to the LMEs from where much of the human impacts derive. This approach is analogous to the current global emphasis on understanding and controlling Land Based Sources (LBS) of marine pollution as a key to preventing the continued deterioration of the marine environment from pollution effects.

236 Given the limitations of the individual countries in the Gulf of Guinea and the magnitude of the problems of water pollution and biodiversity conservation, a regional approach is imperative and consists of five major elements:

- (i) Strengthening of regional institutional capacities to prevent and remedy pollution;
- (ii) Development of an integrated information management and decision-making support system;
- (iii) Establishment of a national and regional, sustainable programme for co-ordinated monitoring and assessment of the changing state of health of the region's coastal ecosystem;
- (iv) Prevention and control of land-based sources of marine pollution;
- (v) Development of national and regional strategies and policies for the long-term management and protection of the Gulf of Guinea LME.

237 It is obvious that the IOC would be a natural partner in this project. As a result, and as the Co-ordinator of the programme and the Director of the Regional Co-ordination Centre based in Abidjan, Côte d'Ivoire, Dr. Ibe informed the meeting that he has initiated and would, while here in Paris continue discussions with the Executive Secretary IOC on ways and means of taking advantage of the expertise inherent in the programmes and activities of the IOC with a view to bringing to fruition the immediate and long-term objectives of the Gulf of Guinea LME Programme. Areas of envisaged co-operation would cut across programmes such as IODE, OSLR, TEMA but it was his expectation that the GIPME Programme, with its current emphasis on the development of a Health of the Ocean module of GOOS, would provide the umbrella for the envisaged co-operation. Through this association with the HOTO module of GOOS, the linkages between the LME approaches and the measurements of global scale ocean-wide processes to be collected under GOOS operations would be self-evident.

238 Dr. Ibe expressed the hope that the IOC Assembly would endorse the principle of co-operation that UNIDO seeks with the IOC, and emphasized that UNIDO does not seek in the context of this co-operation, to impose additional strain on the financial resources of the IOC but would, in fact, be willing and able to make available to IOC financial allocations for the tasks to be assigned to it, as UNIDO believes that this would be a most cost-effective approach to attaining the programme objectives.

239 Finally, Dr. James Readman of the MESL of the IAEA, took the floor and amplified on previous comments concerning data quality and compatibility. He pointed out that the assessment of environmental contamination invariably requires measurement (or monitoring) of the contaminants. It is upon these data that environmental managers base their decisions. If the analytical data is wrong then, in turn, the management actions will also be wrong. Hence it is critical that the analytical data is correct, and to ensure that this is the case, requires considerable effort. To produce good quality data the following are needed: well trained analysts; appropriate laboratory facilities and well maintained instruments; the use of proven analytical methods; calibration of instruments with high purity standards; testing of methodologies with "reference materials" containing known concentrations of pollutants; and, external testing of laboratory performance (through intercomparison exercises). He indicated that a system which incorporates all these components has been developed during the past decade at IAEA-MEL, the only marine laboratory within the UN system, which is generously hosted by the Government of the Principality of Monaco. Through a tripartite Memorandum of Understanding between IOC, IAEA and UNEP, these services are already incorporated within some IOC programmes. In addition, these agencies co-operate substantially within the GIPME Programme and the International Mussel Watch. However, to continue and to extend these non-nuclear activities which are outside the mandate of the IAEA, additional financial support is now needed.

240 In response to these interventions, the Executive Secretary of IOC noted that a GIPME Officers' Meeting, scheduled to meet right after the Assembly, would be able to take up many of the items referred to by the delegations. Dr. Andersen expressed his appreciation from both a programmatic as well as a personal view of the comments from the delegations. He noted that he looked forward to discussing the various points raised in more detail with the representatives over the next few days, for further preparation of the GIPME Officers' Meeting.

241 **The Assembly decided** that the GIPME Programme should continue to be strengthened at global level, that the co-operation with UNEP, IMO and IAEA should also be strengthened, that relevant use be made of the IAEA-MESL, and that the programme should monitor its regional presence through co-operation with relevant regional programmes, including with UNIDO in relation to the UNDP-GEF project on the Gulf of Guinea referred to above.

242 **The Assembly decided** that the IOC and UNEP Secretariats should consult together on the further existence of the Intergovernmental Panel and report to the GIPME Officers and the IOC Executive Council, at its next session.

243 **The Assembly expressed** its great appreciation to Dr. Andersen for his extensive efforts to develop GIPME.

11. OCEAN SERVICES

11.1 GLOBAL OCEAN OBSERVING SYSTEM AND RELATED ACTIVITIES

11.1.1 Second Session of the IOC-WMO-UNEP Committee for GOOS

244 Prof. M. Glass, Chairman of I-GOOS, first welcomed the re-installment of South Africa in IOC and stressed the importance of the future role of this country for GOOS. He then described the evolution of GOOS during the intersessional period and stressed the fact that GOOS is now a well accepted concept and that countries now have a clearer view of its content. Some key committees are installed and working hard. Several national committees for GOOS were, or are in the process of being created.

245 He noticed however that much work remains to be done in order to achieve successful implementation. GOOS must ultimately provide relevant ocean products to wide categories of users. This means that the user market must be both identified and developed, to ensure that user needs are correctly met. Highly specialized studies on socio-economic benefits arising from GOOS can provide such assessments. Moreover GOOS must be treated as a complete system, including all the elements from observing systems, through data management to delivery of products. GOOS is such a large programme that immediate implementation is unrealistic, for financial, as well as for human resources reasons. Priorities must be set in its development. In this, context, he highlighted the fact that the regional development of GOOS such as EuroGOOS or NEAR-GOOS seemed most appropriate.

246 Prof. Glass described the internal structure of the GOOS organization as confirmed at the first Planning Session in Melbourne (1994), based on two Committees, the IOC-WMO-UNEP Committee for GOOS (I-GOOS) and the Joint Scientific and Technical Committee (J-GOOS) sponsored by IOC, WMO and ICSU. I-GOOS is assisted in its work by the Strategy Sub-Committee (SSC) whose composition includes experts, as well as representatives of important economic categories of users. The Implementation Panels of I-GOOS, have not yet been established due to the scarcity of funds. Most of the J-GOOS scientific panels are meeting at regular intervals, but are at different stages of scientific design of their respective observing systems. J-GOOS at its second session provided some recommendations endorsed by I-GOOS, in order to foster a balanced development of the system. The SSC held its First Session in Geneva in March 1995 and provided the outline of a strategic plan for GOOS implementation that was approved at the Second Session of I-GOOS held in Paris just prior to this Assembly.

247 Referring to the Executive Summary of I-GOOS-II, Document IOC-WMO-UNEP/I-GOOS-II/3S, Prof. Glass reported on the major issues addressed by the Committee and the Resolutions that it adopted:

- (i) establishment of an *ad hoc* panel for the coastal module and an *ad hoc* working group for the marine and meteorological services;
- (ii) establishment of a task team in order to define a GOOS Space Plan;
- (iii) maintaining close co-operation with GCOS and nominate a rapporteur in order to strengthen the relationship with the Global Terrestrial Observing System (GTOS);
- (iv) establishment of a steering group for identification of funding of a series of regional workshops, the regional approach being considered as the most appropriate for effective capacity building;
- (v) use these regional workshops to conduct economical surveys on the applications of GOOS data products in developing countries and promote the conduct of more detailed case studies. An international workshop on methodologies co-sponsored by OECD is proposed. Take advantage of such studies undertaken by GCOS;
- (vi) establishment of an *ad hoc* working group to identify priorities for GOOS, and organize a GOOS Priority Agreement meeting where commitments will be sought based on the initial Implementation Plan prepared by this group.

248 The Committee further recognized that a clear data policy is required, in the light of the decisions of the WMO Congress with regard to data exchange. A GOOS Handbook will be prepared. In conclusion, Prof.

Glass stressed the crucial role played by the GOOS Support Office and the importance of permanent staffing and appropriate funding.

249 **The Assembly unanimously recognized and stressed** the importance of GOOS for all countries and the central role played by IOC, including through the GOOS Support Office. The views expressed by the participants reflected a wide variety of concerns among the Member States. The elements to implement and strengthen the development of GOOS are still in the initiation period. A general agreement on the importance of the coastal module was noticeable. Most of the countries have already implemented elements of observations on a local scale and are looking for clear guidance provided by GOOS on the ways to upgrade, standardize and integrate on-going programmes into a sustainable system. It is indeed the task of J-GOOS bodies to continuously evaluate the scientific adequacy of elements of existing programmes to be incorporated into GOOS, and to provide standards and methodology.

250 **The Assembly took note** with satisfaction of the secondment by France of an expert as Director a.i. for the GOOS support office, and **stressed** the need to strengthen the GOOS support office staffing.

251 **The Assembly also welcomed** the offer of Brazil to second an expert to the GOOS support office and the offer of the USA to support Dr. Neil Andersen, of the University of Maryland, following his retirement from the National Science Foundation, to assist IOC in the development and implementation of the Health of the Ocean module and related marine pollution research and monitoring activities.

252 **The Assembly stressed** the importance of capacity building in order to allow all developing countries to effectively participate in, and take advantage of GOOS. The use of regional workshops and socio-economic studies was highly supported, and the help of specialized experts in this domain highlighted. Malta proposed to host one of these workshops. **The Assembly emphasized** the importance of local and regional scales to address the implementation issues and the role of pilot projects to foster the interest of bordering countries. Several countries stated that some elements of operational systems should be implemented quickly to demonstrate the usefulness of GOOS. Prof. Glass mentioned that such initiatives may result from agreements of countries to co-operate on a specific regional project, or they can be conducted and co-ordinated through IOC regional bodies. In particular, China, Japan and the Republic of Korea asked the Assembly to support the NEAR-GOOS project. The IOC Executive Secretary mentioned that the related map included in Document IOC/INF-992 is incorrect and should be deleted. **The Assembly emphasized** that, at the national level, close co-ordination between different agencies or organizations is a prerequisite for the success of GOOS operations. This co-ordination can be achieved in various ways, including the establishment of GOOS National Committees, or by the creation of a GOOS Secretariat, such as in Germany, or through the National Committee for IOC, such as in Japan.

253 The Delegates of Greece, Israel and Italy pointed out that regional sub-programmes such as MedGOOS (Mediterranean GOOS) can provide good opportunities to carry out case studies, as well as to develop co-operation between developed and developing countries.

254 The Delegate of the United Kingdom stated that the three national agencies which are members of EuroGOOS are collaborating with fourteen other agencies from twelve different European countries to promote operational oceanographic projects within GOOS, and to perform pilot studies and test cases.

255 **The Assembly agreed** on the fact that in order to increase the interest of governments and facilitate funding of GOOS, some early and concrete results must be ensured and made rapidly available. The principle of organizing a priority identification meeting was therefore warmly welcomed.

256 The WMO representative expressed the same opinion and reported that the Twelfth Meteorological Congress had recognized the potential importance of GOOS and had therefore strongly supported the continued WMO co-sponsorship of, and contribution to GOOS implementation. He emphasized the importance of the finalization of the GOOS Strategic Plan. He noted further that the free and unrestricted exchange of required oceanographic data and products will be essential to GOOS and recommended that IOC consider mechanisms to address this question.

257 **The Assembly adopted** Resolution IOC-XVIII-11.

258 **The Assembly also adopted** Resolution XVIII-12 on the "International Coral Reef Initiative",
regarding the development of the Global Coral Reef Monitoring Network.

11.1.2 Global Climate Observing System (GCOS)

259 Dr. T. Spence, Director of the GCOS Joint Planning Office, reported on the progress in the
development of GCOS.

260 GCOS was one of the principal topics of the Intergovernmental Meeting on the World Climate
Programme (Geneva, April 1993) and it is one of the four main thrusts of the WCP recommended by the IGM-
WCP.

261 The Joint Scientific and Technical Committee for GCOS, jointly sponsored by WMO, IOC, UNEP
and ICSU, has identified scientific priorities regarding the observations of GCOS in particular: (i)
observations needed for seasonal and inter-annual prediction; (ii) observations required for detection of
climate change and the attribution of the causes of such changes at the earliest possible time. GCOS would
provide essential information in support of the IPCC, elements of Agenda 21, and requirements of the United
Nations Framework Convention on Climate Change. The Joint Scientific and Technical Committee
established several scientific design panels to address atmospheric, oceanic, terrestrial observations, and cross-
cutting panels to address data and information management and space-based observations to develop specific
plans for action.

262 The Joint Scientific and Technical Committee has prepared and published an overall plan for GCOS
as well as plans for data and information management and space-based observations.

263 The Twelfth WMO Congress decided that the GCOS should be continued as an essential activity in
support of the WCP and other climate-related intergovernmental activities. The Congress also recognized with
appreciation the inter-agency co-operation in the process of planning and developing GCOS and, in particular,
in developing a close partnership between GCOS, GOOS and GTOS.

264 Many countries have established GCOS national committees which, in several cases, deal both with
GCOS and GOOS.

265 GOOS and GCOS share a common ocean climate module. The Joint Scientific and Technical
Committee for GCOS received the draft OOSDP report and endorsed its publication as the scientific design
for the ocean climate requirement. He emphasized the need for continued support from the sponsoring
agencies, which is particularly required for the common module.

266 **The Assembly recognized** the role of the IOC in the development of a comprehensive climate
observing system by supporting the implementation of the GOOS climate module. The delegates expressed
their strong support for GOOS and, in particular, its close interaction with GCOS.

267 **The Assembly decided** that IOC should continue its co-sponsorship of the development of GCOS.

268 Many delegations pointed to the need for an integrated approach to the observing systems, linking
in particular GOOS and GCOS.

269 **The Assembly wished** to encourage the Executive Secretary IOC and the GOOS bodies to continue
close collaboration with the Joint Scientific and Technical Committee for GCOS, and the GCOS Planning
Office, particularly in planning and developing a common climate module of GOOS as well as other common
interest needs, including data policy and management; socio-economic studies; preparation of useful products
and satellite-related issues.

270 **The Assembly instructed** the Executive Secretary IOC to continue providing support for GCOS
development in accordance with the Memorandum of Understanding (MOU) on GCOS.

11.1.3 Global Sea-Level Observing System (GLOSS)

271 Dr. D. Pugh, Chairman of the IOC Group of Experts on GLOSS, presented a report on progress on the implementation of GLOSS and the outcome of the Fourth session of the Group, Bordeaux, 31 January-3 February 1995. The report of the Fourth Session of the IOC Group of Experts on GLOSS was available to the participants.

272 As an example of the operation of GLOSS, he noted that Georgia had supplied more than 200 years of previously unavailable data at this Session of the Assembly. Dr. Pugh highlighted the scientific aspects of the GLOSS network strategy and application of GLOSS data.

273 The meeting of the GLOSS Group of Experts had been preceded by the IOC/GLOSS-IAPSO Scientific Workshop on Sea-Level Variability and Southern Ocean Dynamics, which provided a stimulating scientific introduction to the GLOSS session. A special scientific session on sea-level changes and coastal impacts was held during the BORDOMER Conference after GLOSS-IV (6-10 February 1995) with the participation of GLOSS experts; GLOSS maintains contacts with IAPSO and the IPCC. The Chairman of the Group of Experts had also provided a briefing on sea-level observations at the Twelfth Session of the INC-FCCC.

274 The GLOSS strategy, as proposed by the Group of Experts includes the integration of GLOSS tide gauges and satellite altimetry for monitoring global and regional sea-level variability, and connection of selected GLOSS Tide-Gauge Bench Marks to a global geodetic reference system, with the use of the Global Positioning System (GPS). Close contacts have been established and maintained with the scientific operational communities dealing with GPS, particularly with the International GPS Service (IGS). Information dissemination on GLOSS through the World Wide Web started in 1995.

275 Applications of GLOSS data include preparation and wide distribution of sea-level products and data/information services as shown in the annex to the report of the Fourth Session of the GLOSS Group of Experts. Regional co-operation in establishing sea-level networks and producing sea-level products is strongly encouraged. In this connection the attention of the Assembly was brought to the Afro-American GLOSS News produced by Brazil, as a good example of promoting GLOSS co-operation.

276 The Group of Experts gave special consideration to TEMA-related activities, and encouraged real partnership among countries, as well as the use of extra-budgetary funds, particularly from GEF, to cover demands for training and technical assistance, to augment the limited resources available at IOC.

277 Dr. Pugh invited the Assembly to endorse the recommendations of the Group and the Plan of Action for 1995-1997 proposed by the Group (as shown in Annex VI of the report).

278 Dr. A. Tolkathev informed the participants of the development of the Pilot Activity on Sea-Level Changes and Associated Coastal Impacts in the Indian Ocean with the active participation of India, Kenya, Tanzania, Mozambique, Madagascar, Seychelles, Maldives, Bangladesh and Malaysia and recently joined by Sri Lanka. Within the framework of this project a Training Workshop on Sea-Level Analysis is being organized by IOC in collaboration with India to be held in Dehra Dun, India, from 21 November to 1 December 1995.

279 **The Assembly expressed** strong support for the development of GLOSS, and emphasized the need for the continued and strengthened support of this IOC activity.

280 **The Assembly noted** that I-GOOS at its Second Session received the report of the Chairman of the IOC Group of Experts on GLOSS and **requested** the J-GOOS to study those GLOSS elements and activities which are relevant to GOOS.

281 Many delegates noted that GLOSS can be considered as an important building block of GOOS. **The Assembly invited** the IOC Group of Experts on GLOSS to work together with I-GOOS and J-GOOS in identifying those elements of GLOSS that will be part of GOOS, particularly in developing GOOS Climate and Coastal Modules.

282 In discussing GLOSS **the Assembly emphasized** the following points:

- (i) the importance of GLOSS for regional and national research, and practical applications;
- (ii) the readiness of countries to provide sea-level data for international exchange;
- (iii) the importance of integration of *in situ* data with satellite altimetry data for monitoring and assessment of global and regional sea-level variability and changes;
- (iv) the importance of the development of regional components of GLOSS such as the Mediterranean Sea-level Regional Network (MED-GLOSS) and EuroGLOSS;
- (v) the need for training in the field of sea-level analysis with the use of GLOSS station data and satellite altimetry information for regional and local sea-level studies and the need for free access to the satellite altimetry data;

283 **The Assembly endorsed** the GLOSS strategy as proposed by the IOC Group of Experts on GLOSS aimed at integrating *in situ* measurements at GLOSS stations with satellite altimetry and geodesy, and preparing the global and regional sea-level products required for monitoring and assessment of global changes, as well as for regional research and practical applications.

284 **The Assembly urged** Member States to consider their possible support and assistance (either through IOC or bilateral agreements) in the provision and installation of tide-gauges in the GLOSS sites of Sierra Leone and Côte D'Ivoire (available in Germany and donated by Sweden), and the Pacific Coast of Russia which has been destroyed during the recent tsunami events, and which is of great importance to the tsunami warning system for the country and the Pacific Ocean region.

285 The Delegate of Nigeria thanked the Governments of the United States of America and Sweden for providing sea-level equipment and training. He offered the assistance of Nigerian experts in the installation of three other analogue tide-gauges in other countries of the region.

286 **The Assembly urged** Member States to work together with assistance from the IOC Secretariat and the Group of Experts in preparing and submitting proposals to the Global Environmental Facility (GEF) and other potential funding agencies for assistance in establishing and up-grading GLOSS stations and related training activities.

287 **The Assembly adopted** Resolution XVIII-13.

11.1.4 Integrated Global Ocean Services System (IGOSS)

288 The Chairman of the IOC-WMO Joint Committee for IGOS, Dr. D. Kohnke, presented recent activities of the IGOS programme. The Chairman introduced and explained the structure of the proposed Ship-of-Opportunity Programme (SOOP), and the proposal for IGOS to assume co-ordination of that programme (SOOP) as it evolves into an operational component of the Global Ocean Observing System (GOOS).

289 The goal of the end-to-end management proposal is to provide operational measurements of temperature and salinity, to be performed with Expendable Bathythermographs (XBT), thermo-salinographs, and hull-mounted thermistors. The OOSDP report emphasized the value for global climatic studies to measure the upper ocean thermal heat content using ship-of-opportunities and maintaining the existing programme.

290 An IGOS Operations Management Committee (IOMC) will have the responsibility of overseeing resource allocation and determining operational sampling strategies, with guidance from the research community. The SOOP Implementation Panel (SOOPIP) will include the IGOS Operations Co-ordinator and national SOOP managers. SOOPIP will execute decisions and directions given by the IOMC.

291 I-GOOS-II, June 1995, endorsed the IGOS proposal and requested IGOS to begin its implementation.

292 The Chairman reported on other intersessional IGOS activities, including:

- (i) The publishing of the full scientific paper on revised fall-rate equations by members of the Task Team on Quality Control of Automated Systems (TT/QCAS) in IOC Technical Series. A short form of the paper will be published in the Journal of Deep-Sea Research.
- (ii) The implementation of the new BATHY Code in November 1995.
- (iii) The continued support of the IGOSS Products Bulletin (IPB) by Canada, Germany and the USA, and the creation of an electronic version of the IPB on the World Wide Web (WWW).
- (iv) The preparation of the IGOSS Plan and Implementation Programme (PIP) for the period 1996-2003. The PIP will be reviewed at IGOSS-VII in November 1995 and the results presented to the IOC Executive Council in 1996.

293 **The Assembly expressed** its thanks to the Chairman for his presentation and the continued support for IGOSS. IGOSS is one of several foundations for GOOS and continued close interaction is needed between IGOSS and GOOS. Members noted with appreciation that IGOSS and the other Ocean Services discussed under item 11 have been very responsive to GOOS. It was suggested that IGOSS consider ways to synthesize more products to be used in promoting the programme.

294 **The Assembly expressed** its thanks for continued publication of the IGOSS Products Bulletin, and **stressed** that the IPB is a useful resource for many countries in soliciting funding for national observing programmes.

295 The Representative of WMO reminded the Assembly of the joint sponsorship of IGOSS by WMO and IOC, and considered IGOSS essential to the acquisition of upper ocean thermal data for use in climate prediction and analyses. The IGOSS-IODE Data Management Plan may well serve as a model for data management within GOOS. Likewise, GTSP is another jointly-sponsored programme that ensures high quality data and timely delivery of thermal and salinity observations.

296 The Representative stressed that IGOSS and other ocean services and GOOS are seen to be forming working relationships naturally and should not be forced or hurried. WMO will continue to support operational oceanography for climate and weather prediction.

297 **The Assembly took** note of these points.

11.1.5 Data Buoy Co-operation Panel (DBCP)

298 This agenda item was presented by the Secretariat on behalf of the Panel's chairman, Mr. D. Painting, the United Kingdom Meteorological Office, who was unable to attend the session. **The Assembly recalled** that the Panel, established jointly by WMO and IOC in 1985, had been in existence for more than ten years, and had benefitted from the services of a Technical Co-ordinator funded through voluntary contributions from its Member States for more than seven years. **The Assembly noted** the following main achievements of the Panel:

- (i) the improvement and final definition of a code form for transmission of buoy data over the WMO Global Telecommunication System (GTS), as well as various improvements in telecommunication procedures;
- (ii) the definition, partial funding and running of a new Argos processing sub-system to allow flexibility in transmitting buoy data over the GTS;
- (iii) the definition and implementation of a set of procedures for controlling the quality of buoy data forwarded over the GTS;
- (iv) collaboration with the WOCE Surface Velocity Programme (SVP) in designing, on the basis of the SVP drifter, and testing a low-cost lagrangian drifter equipped with a barometer (SVP-B drifter);

- (v) the support and/or establishment of various "action groups", such as: the European Group on Ocean Stations (EGOS); the International Arctic Buoy Programme (IABP); the International Programme for Antarctic Buoys (IPAB); and the International South Atlantic Buoy Programme (ISABP). The latter was established by the Panel at the request, and with the assistance of GCOS within two years time and is being made up of more than 70 drifting buoys in an ocean area previously considered as "data-sparse".

299 The Panel is now focusing on specific tasks which come out of present international activities regarding the study and monitoring of the marine environment. These tasks include: (i) the establishment of a closer connection with the scientific community, through, *inter alia*, the incorporation of scientific and/or technical presentations at future Panel sessions; (ii) collaboration with existing groups involved in data buoy technical development; (iii) developing mechanisms for collaboration in planning buoy deployment strategies; (iv) initiating the establishment of new action groups to deal with data-sparse areas of the ocean (e.g. the Indian Ocean).

300 **The Assembly decided** that the Panel was playing an important role in the development of operational oceanography, as part of those existing systems and/or bodies that work well and are ready to contribute to the setting up of GOOS. **It commended** the Panel upon its achievements so far **and agreed** that they depended very much on the availability of a Technical Co-ordinator. **It therefore urged** as many Member States as possible to contribute to the funding of the Panel, on the rationale that, whereas only a handful of countries are contributing to the Panel fund, all countries benefit from the global effect of obtaining and exchanging more and better data from the world ocean.

301 **The Assembly specifically highlighted** the Panel's actions with regard to data quality control, to co-operation between the scientific and the "operational" communities and to the establishment of action groups. In so doing, **it recognized** within several interventions a request for an action group for the Indian Ocean **and expressed satisfaction** to the fact the Panel was already aware of the problem and trying to solve it.

11.1.6 Satellite Remote Sensing and Relation to CEOS

302 The Executive Secretary IOC introduced the agenda item noting that remote sensing activities were umbrella activities of the IOC covering GOOS as well as other IOC programmes. It included aircraft and land based radars in addition to remote sensing from space and data management is an integral component. The objectives of the programme are to provide for the widest possible access to and exchange of satellite data within the ocean community including in developing countries and to bring those needs to the attention of the satellite agencies through the Committee on Earth Observing Satellites (CEOS) as well as other organizations. To meet these objectives IOC addressed the areas of sensor requirements, data requirements and capacity building toward sustainable development. CEOS provided a vehicle to address all of these requirements in co-operation with the space agencies. CMM, IGOSS and IODE had joined together to form the sub-group on Oceanic Satellites and Remote Sensing to provide a focal point within their organizations as well as GOOS to address remote sensing issues. Data Management was seen as a key area of activity for IOC and GOOS within the context of CEOS. IOC is working in co-operation with the space agencies as well as other IOC programmes to develop pilot projects leading to satellite products of interest to the ocean community. Capacity building and access to satellite data for developing countries is a key IOC remote sensing activity.

303 **The Assembly welcomed** the report and **expressed** strong support for the remote sensing activities of the IOC.

304 **The Assembly emphasized** the need to implement remote sensing projects in conjunction with and through the IOC regional bodies. High priority was given to continued co-operation with CEOS as well as WMO and GCOS especially in the development and promotion of ocean remote sensing requirements.

305 **The Assembly endorsed** the development of pilot projects to improve access to and exchange of satellite as well as other remotely sensed data.

306 **The Assembly stressed** that the role of IOC should also include the establishment of a dialogue with developing countries on these matters so the needs of these countries can be addressed with the full participation of these Member States. The IOC regional subsidiary bodies are relevant mechanisms.

11.1.7 Global Terrestrial Observing System (GTOS)

307 Dr. J. Withrow, the IOC Senior Assistant Secretary charged with GTOS co-ordination, introduced the agenda item, noting that GTOS is in the early stages of development and the relations with other global observing systems are just starting. One of the main objectives of GTOS of interest to the ocean community is the detection and understanding of natural and anthropogenic impacts on terrestrial, freshwater and estuarine ecosystems; the quantification and mapping of such changes at all scales; and the assessment of the consequences of such changes for land use, biodiversity, biogeochemistry and climate change. IOC has ongoing work in these areas and has already made progress in the context of marine pollution research and monitoring, providing inputs for management in co-operation with UNEP and IAEA and in biodiversity. Proposals are now being studied on how GTOS and GOOS could interface in the coastal zone and how the freshwater, estuarine and terrestrial strategies of GTOS could be integrated. IOC also has linkages with WMO in this area.

308 The IOC places great importance on the harmonization of environmental data especially at the land-ocean interface. IOC's International Oceanographic Data and Information Exchange (IODE) programme is addressing the related issues in the context of IGBP and the coastal module of the Global Ocean Observing System (GOOS). The recent meeting of the I-GOOS noted the importance of the development of LOICZ of IGBP in coastal zone activities. IOC has established formal co-operation with IGBP of LOICZ and see this as an essential first step. I-GOOS decided to nominate a rapporteur to maintain close ties with GTOS and respond as necessary to co-operation requirements.

309 **The Assembly emphasized** the importance of the coastal zone module of GOOS. The coastal zone is also of great interest to GTOS and represents an interface between GOOS and GTOS. In the light of the limited resources available for work in the coastal zone, **the Assembly directed** the Secretariat to co-ordinate closely with GTOS to avoid duplication and make the best use of the limited resources.

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

11.2.1 Data Management

310 Dr. J.R. Wilson, Chairman of the Committee on IODE, introduced this agenda item. He referred to the very active programme carried out by IODE over the past two and a half years. In particular, progress has been made in the implementation of GTSP and GODAR projects, and in Marine Information Management and capacity building activities.

311 In evaluating how the IODE programme might be made more effective, a "Think Tank" meeting was held in Paris in March 1995. The meeting was attended by 20 participants primarily from international organizations and programmes dealing with ocean data and information, and the client programmes of IODE. This meeting concluded:

- (i) that IODE should broaden its expertise and services by working directly with the scientists and programmes that collect data types that are not now handled routinely by IODE;
- (ii) that IODE data centres should enter into partnerships with marine agencies, universities, and other organizations collecting marine data in order to counteract diminishing resources available for managing data in many member states;
- (iii) IODE should take full advantages of the CD-ROM and Internet technologies to increase the range of products and services provided to client programmes;
- (iv) IODE should use the opportunity that has been presented by the new electronic publishing technology to improve its capacity building programme based on Ocean-PC, CD-ROM publication, Internet and a comprehensive training programme.

- 312 A few delegates informed the Assembly on national activities, and of the assistance provided by IOC in programme implementation; such as Malta - Training Course on the Use of Personal Computers in Data and Information Management for Countries in the Mediterranean Region and the GODAR-IV workshop; UK UK-EDMED development and CD-ROMs with JGOFS and North Sea project data; Iran -IOC feasibility mission and national training course; Japan - annual training courses in data management; China - regional training course on ASFA and MIM.
- 313 The Delegate of the Islamic Republic of Iran requested that, pursuant to training courses and other actions of IOC to support the establishment of the Iranian NODC, which is also vital for IOCINDIO, IOC-UNESCO should provide further help to the center to complete previous actions.
- 314 **The Assembly expressed** its gratitude to the Chairman of the IOC Committee on IODE and Members of the Secretariat for their efforts in making the programme successful and **requested** the Executive Secretary to secure the necessary funds for programme implementation and developing country assistance in hardware and software acquisition for oceanographic data and information management, and also **urged** Member States to provide further contributions to IODE.
- 315 **The Assembly expressed** its appreciation for the development of the GODAR project, noting the publication of the World Ocean Atlas '94 set of CD-ROMs, **thanked** the US Government, CEC, ICSU, ICES and IOC Member States for providing support to the project, and **requested** the Executive Secretary and IODE Chairman to continue their support to the project and to enhance co-operation with other international organizations in implementing this important activity.
- 316 **The Assembly commended** the programme for the achievements in TEMA and capacity building as well as for the results of the Think Tank meeting which marked a very special landmark in the history of programme development by identifying new challenges in oceanographic data and information handling in the next century. **The Assembly encouraged** continued efforts in arranging training courses and workshops, especially on Ocean-PC, GODAR and general issues related to oceanographic data and information management.
- 317 **The Assembly noted** with satisfaction that, during the intersessional period, the IODE programme had been active and progressive, especially in adopting new technologies for oceanographic data and information management and exchange, including multimedia technology, electronic mail arrangements, CD-ROM.
- 318 **The Assembly expressed** satisfaction with the efforts of some Member States in the declassification of their naval data for international exchange. In this regard, information on the plans of the Russian Navy to transfer, to the international domain, not less than 100,000 BT observations and 4,000 hydrological stations in 1995/96 was especially acknowledged.
- 319 **The Assembly**, in spite of a certain positive trend, **expressed** its concern with regard to the long delays in acquiring data from scientists. **The Assembly called** for increased partnerships with scientific institutions and users. It was also noted with regret that a significant number of countries still does not actively participate in data exchange and **the Assembly requested** the IODE National Coordinators to more actively promote the IODE programme.
- 320 **The Assembly underscored** the importance of IODE as a partner in the implementation of GOOS, **called** on IODE to assist GOOS in the development of a data and information plan, and **advised** the IODE Chairman to prepare a report for the coming session of IODE on the coordinated IODE-GOOS data policy issue.
- 321 **The Assembly expressed** satisfaction with the production and beneficial co-operation between IOC and ICES under the IODE programme. A few joint activities have been noted such as Ocean-PC, GODAR, RNODC-Formats. The establishment by ICES of a WWW server to promote the objectives of IODE **was acknowledged by the Assembly**. **The Assembly directed** more attention to standardization of methods of data exchange and to Quality Control procedures.

322 The Delegate of the WMO informed the Assembly of the status of data policy discussion taking place at the WMO Congress. **The Assembly noted** with interest the information presented and directed the IODE Chairman and IOC Executive Secretary to monitor development.

323 **The Assembly expressed** its appreciation for the report provided by Greece on the preparations being made for the Fifteenth Session of the IOC Committee on IODE, which will be held in Athens, Greece, 23-31 January 1996, co-sponsored by CEC-MAST and the Government of Greece in addition to IOC.

11.2.2 Global Temperature-Salinity Pilot Project (GTSP)

324 The GTSP has continued to develop its programme. The real time data flow is working very well with data being distributed to client programmes on the Internet three times per week. It is now accepted that GTSP has resulted in a 30% increase in the capture of real-time data. Scientific quality control is being standardized with the participation of the WOCE Upper Ocean Thermal Programme Centres. This will provide a more complete and effective quality control for all temperature-salinity data once these procedures have been fully implemented.

325 The flow of delayed mode data into the GTSP data base needs to be improved however. Only 50% of the 1990 data has been submitted and 25% of the 1993 data. This is a general problem in other areas of the IODE programme as well. Member States are requested to encourage and assist their scientists to submit their data in a more timely manner.

326 The GODAR project has been so successful that it will most likely increase the amount of temperature and salinity data in the global databases by a factor of three. A major task for GTSP in the future will be to pass all of these data through GTSP quality control procedures and enter it into the GTSP continuously managed database.

327 Marine information aspects of the GTSP programme include the publication of the GTSP CD-ROM and the GTSP Home Page on the World Wide Web. These projects have been carried out in co-operation with the IODE GE-MIM. The GTSP CD-ROM includes both data and information. For example, the CD-ROM includes every document, publications and data product prepared by GTSP. This provides a very effective method to deliver the information component of GTSP along with the data. This will improve the availability of information and therefore the capacity building aspect of the IODE programme. In working with WOCE and other global programmes, IODE is strongly encouraging and assisting with similar merging of information and data to provide for the wide circulation of information, as well as data in developed and developing countries.

328 **The Assembly expressed** its satisfaction with the efforts made by IGOSS and IODE in the development of the GTSP CD-ROM. MEDS of Canada was especially **commended** for its contribution to and its leading role in this project.

329 **The Assembly recommended** that training courses and workshops should include GTSP material.

11.2.3 Marine Information Management

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

331 Despite a chronic shortage of funds and lack of staff, thanks to great efforts made by the Group of Experts on MIM, the programme was able to achieve a good implementation rate of its Action Plan, agreed upon during its Fourth Session in October 1993. The Chairman highlighted the development of the "MIM Publication Series" which was very well received by information managers worldwide, as well as the publication of the "IOC Titles and Acronyms", the revitalization of the MEDI catalogue, the development of a Global Directory of Institutions and Scientists, and the development of standards for directories and bibliographies, the latter in co-operation with the ASFA Advisory Board.

332 An IOC FTP file server has been installed on the UNESCO Internet server in order to provide Member States with direct and immediate access to IOC Publications and other relevant documents. The

server is intended to complement the IOC Publication services providing a tool to better reach the marine science community. Software developed within the framework of IOC programme activities will also be available through this server, as well as the MEDI catalogue.

333 In response to Resolution XVII-7, the IOC Secretariat participated in inter-Secretariat consultations on the future of ASFA. This resulted in the negotiation of a new publishing contract with the publisher of ASFA and of a new partnership agreement with the ASFA partners. The role of the UN co-sponsoring partners has effectively been redefined to focus on capacity building to enable developing countries to actively participate in ASFA as input centres. As a follow-up to the GE-MIM action plan and as an ASFA activity supported by the ASFA Trust Fund, a user-friendly input and output interface was developed for the use and preparation of ASFA input by ASFA partners, and also by marine information centres for the management of libraries and information centres.

334 At the regional level reference was made to the RECOSCIX-WIO Project (Regional Co-operation in Scientific Information Exchange in the Western Indian Ocean) which has now come to maturity.

335 **The Assembly stressed** the importance of documentation and information as essential tools in scientific research and **expressed** strong concern about its continuing unavailability in developing countries. Libraries and information centres in developing countries are unable to expand or maintain their collections and have no access to on-line or other information servers. This undermines efforts in TEMA and capacity building and **the Assembly urged** the IODE Committee to discuss this issue during its upcoming session and identify appropriate solutions at the regional and global levels.

336 **The Assembly noted** that, unless developing countries have access to advanced electronic communication technology, there is little chance that they can actively and effectively participate in global scientific programmes. **The Assembly recommended** that concerted actions be taken to overcome this problem.

337 Thanks to support from the United States in 1994, it was made possible to provide electronic mailboxes to several institutions in the IOCINCWIO region. The support has been extended to 1995.

91 **The Assembly commended** the Government of Belgium for its support of the RECOSCIX-WIO project between 1992 and 1995 and **expressed** the hope that the support would be continued as the project provides a unique opportunity to ensure efficient links between data and information. During IOCINCWIO-III, the Member States in the region decided to expand the terms of reference of the project to include data management.

338 **The Assembly noted** with satisfaction the development of the RECOSCIX-CEA project for the IOCEA region, requested the Executive Secretary IOC to support the project, and invited Member States to contribute towards its development.

339 The Delegate from Kenya, referring to the success of the RECOSCIX-WIO project, welcomed the development of similar networks in other regions and volunteered the know-how gained during the development of RECOSCIX-WIO.

340 The Delegate from Portugal stressed the need for information and documentation as essential tools in the furthering of scientific research. Noting their continuing lack in developing countries, he called on Member States to assist in providing these tools. In this respect, he repeated the offer made by Portugal during IOCEA-III to assist in the production and publication of a regional IOCEA newsletter. **The Assembly took note** of the offer with appreciation.

341 **The Assembly noted** with appreciation the announced development of the IOC WWW Home Page which will function as a central information point for users interested in IOC's activities and will include jumps to Member States Home Pages if available, thereby emphasizing the partnership philosophy of the IOC programmes. The plan to release a CD-ROM complementary to the WWW Home Page for those who do not have access to the Internet at this time was **supported** and **endorsed**.

342 **The Assembly expressed** thanks to the Director-General of UNESCO for the creation and recruitment in May 1995 of the professional post for Marine Information Management, announced during the Twenty-seventh Session of the IOC Executive Council.

343 **The Assembly noted** with satisfaction the readiness of China to provide facilities for future training courses on ASFA and Marine Information Management.

344 **The Assembly took note** of language problems faced by some Member States in the effective use of IODE products and **urged** the Committee on IODE to discuss this issue and to consider assistance for the translation of documents in order to provide effective services to the local community.

11.3 INTERNATIONAL TSUNAMI WARNING SYSTEM IN THE PACIFIC AND RELATED ACTIVITIES

345 Mr. H. Gorziglia, Chairman of ICG/ITSU, introduced this item. He referred to the objectives and functions of the Group and summarized the results of activities undertaken by the Member States of the Pacific in the implementation of the decisions of the Fourteenth Session of the ICG/ITSU which took place in the fall of 1993 in Tokyo, Japan.

346 He highlighted the increasing tsunami generating seismic activity which have been experienced during the last two years by the Pacific countries which cost thousands of lives and caused great damage to property in the coastal tsunami-prone areas. He informed the Assembly of the progress made by the ICG/ITSU in mitigating natural disasters: the TIME Project is being successfully implemented due to support provided by Japan and the USA; the Earthquake and Tsunami Risk Evaluation System TREMORS was developed by France and the Group recommended that it should be widely used; an Expert Tsunami Database for the Pacific was developed by Russia; textbooks on earthquakes and tsunamis for kindergartens, schools and colleges have been prepared, published and widely distributed in Spanish by Chile. An English version in camera-ready form is also available for publication thanks to the support from Canada. Mr. Gorziglia pointed out that all these and many other activities fully correspond to the main principle of the Yokohama (1994) Conference Strategy to give the highest priority to natural disaster prevention measures.

347 He then drew the attention of the Assembly to the financial problems, noting that in spite of a decision of the Session of the IOC Governing Bodies which gave the highest priority to the Programme, the funds available to implement the Programme are very limited and support is provided by only a few countries from the Pacific region. He identified two ways to increase support to the Programme: (i) Member States should increase direct and in-kind support to the Programme by providing more economic, scientific and human resources; (ii) the Executive Secretary IOC should convey to the Director-General of UNESCO the unique status of the Tsunami Programme as the only operational natural disaster warning system fully meeting the objectives of IDNDR. Mr. Gorziglia appealed to Member States to take the opportunity of the coming session of the UNESCO General Conference to be held in the fall of this year, to emphasize the importance of this Programme and to request the Conference to secure the necessary funds in order to make the Programme successful.

348 Finally, Mr. Gorziglia thanked the Government of France for the facilities provided for the Fifteen Session of the ICG/ITSU which will take place in Tahiti, French Polynesia, 25-28 July of this year and invited all Member States to participate in the Session.

349 **The Assembly congratulated** the Chairman of the ICG/ITSU for the successful management of the Programme and **noted** that Tsunami presents a real and increasing danger because of the dramatic increase of the population in the coastal areas.

350 **The Assembly considered** the Programme as one of the most effective activities of the IOC providing practical results, and **expressed** satisfaction of its successful implementation.

351 **The Assembly noted** the progress in increasing awareness of the population of the danger of tsunamis through drilling exercises, video films, publication of brochures, posters and textbooks. **The Assembly requested** the continuation and intensification of ICG/ITSU.

- 352 The achievements of the programme in real-time operational work and tsunami data collection and exchange have been specially noted and it was **recommended** to consider wider usage of high technology for communicating warning messages to remote tsunami-prone areas.
- 353 **The Assembly expressed** its appreciation to the USA for hosting PTWC and ITIC which showed its effectiveness during the devastating earthquakes and tsunami which struck Japan, Russia, and Indonesia during the past few years, and to Mexico for responding favourably to numerous requests of the IOC Governing Bodies to provide staff for the post of Associate Director of ITIC.
- 354 **The Assembly considered** it important that more action be taken by national authorities responsible for tsunami services to meet new and increasing requirements for a reliable and effective warning system. The activities of Canada, Chile, Colombia, Japan, Peru, in this regard were noted with satisfaction. **The Assembly was concerned** with the information provided by the Delegate of the Russian Federation on the destruction of the tide gauges on Kuril Islands caused by the tsunami of October 1994. **The Assembly agreed** that this may have a negative consequence on the effectiveness of the tsunami warning regional system in the north Pacific and **invited** the Executive Secretary IOC and Member States to consider ways to support Russia in reconstructing the warning system in the tsunami affected area. Taking into account the importance of keeping the international community informed of the effects of the 1994 tsunami, **the Assembly requested** the Executive Secretary IOC to consider support for the publication of the Report of the International Group which visited the affected area immediately after the tsunami occurred.
- 355 **The Assembly noted** that an intersectorial project on natural disaster reduction was not included in the UNESCO Fourth Medium-Term Plan and **requested** the Executive Secretary IOC and the Chairman IOC to confirm efforts to make the tsunami programme the basis for future UNESCO interdisciplinary co-operation of UNESCO environment programmes in response to IDNDR.
- 356 **The Assembly took note** of the problems in the development of the Tsunami Warning System for the South-west Pacific and **recommended** that the project proposal should be redefined and implemented. Member States were requested to support the project through the UNDP National Representatives.
- 357 **The Assembly expressed** its thanks to the Government of France for hosting the Fifteenth Session of the ICG/ITSU and to the Government of Peru for offering facilities for the Sixteenth Session in 1997.
- 358 Dr. Oliounine, Senior Assistant Secretary IOC, informed the Assembly of recent developments in establishing a co-operative project on storm surge mitigation jointly with WMO and UNESCO-IOC. The WMO Workshop on Storm Surges for the Bay of Bengal, was held in Bangkok, Thailand, 14-19 November 1994, with the participation of IOC, and the common interest of hydrologists, meteorologists and oceanographers in this natural disasters phenomena were noted. A strong request was expressed to bring the knowledge and resources of different international agencies together in order to develop a joint project. Dr. Oliounine emphasized that in order to develop reliable forecasting systems for tropical cyclone storm surges there is a need for both atmospheric and oceanographic data. He then referred to the decision of the WMO Congress taken at its Twelfth Session (30 May - 21 June 1995, Geneva, Switzerland) to support "*the establishment of a storm surge project particularly for the Bay of Bengal and the Northern part of the Indian Ocean, with the joint co-operation of WMO, IOC, UNESCO and UNEP*". He stressed that if this position of WMO is supported it will fully correspond to the recommendations of UNCED on the sustainable development and co-operation between the international organizations and to the principles of the Yokohama Strategy documents and objectives of IDNDR.
- 359 Several Delegates (Australia, China, India, Philippines, Thailand) expressed strong support to the actions taken by the Executive Secretary IOC in bringing the storm surges mitigation issue in the frontline of IOC activities, noting that coastal floods associated with storms surges constitutes the world's foremost natural disaster, surpassing many others for loss of life and property damage. Although in some countries there is a notable progress in the development of models for storm surges predictions, there is a need for data to verify these models.
- 360 **The Assembly emphasized** that this project, if implemented, will meet the needs and desires of the Member States in saving life and property.

361 **The Assembly instructed** the Executive Secretary IOC to convey to other agencies the readiness of IOC to co-operate in the development of the project and to take the necessary actions to establish operational mechanisms of co-operation with WMO, UNESCO, and UNEP in developing a storm surges project.

362 **The Assembly recalled** the plans under the GLOSS programme to have a training workshop on Sea-Level Analysis in India in November this year. **The Assembly recommended** the study of the possibilities to use this opportunity to hold a meeting of the joint IOC-WMO-UNESCO-UNEP Group of Experts which will start the development of the project.

363 **The Assembly noted and reiterated** support to the decisions of the IOC Executive Council taken at its Twenty-fifth Session (para.156) that "*projects related to storm-surge mitigation... should not be initiated within the framework of the IOC tsunami programme*".

364 **The Assembly requested** the Executive Secretary IOC to identify resources to support the project.

12. **CAPACITY BUILDING IN MARINE SCIENCES, SERVICES AND OBSERVATIONS - TEMA**

365 The Chairman of the TEMA Committee, Professor Michel Vigneaux, introduced the agenda item referring to the Summary Report of the TEMA Strategy *ad hoc* Meeting (Document IOC/INF-999), as well as the Draft TEMA Strategy in Response to UNCLOS and UNCED (Document IOC-XVIII/2 Annex 6). The Chairman developed the concept of a new strategy for capacity building/TEMA emphasizing the need for a pragmatic approach: multidisciplinary, co-ordination, continuity of efforts, awareness, close North-South and South-South partnership, and a continued and close relationship with political and socio-economic spheres would be essential. The most productive way to apply this approach is through regional and sub-regional networks. In this context, integrated coastal area management and environmental risks constitute priority issues. The same considerations should be applied, in developing close co-operation with relevant UNESCO programmes, particularly the Coastal and Small Islands Multidisciplinary Project.

366 During the discussion that followed, twenty-five Member States and one Organization (CPPS), participated.

367 **The Assembly considered and appreciated** the report submitted by Dr. S. M. Haq, "Observations and Experiences of Selected TEMA Activities During 1984-94" (IOC-XVIII/Inf.2), as a valuable input for future analysis of capacity building/TEMA.

368 **The Assembly concurred** with the importance of incorporating aspects related to public awareness, and **encouraged** teaching of marine sciences starting at the primary and secondary levels. The Delegation of Chile gave a copy of an atlas to the Secretariat.

369 **The Assembly supported** the fact that training activities should keep continuity and increase regionalization and decentralization, the latter to permit closer association with Member States' priorities and therefore harmonize national and regional interests.

370 **The Assembly acknowledged** with satisfaction the increased co-operation between developing countries in marine science. **The Assembly**, to reinforce this tendency, **emphasized** the need to further strengthen human resources, also at the technical level, in order to ensure correct maintenance and running of equipment, sampling and laboratory procedures. The delegation of Kenya recommended, in the framework of biodiversity studies, the need of para-taxonomists as a crucial matter calling for training.

371 **The Assembly recalled** the need for easy access to new pedagogic materials, as well as new means of disseminating information. It **emphasized** the use of networks as a special mechanism to perform this.

372 **The Assembly decided** to submit selected TEMA topics related to the Convention, to the Intersessional Working Group on the Possible IOC Role in Relation to UNCLOS.

373 **The Assembly accepted** the Recommendation to incorporate the Floating University project as a TEMA component of IOC through co-ordinated efforts with the TREDMAR Programme.

374 **The Assembly adopted** Resolution XVIII-14.

375 **The Assembly concurred** with the fact that integrated coastal area management is a priority issue for developing Member States as regards TEMA.

376 Germany offered the possibility of high level courses using the services of German professors, as well as grants for students and researchers in developing countries in need of specific training requirements, to be combined with possibilities through bilateral arrangements. Germany actually has developed a co-operative project for the Red Sea in which Egypt, Israel and Palestine participate. IOC was called to play a catalytic role, to facilitate co-ordination and interaction among the partners concerned. The TEMA Group of Experts for Capacity Building can play a significant role in this co-ordination. Germany also proposed that at each IOC Assembly a "Dr. Panikkar Lecture" be established honoring the former Chairman of IOC, to address capacity building in marine science issues at regional and/or national levels. India gratefully acknowledged the initiative of Germany, and offered the facilities of the National Institute of Oceanography and the newly established National Institute of Marine Technology, Madras, for training activities particularly in the IOCINDIO region.

377 Iran offered facilities for training in the framework of the Caspian Sea activities, should IOC-UNESCO agree to allocate sufficient resources to implement the programme decided upon by the IAEA-IOC-UNESCO Workshop in May 1995.

378 The Delegate of Nigeria made a renewed pledge to accommodate two scientists from the IOCEA region for two months, for training on coastal and marine dynamics.

379 **The Assembly endorsed** the new strategy proposed for Capacity Building/TEMA to be further developed by the TEMA Group of Experts for Capacity Building, its first session to be scheduled for the first half of 1996. Portugal and the Netherlands kindly offered to host this meeting.

380 **The Assembly also endorsed** the plan to hold the Dr. Panikkar Lecture at each Assembly.

381 In order to properly plan and organize all these activities, the **Assembly emphasized** the urgent need to strengthen in a sizeable manner the Capacity Building/TEMA Programme in the IOC Secretariat.

382 **The Assembly endorsed** the Summary Report of the TEMA Strategy *ad hoc* Meeting (Document IOC/INF-999), as well as the Draft TEMA Strategy in Response to UNCLOS and UNCED (Document IOC-XVIII/2 Annex 6).

383 **The Assembly adopted** Resolution XVIII-15.

13. **REGIONAL SUBSIDIARY BODIES**

384 The Executive Secretary IOC made an overall introduction referring to Document IOC-XVIII/2.

13.1 **IOCARIBE, INCLUDING EVALUATION**

385 This agenda item was introduced by the Vice-Chairman of IOCARIBE, Dr. Guillermo Garcia Montero, who apologized for the absence of the Chairman, Dr. Hernan Perez-Nieto. His report referred to the Annotated Agenda (IOC-XVIII/2 para. 165-169, pages 36-37), IOC Annual Report for 1994 (pages 44-46) and Document IOC/INF-993: Interim Report on IOCARIBE Evaluation, and briefly summarized recent IOCARIBE activities.

386 He also announced the coming events in the region, in particular the next IOCARIBE Session in Barbados, 11-15 December 1995, and the Seminar on Small Island Developing States to take place immediately before (8-9 December 1995). It is intended that related results obtained in the region will be discussed with a view to formulating a regional Integrated Coastal Zone Management Programme. He

also mentioned the Fourth Workshop on Marine Debris to be held in the Dominican Republic, 21-24 August 1995.

387 After the return of Dr. Fernando Robles to Paris, Dr. Fred Berry was seconded by the USA to work as Acting Secretary for IOCARIBE. He carried out most of the 1994 work reported in the annual report. Among relevant activities there is the Workshop on Small Island Oceanography, Martinique, of which the Proceedings will be published as soon as they are edited by Dr. G. Maul. Despite the constraints in the Secretariat after return of F. Robles and F. Berry, many projects are still being carried out, as clearly shown in the Annual Report for 1994.

388 IOC Consultant and Acting Secretary for IOCARIBE, Mr. Rafael Steer-Ruiz, presented the Interim Progress Report on the IOCARIBE evaluation, (Document IOC/INF-993). He recalled that this evaluation was being carried out following the decision of the Twenty-seventh Session of the Executive Council. It provides Member States in the region with the information required to take decisions as to the future strategies of the Sub-Commission as well as regional co-operation. This is also a positive and constructive evaluation, which seeks to learn from past errors so as not to repeat them. Mr. Steer-Ruiz described how IOCARIBE had passed through two evolutions since its inception with the approval of the IOC Assembly in 1975, demonstrating its adaptability to changing circumstances. Feed-back and advice are expected from this Assembly on the Evaluation report.

389 The IOC Consultant explained that the methodological approach for the evaluation consists of five main components:

- (i) regional programmes and their impact in the region;
- (ii) Member States' participation and commitment;
- (iii) Secretariat, including the Cartagena-Paris relationship;
- (iv) management structure and interactions among these elements within the Sub-Commission;
- (v) regional scenario and IOCARIBE's relations with other organizations.

390 He presented the preliminary results as described in document IOC/INF-993 and explained that it refers to the first three components mentioned above. The next phase in the upcoming months will enlarge them and incorporate others.

391 The Delegate from Colombia congratulated the Secretariat on Document IOC/INF-993, noting that it would benefit the region. He stressed the fact that IOCARIBE had served the region in providing a forum for training, research and exchange of information. He informed the Assembly that negotiations had been initiated to increase the Colombian contribution to the Secretariat headquarters.

392 The Delegate from Canada stressed the importance of the evaluation and advised the Secretariat to focus on programme activities when preparing for SC-IOCARIBE-V. Member States must feel that they are not only a part of IOCARIBE but a partner and owner as well. He declared that Canada was aware of the growth in institutional building and horizontal networking taking place in the region (13 UN family programmes and nine regional programmes), and suggested that IOCARIBE should take care of vertical networking. IOCARIBE should work towards greater political and management visibility/structure within these countries and to participate in decision-making. He also stressed the need for a greater involvement of the private sector, to stimulate the contribution of financial resources. Concern was expressed over the lack of accounting expertise in the Secretariat. This should be resolved in order to attract donor support. He informed the Assembly of the upcoming Workshop of donor agencies interested in marine affairs, being organized by Canada/CIDA and IOC.

393 The Delegate of the USA recalled his country's secondment of Dr. Fred Berry to the IOCARIBE Secretariat. He informed the Assembly that Southeast Fisheries Centre (SEFC) funded the Highly Migratory & Straddling Species Workshop in Miami, March 1995. SC-IOCARIBE-V will be crucial to demonstrate the need for a permanent IOCARIBE and presence of a staffed secretariat in the region, which the USA fully supports. He also urged Member States to take responsibility for securing funds for IOCARIBE activities.

394 The Delegate of Cuba stressed the need for a critical review, aimed at learning from past experiences, in the evaluation of the Sub-Commission.

395 **The Assembly approved** the progress report, **decided** that the evaluation should be reported to the Twenty-ninth Session of the Executive Council after having been reviewed by IOCARIBE-V and **thanked** Colombia, France, Sweden, the USA, and donor agencies for contributing to the IOCARIBE Secretariat and its activities.

The Assembly adopted Resolution XVIII-16.

13.2 WESTPAC

396 Prof. Su Jilan, Chairman of the IOC Sub-Commission for WESTPAC, introduced the agenda item referring to Document IOC/EC-XXVII/6 and the IOC Annual Report 1994, emphasizing the implementation of WESTPAC programmes during the last intersessional period. The successful organization of the Third IOC/WESTPAC Scientific Symposium, 22-26 November 1994 attracted more than 200 scientists from both inside and outside the WESTPAC region. Special attention was given to integrated coastal zone management, which aimed at increasing interaction between marine scientists and coastal zone managers.

397 He informed the Assembly that the office of the IOC Regional Secretariat for WESTPAC had been officially inaugurated on 29 November 1994, at the facilities provided by the National Research Council of Thailand (NRCT). The Chairman also informed the Assembly briefly on the development of a regional GOOS component in the region, the NEAR-GOOS, as a model project to give effect to operational oceanography and contribute to daily mapping of the ocean condition of the region, which would be expanded eventually to the whole WESTPAC region.

398 **The Assembly expressed** sincere thanks to the Government of Thailand for hosting the IOC/WESTPAC Regional Secretariat in Bangkok, and for providing support to the office.

399 **The Assembly also expressed** its appreciation to the Government of Indonesia for its generous support to host the Third IOC/WESTPAC Scientific Symposium.

400 **The Assembly expressed** satisfaction on the establishment of the Regional Secretariat for WESTPAC, and stressed that the office should play an important role in co-ordinating the implementation of the WESTPAC programmes and projects, in ocean sciences and services, through increasing co-operation with other organizations in the region.

401 With regard to the staff situation in the Regional Secretariat, many delegates indicated the urgent need to establish a senior professional post for the Director of the Regional Secretariat for WESTPAC, either by UNESCO or through secondment by Member States, to ensure effective operation of the office.

402 **The Assembly noted** that most activities identified by the last WESTPAC Session as the intersessional work programme, had been satisfactorily carried out. However, it was also recognized that a review of existing projects is urgently needed for WESTPAC Member States in order to evaluate the need for continuation of the existing projects and the initiation and concentration on certain priority projects, such as NEAR-GOOS.

403 The Delegate of Japan informed the Assembly that his government will make further efforts to second a Japanese expert to the office of the Regional Secretariat and increase the extra-budgetary contribution to WESTPAC in the form of UNESCO Funds-in-Trust, with emphasis on supporting training activity on HAB, and relevant activities in NEAR-GOOS.

404 The Delegate of the United States of America informed the Assembly that his government will continue to provide staffing support for the Regional Secretariat. However, he indicated the need for UNESCO to create a post, so that the contribution from his government could be used for project implementation.

405 The Delegate of France confirmed the intention of France to second one staff member to the Regional Secretariat, taking into account the appropriate actions that have been taken by the IOC in strengthening the regional approaches.

406 The Delegate of Canada informed the Assembly that his country intended to work towards co-ordinating more of its bilateral regional activities with the WESTPAC-related programmes and liaise more closely with WESTPAC.

407 **The Assembly expressed** appreciation to the Governments of Japan, the United States of America and France for their contribution to WESTPAC activities through the secondment of professional staff to the Regional Secretariat and the increase in financial contributions.

408 **The Assembly urged** the Executive Secretary IOC to negotiate with the Director-General to establish a UNESCO post in the IOC Regional Secretariat for WESTPAC as soon as possible.

409 **The Assembly welcomed** the generous offer of the Government of Japan, and **decided** that the Third Session of the IOC Sub-Commission for the Western Pacific will be organized in Tokyo, Japan, 26 February-1 March 1996.

13.3 IOCINCWIO

410 Dr. E. Okemwa, Vice-Chairman of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean (IOCINCWIO) introduced this item.

411 During the Third Session of IOCINCWIO in 1992, an extensive Implementation Plan of 29 actions to be completed between 1993 and 1995 was agreed upon. Thanks to funding from several donors including Belgium, Germany, Sweden, the United States of America and others, more than 20 actions have been implemented so far.

412 Referring to the Annual Report 1994, Dr. Okemwa proceeded to sum up the activities undertaken in which 84 scientists from the region participated. An additional twelve individual travel grants were provided to enable scientists to participate in international conferences and workshops.

413 Special attention was drawn to the further strengthening of the Western Indian Ocean Marine Sciences Association (WIOMSA). A total of twelve Marine Research Grants were allocated for 1995 of which six have been attributed already.

414 Attention was further drawn to the active role played by the RECOSCIX-WIO project in exchange and dissemination of information, the recent addition of data in RECOSCIX-WIO scope, and the development of a regional e-mail network. The Vice-Chairman concluded by welcoming South Africa as a new member of IOCINCWIO, expressing the hope that their participation would strengthen marine science capabilities in the region.

415 **The Assembly expressed** great satisfaction with these developments and **called** on Member States to actively support the further development and maintenance of the RECOSCIX-WIO network.

416 The Delegate of Pakistan expressed his satisfaction with the extensive achievements in the IOCINCWIO region in terms of human capacity building, but pointed out that national infrastructure was still poorly developed. He called on donors to assist Member States in the region in this respect and highlighted equipment, equipment maintenance and literature as priorities. He also pointed out that capacities available in the neighboring IOCINDIO region might be available for collaboration with IOCINCWIO.

417 The Delegate of the Russian Federation stressed the importance of the northern part of the IOCINCWIO region in relation to ocean-atmosphere interactions and climate investigations. The Delegate regretted that his country has scaled down its activities with countries of the region for economic reasons, but nevertheless expressed his country's intention to co-operate as much as possible.

418 The Delegate of the United States of America announced the planned organization of a Workshop on Marine Mammals, Coral Reefs and Sea Turtles, to be organized jointly between the New England Aquarium and IOMAC, and of a workshop to be organized by the International Coral Reef Initiative, both of which will be hosted by Kenya. The Executive Secretary IOC informed the Assembly that IOC had been invited to be associated with the former workshop.

419 The Delegate of Madagascar informed the Assembly that in the past, Madagascar had serious difficulties in terms of communication which had hampered its participation in IOCINCWIO activities, but reported that measures were now being taken to solve these problems. The Delegate submitted Madagascar's invitation to host the Fourth Session of IOCINCWIO. **The Assembly thanked** the Government of Madagascar and **accepted** its kind offer to host the Fourth Session of IOCINCWIO, which will be held in September 1996.

13.4 IOCINDIO

420 The Executive Secretary IOC introduced this Agenda Item, referring to documents IOC-XVIII/2 and the IOC Annual Report 1994.

421 He briefed the Assembly on several activities that are going on in the region related to JGOFS, WOCE, coral reef and marine conservation programmes. He pointed out that these activities need to be considered in the context of IOCINDIO and should be carried out in co-operation and co-ordination with IOCINCWIO. He also recalled several activities undertaken by IOC in the region (see Annual Report 1994).

422 He referred to the offer made by the Government of India, to host the Second Session of the IOCINDIO Regional Committee, in Madras, India, in the first quarter of 1996, and stated that the necessary financial arrangement were being made for this purpose.

423 He recalled that the First Session of the Regional Committee was held in 1988, and that it was high time to set the programme in focus and identify priority activities, so as to give impetus to the development of the Committee.

424 **The Assembly was glad to note** the progress made during the intersessional period, particularly the news of the Second Session of the Committee, as a sign of revival of this Regional Committee. **The Assembly hoped** that more actions would be taken to further accelerate the development of the Committee.

425 The Delegate of India confirmed his Government's offer to host the Second Session of the Regional Committee for IOCINDIO in early 1996, and expressed his welcome to countries wishing to participate in the meeting. **The Assembly welcomed** this offer with appreciation.

426 At the Sixteenth Session of the IOC Assembly, Dr. Quraishie, Chairman of IOCINDIO, pointed to a matter in connection with IOCINDIO's activities, and stated that, for different reasons and difficulties, IOCINDIO had been unable to fulfil its duties and to be active as was expected. The Delegation of the Islamic Republic of Iran confirmed this statement based upon their experience gained within the past four years. It would seem that the situation remains unchanged and the problems unsolved. Despite the interest of the IOC Secretariat as well as the willingness of the region's related oceanographic institutes, there has been no success in revitalizing IOCINDIO. The Delegation of the Islamic Republic of Iran requested the IOC Secretariat to take the necessary measures to activate IOCINDIO. Should any major obstacles arise, the Delegation recommended that the IOC Secretariat resolve the problems with the assistance of the governments of the region and UNESCO, and that the IOC Secretariat would keep the governments of the region informed of its actions.

13.5 IOCEA

427 The Chairman of the IOC Regional Committee for the Central Eastern Atlantic (IOCEA), Dr. N'diaga Gueye, informed the Assembly of the main results and decisions of the Regional Committee's Fourth Session and its Recommendation (Documents IOCEA-IV/3S and IOCEA-IV/3S Add.). He expressed his appreciation of the efforts made by IOC to ensure good participation of the countries of the region, and drew the attention of the Assembly to the limited participation of IOCEA countries in the present Session, which is certainly not the result of weak interest on their part, but due to their limited financial resources. He emphasized the need for a particular effort in training and capacity building, mentioning in particular the need for the development of university level courses in marine research in the region.

428 He thanked France for its offer to make available the expertise of ORSTOM for the development of a regional electronic network of communication.

429 The Delegate of Portugal reiterated the offer made by his country to hold a workshop for the development of a regional cephalopodes project, and to contribute to the development of the regional network for exchange of information. In particular, this would be by publishing, on an experimental basis, a regional newsletter as a complement to the IMS Newsletter, and by facilitating information transfer and resource-sharing with the support of the Division of Information and Documentation of the Portuguese Institute of Marine Research (IPMAR-DID).

430 The Delegate of France confirmed the availability of the facilities and expertise of ORSTOM for the development of the regional electronic network of communication, and recommended that the FAO should be associated with the regional project on cephalopodes and the workshop to be held in Portugal.

431 The Delegate of Germany drew the attention of the Assembly to the initiative for co-operation in the Southeastern Atlantic, particularly in the Benguela upwelling ecosystem, which has many similarities with the Northwest African upwelling system. There are good reasons to apply similar methods and approaches to the study of both regions. He added that in a recent workshop held in Namibia, and co-sponsored by IOC, a proposal was elaborated which called for major co-operation in the study of the Benguela current system, focussing especially on fisheries resources in relation to the environment, and to involve Angola, Namibia and South Africa, together with support from European countries.

The Delegate of Nigeria recalled the First Workshop on Marine Debris/Waste Management for the Gulf of Guinea, held at the Nigerian Institute for Oceanography and Marine Research, Lagos, December 1994, and expressed support for the implementation of the resulting Marine Debris/Waste Management Action Plan for the Gulf of Guinea.

432 The Delegate of Morocco strongly supported the recommendation of the Session of the Regional Committee, at which his country could not officially be represented. He informed the Assembly of the organization of the international workshop, to be held in October in Rabat, entitled "Space Oceanography, Climate and Marine Resources in Northwest Africa". Regarding the budget project for the region, he stressed the inadequacy of the allocation proposed (US \$100,000), in view of the importance of the IOCEA region.

433 The Delegate of Ukraine expressed the strong interest of Ukrainian scientists in IOCEA activities, mentioning the realization of a geophysical atlas covering part of region, and hoped that co-operation would continue with the COMARAF projects.

434 **The Assembly agreed** with the proposal made by several delegations for the broadening of the geographical area of IOCEA in order to encompass Namibia and South Africa.

435 **The Assembly accepted** the Summary of Proceedings and Recommendation IOCEA-IV/3S.

13.6 COLLABORATION WITH ROPME AND PERSGA

436 The Executive Secretary IOC introduced the item, referring to the Annual Report 1994 and Document IOC-XVIII/2. He recalled extensive co-operation with ROPME in relation to marine pollution research and monitoring, including the organization of several cruises and the planning of an international conference to review the results, in the Islamic Republic of Iran towards the end of 1995.

437 He informed the Assembly of the planned workshop on the Red Sea and the Gulf of Aden region on the establishment of a regional research and monitoring programme related to problems associated with coastal zones and land-based activities influencing the marine environment, rescheduled now for October 1995. This workshop is a co-operative effort with UNEP, PERSGA, IUCN and ACOPS. The results will be presented to the Sea-to-Sea Conference in Saudi Arabia, October 1995.

438 The Delegate of Israel expressed interest in, and support for the development of an IOC programme for the Red Sea, without any institutional developments and open to participation of all interested parties.

439 The Delegate of Japan informed the Assembly of several oceanographic cruises which his country had carried out in co-operation with ROPME and IOC, and the convening of an international symposium to evaluate the results in Tokyo, 8-11 December 1995.

440 The Delegate of Canada recalled the R/V MOUNT MITCHELL cruise and its follow-up, and considered these actions as very good examples of what the IOC could do. He wished to see their fruitful continuation.

441 **The Assembly expressed** satisfaction with the development and **requested** the Executive Secretary IOC to continue efforts to develop co-operative oceanographic work in these regions in coordination with the relevant regional and other organizations.

13.7 MEDITERRANEAN

442 Mr. Gualter Soares, IOC Senior Assistant Secretary, introduced this item. He informed the Assembly of the progress achieved on the major activities supported by IOC and developed in co-operation with ICSEM, and on important initiatives of a regional character which IOC is following with great interest.

443 With regard to PRIMO (The International Research Programme in the Western Mediterranean), following the strategic lines established in the preparatory meetings at the end of the sixties, PRIMO focused its attention on straits and passages of the Western Mediterranean Sea. Straits and passages are to be considered as crucial places where it is possible to observe the time-scales of the circulation and those where experimental results can be directly compared with the response of numerical models.

444 In the last two years, 1993 to 1995, the activities of PRIMO mostly concerned the Central Mediterranean region, between Sicily, Sardinia and Tunisia. The Sicily Strait and the Sardinia Channel and the Sicily-Sardinia sections were monitored by current-meters and specific oceanographic campaigns carried out in close collaboration with Italian, French, Spanish and Tunisian teams. The results were exciting, mostly because they concern an area which, despite its importance for the understanding of the dynamics of the whole Mediterranean Sea, is one of the least known of the basin.

445 Within the framework of POEM-BC (Physical, Chemical and Biological Oceanography of the Eastern Mediterranean) work continued in 1993-1995 on intercalibration and analysis of the data collected during the multi-ship multidisciplinary survey of the eastern Mediterranean which was carried out in 1991, as well as on planning of the Levantine Intermediate Water Experiment. In addition, in the winter and spring of 1995, POEM-BC conducted a multiship study on the formation and dispersion of the Levantine Intermediate Waters. The experiment involved research vessels from Germany, Turkey, Greece, Italy and Israel and also US AXBT flights. In July 1995, a POEM-BC Steering Committee will take place to review the results of this study and to plan the final phase of the programme.

446 Regarding the programme on insular coastal dynamics (a regional OSNLR component) which, to some degree, is being implemented in Malta through the Euro-Mediterranean Centre on Insular Dynamics), consultations were held with the Chairman of the Group of Experts, Prof. Busuttil, who accepted to continue to make the necessary efforts for its effective regional development.

447 Co-operation with ICSEM has been pursued and the possibility of increasing co-operation was examined during consultations held with the ICSEM Executive Director. IOC participated in the last Congress of ICSEM held in Malta, March 1995.

448 ICSEM and IOC are interested in a proposal for developing an automated marine information system, using remote sensing data coupled with *in situ* data.

449 Co-operation with the UNEP Mediterranean Action Plan is continuing on marine pollution research and monitoring, with particular emphasis on modelling, and biogeochemical cycles studies. The recent Contracting Parties meeting in Barcelona, 5-8 June 1995, recommended to the coastal states of the Mediterranean to endeavour to participate in GOOS regional programmes. It also included, in the priorities of their action plans for the next decade, the assessment and control of marine and coastal litter which is an activity also co-ordinated by IOC.

450 Regarding GLOSS activities, the establishment of a regional operational sea-level network as a regional Mediterranean component of GLOSS was proposed at an informal meeting during the present Session.

451 IOC is considering and carefully following the development of the three following regional initiatives: (i) The "UNESCO Mediterranean Programme"; (ii) the Conference MED 21 held in Tunis in November 1994; and (iii) the new European Union initiative for Multilateral Science, Technology and Co-operation between the European Union and Southern and Eastern Mediterranean nations. The Conference MED 21 adopted the creation under MAP, of a Mediterranean Commission for Sustainable Development, and the European initiative is focusing on a European-Mediterranean Network (EUROMEDNET) in Marine Science and Technology.

452 The Delegate of Israel highlighted the need for continued scientific research in the Mediterranean and the growing interest in operational oceanography in the region, and proposed that IOC develop a new coherent and unified Mediterranean Programme which would build on the results of the existing separate programmes in the eastern and western basins (POEM and PRIMO). This new programme should be designed to improve the understanding of the oceanographic processes in the Mediterranean as well as to serve relevant needs in operational oceanography in the region. He further proposed that the 1996/97 biennium should be considered as a period of transition from the existing IOC programmes in the Mediterranean to the new unified Mediterranean programme, and that during this period IOC should continue to support the existing programmes by appropriate credits to be sought in the budget. The Delegates of Greece, Italy, Lebanon, Morocco and Turkey strongly supported these proposals. The Delegate of Turkey added that the new unified Mediterranean programme should include elements of permanency as well as a TEMA component. The Delegates of Israel, Italy and Malta requested that the IOC budget for 1996-97 should include an allocation of a minimum of US\$100,000 to support the existing Mediterranean programmes (mainly workshops and planning meetings of the Steering Committees). **The Assembly recognized** this need and **instructed** the Executive Secretary of IOC to take appropriate action. **The Assembly endorsed** this strategy for further development of IOC activities in the Mediterranean.

453 The Delegate of the Russian Federation expressed great interest in studies being pursued, and indicated the availability of Russian research and hydrographic vessels for participation in such studies.

454 The Delegate of Croatia informed the Assembly on the oceanographic activities in her country from 1993 to 1995, during an extremely difficult period, and mentioned the development of an electronic network to link up with other Internet systems worldwide. She expressed the willingness of her country's scientific institutions to participate in many IOC programmes, such as GOOS, IODE and TEMA. She told the Assembly that on the occasion of its sixty-fifth anniversary, the Institute of Oceanography and Fisheries, Split, is organizing a symposium entitled "Croatian Marine Fisheries on the Threshold of the 21st Century" to be held from 16-18 October 1995 in Split.

455 The Delegate of Malta informed the Assembly that the importance which Malta attaches to IODE activities, especially with regard to its data management component, is shown by the contribution which Malta has made to the this programme during the intersessional period (hosting the GODAR Mediterranean Workshop last April, as well as a training course for Mediterranean countries on the use of computers for the processing, management, exchange and dissemination of marine information and data. This contribution was also made in consideration of the great need in the Mediterranean, to bring together the mosaic of communities and cultures bordering this Sea, in order to address the pressing issue of persistent stress and the state of degradation faced by the marine environment. No comprehensive, basin-wide initiatives so essential to the sustainable use of marine resources in this region, can be effectively undertaken before the South and Eastern Mediterranean (SEM) countries receive the necessary boost that allows them to reach a level of capability in the marine sphere, thus enabling them to participate as partners in such an initiative.

456 He stressed that his country, due to its geographical position, its historical background, and its solid political relations with both northern- and southern-shore countries, is obliged to play a significant role in this process. They believe that one of the most important steps towards this direction is Malta's initiative to establish a Marine Research Centre which, besides meeting national needs, would also aim at providing a functional mechanism whereby benefits of research, training, capacity building and oceanographic data and information management could be equally shared by all the Mediterranean

countries. The IODE network will, of course, be reinforced by such a Centre, and will, moreover, favour the operation of GOOS in the Mediterranean.

13.8 OTHER REGIONS, INCLUDING THE SOUTHWEST ATLANTIC, SOUTHEAST PACIFIC, SOUTHERN OCEAN, ARCTIC BASIN AND THE CASPIAN SEA

457 The Executive Secretary IOC introduced the item referring to the Annual Report 1994 and the Annotated Expanded Agenda (Document IOC-XVIII/2).

458 He recalled the establishment of ASOS as a co-operative mechanism of Argentina, Brazil and Uruguay, following their joint statement at the Seventeenth Session of the Assembly, and the several activities carried out in that framework.

459 He emphasized the co-operation between CPPS and IOC in the Southeast Pacific on studies of El Niño, aspects of marine pollution research and monitoring and development of training. He informed the Assembly of several missions organized by UNESCO-IOC to the region.

460 The Executive Secretary IOC provided further updated information on actions of IOC in relation to the Southern Ocean, the Caspian Sea, and invited advice of the Assembly as regards IOC role with respect to the Arctic Basin.

461 Several Delegations informed the Assembly of actions of their countries in the different regions. The Canadian Delegate advised that it was not necessary to initiate IOC actions in the Arctic Basin in view of several other regional on-going programmes there (see also section 15.3). However, IOC should ensure that information of developments and results of these programmes is provided. This could perhaps be ensured by the identification of a rapporteur. The Delegate of Poland supported this view. The Delegates of Argentina and Brazil confirmed that ASOS is working well and that IOC's association and support is important.

462 The Delegates of Chile, Peru and the Representative of CPPS confirmed the interest of CPPS to continue and expand the co-operation between CPPS and IOC in scientific matters.

463 The Australian Delegation advised the Assembly that the Australian Government has decided to convene a special meeting of South Pacific environment ministers to discuss the environmental impact of nuclear testing and the possible establishment of a monitoring programme in the Pacific.

464 The Delegation of France made the following statement:

"France has taken note of the statement made by the head of the Australian Delegation concerning the French decision to proceed with a final series of nuclear tests of a limited number and duration, prior to the signature by France in 1996, at the latest, of the Comprehensive Test-Ban Treaty (CTBT).

It respects all the different opinions expressed about this decision. It observes, however, that the Assembly of the Intergovernmental Oceanographic Commission is not at all the appropriate forum for voicing political opposition to a decision that is ultimately a matter of French national sovereignty. France regrets the risk that has thus been taken of giving to the Assembly's debates a polemic character not in keeping with the nature of its work. It notes that the French authorities have amply informed its main partners, especially the countries of the South Pacific, of the reasons that have led them to take the decision to proceed with a final series of tests and to reaffirm France's commitment to be a party to the conclusion of the CTBT at the time set by the international community. It stresses that it would not have been able to take that second decision without the first.

France considers that it would be inappropriate to hold a special meeting of Environment Ministers of the South Pacific to discuss the consequences of the nuclear tests that it is preparing to conduct in Mururoa. It considers unfounded the idea of establishing a monitoring programme for that purpose. With reference to these two points, it points out that it has been demonstrated on many occasions in the past by scientific experts of undisputed international standing that

French nuclear tests at Mururoa have no impact whatever on the environment and on ecological balance. It confirms that its forthcoming tests will be conducted under conditions of total safety and absolute respect for the environment. It reaffirms its readiness to again invite high-level expert missions to note at the end of its next and final series of tests the absence of any effects on the environment caused by the last tests that it will be carrying out".

Southern Ocean

465 **The Assembly noted** that, upon the initiative of Germany, the Executive Secretary IOC took actions to organize the First Southern Ocean Forum, scheduled to be held in Bremerhaven, Germany, in spring 1996. The purpose of the Forum will be to review on-going and planned ocean research and observational programmes in the Southern Ocean and to prepare proposals on future IOC activities in the region, taking into account programmes and activities of other international organizations as well as proposals on the IOC links with, and contributions to, international conventions and treaties related to this oceanic area. The following countries have already responded positively to the IOC letter on this matter: Australia, Argentina, Brazil, Chile, France, Germany, Peru, Russia, the United Kingdom and the United States of America. IOC has also invited other international organizations concerned: CCAMLR, IHO, IWC, SCAR, SCOR, UNEP and WMO. Positive replies have been received from CCAMLR and WMO. In response to the request of the Seventeenth Session of the Assembly, the following countries have designated their official national contacts for SOC: Argentina, Australia, Brazil, Chile, China, Ecuador, France, Germany, Peru, Russia and the United Kingdom.

466 The Delegate of Argentina noted that the Forum should not constitute a formal, independent structure, but should be seen as an integral part of IOCSOC. Participants could include scientists, legal experts and government representatives. In addition, he observed that the activities of SCOR, in the framework of the Forum, should be carried out in close co-operation with SCAR.

467 **The Assembly welcomed** the initiative of Germany and **instructed** the Executive Secretary IOC to continue preparations for the Forum.

Caspian Sea

468 **The Assembly noted** that, upon the request of the 27th Session of the UNESCO General Conference (1993), the Joint Workshop on Sea-Level Rise and the Multidisciplinary Studies of Environmental Processes in the Caspian Sea region was organized by IOC, jointly with IAEA and IHP of UNESCO, in Paris, 9-12 May 1995. The Workshop was attended by specialists of all the riparian countries of the Caspian Sea as well as of France and representatives of IAEA, IHP and WMO. The Workshop reviewed the present knowledge of the causes of the rapid sea-level rise (2.25m since 1978); formulated a plan of action to initiate in 1995-1996 the Caspian Sea Regional Project, proposed and supported by IAEA, which includes the use of isotope techniques for the study of marine environmental processes; and, made proposals for further regional co-operation.

469 In view of the multidisciplinary and the multisectorial nature of the environmental problem in the Caspian Sea the Workshop urged international organizations, such as IMO, UNDP, UNEP, UNESCO, WHO, WMO and the World Bank, to work together in tackling the Caspian Sea problem.

470 The Delegate of the Islamic Republic of Iran, in emphasizing the importance of the research programme in the Caspian Sea, and the recommendations made at the Workshop, supported the establishment of an oceanographic data centre for this region as a priority and confirmed his country's readiness to help.

471 The Delegate of the Islamic Republic of Iran also emphasized the problem of the sea-level rise in the Caspian Sea and supported the proposal that IOC-UNESCO allocate required funds to implement research programmes, in order to determine the causes of sea-level rise and of pollution in the Caspian Sea.

472 **The Assembly also noted** that a second workshop was being planned to be held in Tehran, Iran, at a later date, to further consider and formulate regional co-operation of the Caspian Sea countries related to the study of the Caspian Sea.

473 **The Assembly realized** that the rapid rise of the sea level had caused great concern for all of the riparian countries of the Caspian Sea. **The Assembly recognized** that a solution for the problem in the

Caspian Sea would require a multidisciplinary approach and the involvement of many of the international organizations mentioned above.

474 **The Assembly noted** the IOC activities which relate to the problems of the Caspian Sea, and which were initiated as a follow-up to decisions of the Twenty-Seventh General Conference of UNESCO in view of the importance of this region. **It stressed** the need to continue these efforts within the mandate of the IOC and available resources.

13.9 BLACK SEA

475 The Executive Secretary IOC introduced the item, referring to the Annotated Expanded Agenda (Document IOC-XVIII/2), the Annual Report 1994, and the Executive Summary of the Intergovernmental Meeting on Co-operation in Marine Sciences and Services in the Black Sea (Paris, 7-9 June 1995; Document IOC/IGM-BS/3S) together with the related draft resolution.

476 He recalled Resolution XVII-15 on Regional Black Sea Co-operation, and the subsequent related decision of the 27th General Conference of UNESCO (Document 27 C/5 1.2.1 and DR.190 of 1993). He informed the Assembly of the outcome of the Black Sea Workshop held in Varna, Bulgaria (September 1994). This resulted in a proposal for an IOC Black Sea regional programme in marine sciences and services.

477 In accordance with subsequent consultations with all the Black Sea coastal states, an intergovernmental meeting in which all the Black Sea coastal states took part, was organized in Paris, 7-9 June 1995, to discuss further tasks identified in Resolution XVII-15.

478 This resulted in an agreement to approve an IOC Black Sea Regional Programme in Marine Sciences and Services, with an associated IOC regional co-ordinating mechanism (Document IOC/IGM-BS/3S). Finally, the Executive Secretary IOC recalled the participation of IOC in on-going programmes in the Black Sea, including COMSBLACK and the GEF Black Sea Environmental Programme.

479 The Delegates of Ukraine, Bulgaria, Turkey and the Russian Federation expressed their strong support to approve an IOC Black Sea regional programme in marine sciences and services, with an IOC regional committee as the management body. They recalled the uniqueness of the Black Sea in its oceanographic characteristics, the influence exerted on it through river runoffs, the serious degradation of parts of its ecosystem, and the strong need for sustained research, together with a region-wide systematic monitoring system addressing priorities. They stressed the timeliness of this initiative in the light of present on-going activities in the Black Sea so as to ensure that the IOC mechanism is now established on a long-term basis to generate coherent and sustained co-operation in the region with the participation of other interested international organizations.

480 The Delegations recalled the wider interest of many Member States in the unique Black Sea, and pointed out the demonstrated interest of countries outside the region to participate in Black Sea programmes, e.g., through COMSBLACK, EROS 2000, NATO, the GEF Black Sea Environmental Programme, and the UNEP Regional Seas Programme activities there.

481 Through this initiative IOC will become more involved with the Black Sea, and will also gain an identity in the region, so as to be able to act as a catalyzer in marine research as well as regional GOOS-related developments.

482 The potential economic benefits were also indicated, e.g., in the field of living resources and recreation resources. The influence on the Black Sea ecosystem from land-based human activities outside the Black Sea coastal states e.g., from the River Danube, was also stressed.

483 The Representative of UNEP welcomed this initiative and expressed the interest of UNEP to co-operate with IOC in this matter. He also recalled the considerable efforts of UNEP in the region and the tasks which have been given UNEP by the Black Sea States as regards environmental management.

484 The Chairman concluded that the debate had clearly shown the support of the Assembly to the proposals made in Document IOC/IGM-BS/3S.

485 **The Assembly adopted Resolution XVIII-17** on the IOC Black Sea Regional Programme in Marine Sciences and Services.

14. **PROGRAMME AND BUDGET**

14.1 DRAFT PROGRAMME AND BUDGET FOR 1996-1997

486 The Chairman presented the background documentation as found in the: (i) Annotated Provisional Agenda (Document IOC-XVIII/2: paras 219-222); (ii) Proposal on the Draft Programme and Budget 1996-1997 and the Related General Conference Draft Resolution (Document IOC-XVIII/2 Annex 7); and, (iii) Status Report on the IOC Programme and Budget (Document IOC-XVIII/7). Attention was also drawn to the IOC Comprehensive Action Plan (Document IOC-XVIII/2 Annex 1) and the Draft IOC Medium-term Strategy (Document IOC-XVIII/2 Annex 3).

487 In introducing this agenda item, the First Vice-Chairman provided a general review of the financial and staffing situation and made reference to the way in which the programme and budget is being developed and presented, following relevant recommendations from the *ad hoc* Study Group on DOSS. He also recalled that for a considerable period of time the IOC had recognized the desirability of balancing needs and resources, but that the decision process leading to programme concentration was indeed a difficult one, taking into account the wide range of Member States interests.

488 The First Vice-Chairman concluded his remarks by recalling previous statements that emphasized the importance of all of the programmes of the Commission. In this respect, it was clear that priorities will change from region to region and from country to country and that choices made by the Assembly would need to take the above into account. His introductory statement is found as Annex III-F.

489 The Chairman proposed that, following a general exchange of views in plenary, an *ad hoc* sessional working group on the programme and budget be established - open to all Member States - to facilitate discussion on specific financial matters, including the draft resolution proposed in Document IOC-XVIII/2 Annex 7.

490 Following the meetings of the *ad hoc* sessional working group, the First Vice-Chairman presented the conclusions of those Member States who had participated as summarized below.

491 Full and in-depth discussion of programme and budget matters requires a process to facilitate provision of advice by the Assembly to the Executive Secretary IOC on programme priorities, as well as a process of oversight and evaluation. An essential element to this process is clear and understandable presentation of programme and budget information.

492 To this end, **the Assembly agreed** that the budget structure and that of the programme need to be similar, with clear functions and sufficient detail, so that Member States can understand the relationship between expenditure and results, and their implications for future programme planning.

493 **The Assembly was of the view** that a more detailed presentation of programme elements would assist Member States in their endeavours to monitor programme implementation, and to mobilize direct and in-kind support for activities of special interest to their country.

494 In expressing its satisfaction with the improvements made in the presentation of programme and budget matters, especially in regard to a multi-year period, **the Assembly instructed** the Executive Secretary IOC to take further action in this direction and to present a model to be used for the 1998-99 biennium to the Twenty-ninth Session of the Executive Council for its comment.

495 **The Assembly agreed** that, in order to adjust to day-to-day uncertainties and opportunities, the Executive Secretary IOC needs to exercise some flexibility in programme management and its associated financing.

496 Recalling the recommendations of the *ad hoc* Study Group on DOSS, **the Assembly requested** that the Officers of the Commission play an active role during the intersessional period in providing advice and guidance to the Executive Secretary IOC on matters requiring immediate attention.

497 To enhance the process of monitoring and evaluation, **the Assembly instructed** the Executive Secretary IOC to amalgamate information found in the status report on the programme and budget with the Annual Report, providing wherever possible, greater detail in regard to linkages between activities and expenditure.

498 **The Assembly recognized** that financial auditing is needed, but that the responsibility of Member States should focus on ensuring that such auditing had been carried out under the UNESCO administration, and the satisfaction of the auditor as reported to the Commission.

499 **The Assembly adopted** Resolution XVIII-18.

500 **The Assembly reviewed** the Status Report on the IOC Programme and Budget (1994-1995) as presented in Document IOC-XVIII/7, and also **took into account** considerations raised during relevant agenda items, together with their financial implications.

501 **The Assembly requested** that the Director-General continue to accord priority to the IOC as the marine science arm of UNESCO should any further adjustments to the programme of work and budget be required, within the perspective of protecting remaining funding and, if possible, responding to new opportunities.

502 **The Assembly noted** with appreciation the special allocation of \$300,000 provided by the Director-General in 1994, especially in light of the financial constraints being faced by UNESCO, and **viewed** this as an indication of the priority accorded to the IOC by its parent body.

503 **The Assembly also noted** the positive response of IOC Member States to the need to mobilize increased contributions to the IOC Trust Fund which had reinforced implementation of IOC Programmes and, in some measure, reduced the potentially negative impact of the reduction of 20% in resources provided by UNESCO during the current biennium.

504 **The Assembly invited** the 28th UNESCO General Conference to consider, within the UNESCO Participation Programme, the possibility of giving priority to requests from Member States and non-governmental organizations in support of the 1998 International Year of the Ocean, eventually through a specific allocation within the overall funding identified for the Participation Programme.

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

505 The Executive Secretary IOC introduced the item referring to the Expanded Annotated Agenda (Document IOC-XVIII/2) and the Draft 28 C/5. In particular, he referred to the joint statement provided to the 27th General Conference from the meeting of the chairs of IOC, MAB, IHP, IGCP. This had been very well received in view of its emphasizing the need for increased co-operation and specific joint actions between them.

506 He recalled the discussion under Agenda Item 10.2. In this discussion, the Assembly had considered the proposed UNESCO Project on Environment and Development in Coastal Regions and in Small Islands, which is based on the joint statement referred to. He noted that the Assembly had established a small *ad hoc* sessional working group to consider IOC activities in this context. This had resulted in a Draft Resolution welcoming this initiative, proposing the IOC action in this regard and providing advice accordingly to Member States and UNESCO (Resolution XVIII-7).

507 He also noted that in the Draft Programme and Budget proposed for IOC, 1996-1997, reference was made to this project, and certain financial resources were suggested so as to ensure the appropriate participation of the IOC in the project.

508 **The Assembly noted** this information, **concurred** with proposed IOC participation in the project, **and stressed** that IOC's leadership role should be commensurate with its resource allocations to the project.

509 **The Assembly encouraged** IOC Action Addresses to bring Resolution XVIII-7 to the attention of their respective UNESCO National Commissions.

D. CO-OPERATION

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

15.1 THE INTER-SECRETARIAT COMMITTEE ON SCIENTIFIC PROGRAMMES RELATING TO OCEANOGRAPHY (ICSPRO); CO-OPERATION WITH MEMBER ORGANIZATIONS (UN, FAO, UNESCO, WMO, IMO, IAEA, UNEP)

510 The Executive Secretary IOC introduced the item, referring to the Annotated Expanded Agenda (Document IOC-XVIII/2) and recalling that two consultations had been held with ICSPRO. These had identified the role of ICSPRO in relation to the ACC Sub-Committee on Oceans and Coastal Areas, and had also noted that ICSPRO was established through an entirely different mechanism under an agreement between Heads of Agencies. In particular, it was noted that ICSPRO could serve as an interagency mechanism for matters related to the various conventions, the United Nations Convention on the Law of the Sea, the United Nations Framework Convention on Climate Change, and joint activities with respect to the 1998 Year of the Ocean, as well as in the context of new scientific developments and emerging issues and concerns where scientific advice and data are required.

511 Several delegations expressed support for ICSPRO as a reliable co-ordination mechanism and welcomed its expanded membership.

512 The Delegate of Argentina suggested that a representative of ICSPRO be invited to the intersessional working group on IOC's possible role in relation to UNCLOS.

513 The Delegate of Canada emphasized the use of ICSPRO in several important matters, including UNCLOS. He also proposed that consultations should be held with the Director-General of UNESCO with respect to IOC's membership of ICSPRO.

514 The Delegate of Pakistan drew attention to the need for a counterpart mechanism of co-ordination to ICSPRO at the national level, for instance in relation to ICAM, and invited the preparation of an information document on how the ICSPRO mechanism works, which could be communicated to Member States.

515 The Chairman concluded that the Assembly concurs with the use of ICSPRO as suggested and that the membership status of the IOC should be discussed.

516 The Representative of UNEP expressed the full satisfaction of UNEP with the extent and level of co-operation between IOC and UNEP at all levels - global, regional and national.

517 Specifically he (i) welcomed IOC to become a full, co-operating and contributing partner in the umbrella project between IAEA and UNEP in order to further strengthen the Marine Environmental Studies Laboratory; (ii) concurred that the Intergovernmental Panel for GIPME should be activated and revitalized in order to play its intended role in forging the consolidation and integration of our joint marine pollution monitoring programmes. He recalled that decisions 17/20 and 18/3 of the Governing Council of UNEP request the Executive Director of UNEP to co-operate closely, *inter alia*, with the Intergovernmental Oceanographic Commission of UNESCO in preparation for the Intergovernmental Conference on Land-based Activities, Washington DC, 23 October-3 November 1995, and expressed his wish to co-operate with IOC on this important activity. He furthermore invited IOC to co-operate with UNEP in questions relating to the role of the oceans as a carbon sink. He informed the Assembly that

UNEP intends to co-sponsor OSLR and to work closely with IOC on matters related to the protection of marine biodiversity, and the management and sustainable utilization of living marine and coastal resources under the UNEP Marine Living Resources Sub-Programme within the framework of the newly integrated programme of UNEP. He stressed the wish of UNEP to work and co-ordinate more closely with IOC in areas such as the South-west Atlantic, with Argentina, Brazil and Uruguay, as well as in the Red Sea, the Black Sea and the Caspian Sea regions with their respective riparian states, using the successful model of CEPPOL. He welcomed UNESCO's initiative to launch the interdisciplinary project on coastal zones and small islands, and stated that this fits well with the new integrated approach adopted by the UNEP Governing Council at its 18th Session, concerning the management of marine and coastal areas, and the associated watershed and river basins. He also stated that UNEP looks forward to establishing effective co-operation between this project and its work on Integrated Coastal Area Management in the context of the Barbados Plan of Action for Small Islands Developing States (SIDS).

518 The Chairman thanked the Representative of UNEP for his very positive statement (see full text in Annex III-H). **The Assembly welcomed** the statement and **strongly endorsed** the existing and expanding co-operation between IOC and UNEP.

519 The WMO representative noted that WMO had been a long-time member of ICSPRO, and continued to provide both professional and secretarial staff support to IOC under the terms of the ICSPRO agreement. He indicated the concurrence of WMO with the conclusions of both the recent ICSPRO consultations, and stressed that ICSPRO had a continuing and important role to play as an interagency co-ordination and information exchange mechanism in marine science, which WMO fully supported. The full statement of the WMO representative is given in Annex III-H.

520 The Chairman thanked the Representative of WMO for his very positive statement. **The Assembly welcomed** the statement and **strongly endorsed** the existing and expanding co-operation between IOC and WMO.

15.2 CO-OPERATION WITH ICSU AND SCOR

521 The Executive Secretary IOC recalled that extensive co-operation exists between IOC, ICSU and SCOR which is reflected in the substantive programmes, and under those agenda items. This is also reflected in several existing agreements on co-operation and in joint working groups and committees.

522 **The Assembly took note** of the information and in particular **noted** the references to ICSU and SCOR in the context of several programmes, and fully endorsed this co-operation.

15.3 CO-OPERATION WITH OTHER BODIES INCLUDING UNU, ICES, ECOR, CPPS, IOMAC, CCOP AND SOPAC

523 This agenda item was introduced by the Executive Secretary IOC, with reference to Document IOC-XVIII/2, and to progress made during the last intersessional period with regard to co-operation with other organizations. Through co-operation and co-ordination via the IOC scientific and services programmes, e.g. GIPME, HAB and regional activities, IOC has provided scientific inputs to various partners which are dealing with prevention of marine pollution, rational uses of living marine resources and integrated coastal zone management.

524 The Delegate of Canada, speaking on behalf of the Arctic Ocean Science Board (AOSB) made the following statement to the Assembly:

"The AOSB had its fourteenth meeting at the Alfred Wegener Institute in Bremerhaven in March this year. The Board functions as a co-ordinating body of about twelve Arctic and sub-Arctic countries in promoting and implementing programmes of mutual interest in Arctic ocean science.

The Greenland Sea Project represents an international multi-year study of the oceanography of the Greenland Sea involving all types of measurements from satellites to acoustic arrays over several years. It has recently been concluded with a symposium in Hamburg with many new and controversial results being presented. Its proceedings will be published later this year with up to 25 refereed papers. The GSP data set is being maintained at ICES. An on-going programme

of the AOSB is the International Arctic Polynia Programme (IAPP). This programme is looking at the processes and ecology of Arctic polynia and to date has concentrated on the polynia to the North-East of Greenland and the second significant effort in this area will be an over-wintering Expedition late in 1995. The R/V POLARSTERN of Germany will be used to land the party.

The Board is co-operating with the IOC/IODE Committee to study the subject of an Arctic Ocean Data Centre. A future thrust is considering a programme of study for physical, chemical, biological and geological processes of major Arctic river systems and their changes through the last 15,000 years. This should prove a useful contribution to the WCRP-ACSYS programme and will offer another possible area of co-operation with the IOC".

525 The Delegate of Canada confirmed that he will continue to keep the IOC Assembly informed of the new development of this organization. He agreed to act as the IOC Rapporteur for Arctic research and observations.

526 The Delegate of India informed the Assembly of the training programme in Madras, India, in co-operation with IOI and, encouraged IOC to strengthen links with IOI in this regard.

527 **The Assembly noted** with satisfaction the progress made in co-operation with other organizations. **The Assembly stressed** that further efforts in this regard should be carried out in a co-ordinated and harmonized way, in order to avoid duplication of effort.

E. CONCLUDING MATTERS

16. ELECTIONS

528 **The Assembly noted** the report by the Chairman of the Nominations Committee, following which:

- (i) some improvements were to be made by the Secretariat during the next intersessional period upon the French 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";
- (ii) a note appearing in an earlier version of Document IOC-XVIII/NOM-WP.1 (posted only just before the last meeting of the Nominations Committee), stating that the proposal of Germany to nominate Mr. L. Laubier for the IOC chairmanship made "*on behalf of the European Union*", was not to be considered by the Nominations Committee, but rather by the Assembly, due consideration being taken of the nomination form itself;
- (iii) all the nomination forms before it were valid and should therefore be forwarded to the Assembly, as document IOC-XVIII/NOM-WP.1.

529 **The Assembly further noted** that an in-depth study should be undertaken to make sure that all "*electoral groups*" as defined by UNESCO be duly represented amongst the IOC Officers in future, whilst recognizing that this would imply an amendment to the IOC Statutes and Rules of Procedure.

16.1 ELECTION OF THE OFFICERS OF THE COMMISSION

530 **The Assembly noted** that there were two nominees for the position of Chairman of the Commission. Mr. G. L. Holland, nominated by Canada, proposed by Thailand and seconded by Norway, was introduced by the Delegate of Norway, and Mr. L. Laubier, nominated by France, proposed by Germany and seconded by Egypt, was introduced by the Delegate of Italy. The ensuing vote showed an exact balance between the two candidates. The following ballot was decisive. There was then only one candidate for each of the positions of Vice-chairmen of the Commission, who were elected by acclamation.

531 The newly elected Officers of the Commission are:

Chairman:	Mr. G. L. Holland	(Canada)
1st Vice-chairman:	Lic. G. Garcia Montero	(Cuba)
2nd Vice-chairman:	Prof. M. Ravindran	(India)
3rd Vice-chairman:	Prof. V. G. Neiman	(Russian Federation)
4th Vice-chairman:	Dr. E. Okemwa	(Kenya)

16.2 ELECTION OF THE MEMBERS OF THE EXECUTIVE COUNCIL

532 **The Assembly noted** that, including the addition of the failed candidate for the chairmanship of the Commission, there were 31 candidates to Member State seats on the Executive Council, viz the exact maximum number of those seats. The Members of the Executive Council were therefore elected by acclamation.

533 The Member States represented 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 hereto.

17. DATES AND PLACES OF THE NINETEENTH SESSION OF THE ASSEMBLY AND THE TWENTY-EIGHTH AND TWENTY-NINTH SESSIONS OF THE EXECUTIVE COUNCIL

534 The Executive Secretary IOC reminded the Assembly of the dates for the Twenty-ninth Session of the Executive Council, 7-18 October 1996. He informed the Assembly that possible dates for the Nineteenth Session of the Assembly were 17 June-4 July 1997, and for the Thirtieth Session of the Executive Council, 16 June 1997.

535 **The Assembly took note** of these dates. The Delegates of France and Italy pointed out the potential conflict between the period for the Twenty-ninth Executive Council and the session of the UNESCO Executive Board or its related meetings. The Secretariat will look into this so as to avoid conflicting dates.

536 **The Assembly decided** that the dates for the Twenty-ninth Session of the Executive Council should be decided when the dates for the UNESCO Executive Board are decided so as to avoid any clash of dates.¹

537 The Executive Secretary IOC also drew the attention to the preliminary consideration of themes for the Bruun Memorial Lectures and indicated as a possible theme "Aspects of Coastal Area Management including Socio-economic Ones".

538 **The Assembly took note** of this proposal and **agreed** that further analysis should be carried out and reported on to the Twenty-ninth Session of the Executive Council for its decision.

539 The elected First Vice-Chairman agreed to be responsible for this matter.

18. ADOPTION OF THE SUMMARY REPORT

540 **The Assembly adopted** the Summary Report of the Session together with eighteen Resolutions (Annex II hereto).

19. CLOSURE

541 The Chairman thanked all concerned, including the Vice-Chairmen, the Delegations, the Secretariat, support staff and interpreters for their active participation in the Assembly, and their support towards a productive and fruitful session. He particularly expressed his appreciation to the Executive

¹ Following consultations with UNESCO and in the light of the Executive Board Meeting, the dates for IOC/EC-XXIX are 30 September-10 October 1996.

Secretary and the IOC Conference Officer/Documentalist, for their untiring support and professionalism. He also congratulated the incoming Chair and Vice-Chairs and wished them all success. The incoming Chair expressed his great appreciation of the Chairman and thanked him for his firm leadership and guidance of IOC throughout his period of office. He presented the Chairman with a book of signatures.

542 The Delegate of Brazil, on behalf of all the Delegations, thanked the Chairman for his outstanding management of the Session and his great contribution to IOC. The Delegate also confirmed his great satisfaction with the results of the Session, and also the manner of using mechanisms of *ad hoc* meetings and consultations during the Sessions, so as to find the most constructive approach.

543 The Chairman warmly thanked the Delegate of Brazil, and all the other Delegations, and again expressed his appreciation for such close co-operation.

544 The Chairman then closed the Eighteenth Session of the IOC Assembly at 20.30 on 26 June 1995.

ANNEX I

AGENDA

1. OPENING

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3. ADMINISTRATIVE ARRANGEMENTS

3.1 ADOPTION OF THE AGENDA

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3.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

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AND FINANCIAL STATEMENT, FOLLOWED BY DEBATE

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5. DEVELOPMENTS WITHIN UNESCO, FOLLOW-UP TO DOSS, AND REVISED RULES OF PROCEDURE

6. SECOND INTERNATIONAL CONFERENCE ON OCEANOGRAPHY - FOLLOW-UP

7. MEDIUM-TERM PLAN 1996-2001 AND PRELIMINARY CONSIDERATION OF PROGRAMME AND BUDGET FOR 1996-1997

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8. FOLLOW-UP OF THE 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

8.1 AGENDA 21 AND ACC SUB-COMMITTEE ON OCEANS AND COASTAL AREAS

8.2 UN YEAR OF THE OCEAN 1998

9. IOC AND UNCLOS

10. OCEAN SCIENCES

10.1 OCEANS AND CLIMATE

10.1.1 WCRP-JSC, including TOGA and CLIVAR

10.1.2 WOCE

10.1.3 Relations with FCCC, including First Conference of the Parties (COP), and IPCC

10.1.4 OOSDP; Second Meeting of Scientific and Technical Experts on Oceans and Climate (Malta, 1994)

10.1.5 WCP Joint Proposal

10.2 OCEANS AND GLOBAL CHANGE: LOICZ; JGOFS, INCLUDING CO₂ PANEL; COASTAL ZONES (COASTS)

10.3 OCEAN SCIENCE IN RELATION TO LIVING RESOURCES (OSLR); IPHAB; GLOBEC; CONVENTION ON BIOLOGICAL DIVERSITY

10.4 OCEAN SCIENCE IN RELATION TO NON-LIVING RESOURCES (OSNLR), INCLUDING CONFERENCE ON COASTAL CHANGE (BORDEAUX, 1995)

10.5 OCEAN MAPPING

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

11. OCEAN SERVICES

11.1 GLOBAL OCEAN OBSERVING SYSTEM AND RELATED ACTIVITIES

11.1.1 Second Session of the IOC-WMO-UNEP Committee for GOOS

11.1.2 Global Climate Observing System (GCOS)

11.1.3 Global Sea-Level Observing System (GLOSS)

11.1.4 Integrated Global Ocean Services System (IGOSS)

11.1.5 Data Buoy Co-operation Panel (DBCP)

11.1.6 Satellite Remote Sensing and Relation to CEOS

11.1.7 Global Terrestrial Observing System (GTOS)

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

11.2.1 Data Management

11.2.2 Global Temperature-Salinity Pilot Project (GTSP)

11.2.3 Marine Information Management

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13. REGIONAL SUBSIDIARY BODIES

13.1 IOCARIBE, INCLUDING EVALUATION

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13.4 IOCINDIO

13.5 IOCEA

13.6 COLLABORATION WITH ROPME AND PERSGA

13.7 MEDITERRANEAN

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14. PROGRAMME AND BUDGET

14.1 DRAFT PROGRAMME AND BUDGET FOR 1996-1997

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15.3 CO-OPERATION WITH OTHER BODIES INCLUDING UNU, ICES, ECOR, CPPS, IOMAC, CCOP AND SOPAC

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ANNEX II

ADOPTED RESOLUTIONS

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Resolution XVIII-1

AD HOC STUDY GROUP ON IOC DEVELOPMENT, OPERATIONS, STRUCTURE AND STATUTES (DOSS)

The Intergovernmental Oceanographic Commission,

Having considered the Revised Rules of Procedure as found in Document IOC-XVIII/2 Annex 2 and the Report on Implementation of Points 1-3 and 5 of Part II of the Annex to Resolution XVII-20 as found in Document IOC-XVIII/2 Annex 8,

Recalling IOC Resolution XVII-20 and, in particular, the subjects that require further study, as listed in Part II of its Annex,

Decides to continue the work of the *ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS) with the revised composition and terms of reference as found in the Annex;

Invites Member States to participate as observers in sessions of the *ad hoc* study group if they so wish;

Instructs the Executive Secretary IOC to circulate to all Member States the provisional agenda and timetable for the sessions of the *ad hoc* study group no less than two months before the session;

Requests the *ad hoc* Study Group to provide a progress report to the Executive Council at its Twenty-ninth Session in 1996, an interim report to the Nineteenth Session of the Assembly in 1997 with specific recommendations for possible adoption by that session of the Assembly, and a final report to the Twentieth Session of the Assembly in 1999.

Financial implications: to be defined in function of the composition of the *ad hoc* Study Group and required secretariat support.

Annex to Resolution XVIII-1

***Ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS)**

(Revised Composition and Terms of Reference)

I. Composition

The revived *ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS 2) shall be composed of 8 individuals who will bring to this matter their expertise on missions and programmes of the IOC, as well as on financial, legal and administrative aspects.

The previous Chairman of the Commission, Professor Manuel M. Murillo, Costa Rica, shall serve as Chairman of the study group and the new Chairman of IOC will be *ex officio* member of the group.

II. Terms of Reference

The revived *ad hoc* Study Group on IOC Development, Operations, Structure and Statutes (DOSS), taking into account the previous work undertaken by the Study Group and views expressed at the Eighteenth Session of the Assembly, shall undertake further study on the following subjects:

- (i) The Statutes and Rules of Procedures of the IOC, taking into account the previous studies and the need for adjustments to better reflect IOC practice in accordance with the functional autonomy of IOC within UNESCO;
- (ii) The feasibility, in the longer term, of an IOC Pledging System;

- (iii) All aspects having a bearing on geographical distribution;
- (iv) Administrative and management matters, including:
 - The adequacy of the financial contributions to IOC in the light of its present responsibilities and those with which it may be intrusted in the future;
 - Methods and mechanisms to ensure continuing budgetary responsibility and administrative efficiency of the Commission;
 - The need for an objective methodology for regular evaluation of the IOC programmes, structures and procedures;
 - The frequency of meetings for the IOC Assembly and Executive Council on the basis of the roles and responsibilities of these bodies;
 - The role of the elected officers of the IOC, individually and as a group, and the need for a Bureau, together with its composition and role;
 - Evaluation and advice on staffing requirements, including making the best use of all available resources for the IOC.

Resolution XVIII-2

FINANCIAL REGULATIONS APPLICABLE TO THE SPECIAL ACCOUNT OF THE IOC

The Intergovernmental Oceanographic Commission,

Recalling Resolution 10.4 adopted by the UNESCO General Conference at its 24th session and, in particular, Article 1 of the IOC Statutes which provides the legal and political framework for the Commission,

Having received Decision 5.3.1 on "New Arrangements for the Intergovernmental Oceanographic Commission" of the 146th UNESCO Executive Board,

Noting that the UNESCO Executive Board, on a recommendation of its Group of Experts on Financial and Administrative Matters, has proposed three amendments to the proposed text, as reflected in the Annex to this Resolution,

Confirms its agreement to the proposed financial regulations, as amended by the Group of Experts on Administrative and Financial Matters of the UNESCO Executive Board;

Instructs the Executive Secretary IOC to prepare detailed financial rules applicable to the Special Account for initial consideration by the Twenty-ninth Session of the IOC Executive Council and subsequent submission to the Nineteenth Session of the Assembly.

Annex to Resolution XVIII-2

Financial Regulations Applicable to the Special Account of the Intergovernmental Oceanographic Commission

Article 1 - Creation of a Special Account

- 1.1 In accordance with Article 6, paragraph 6, of the Financial Regulations of UNESCO, there is hereby created a Special Account for the Intergovernmental Oceanographic Commission, hereafter referred to as IOC. The following Regulations shall govern the operation of this account.

Article 2 - Financial period

- 2.1 The biennial financial period shall follow that of UNESCO.

Article 3 - Income

- 3.1 The income of the Special Account shall be divided into four sub-classifications, as follows: (a) the financial allocations voted by the General Conference of UNESCO; (b) voluntary contributions, endowments, gifts and bequests allocated or offered by institutions of the United Nations, governments, public and private bodies, associations, foundations and individuals, provided that the purposes for which they are made are consistent with the policies, aims and activities of IOC; (c) fees collected for special purposes; (d) miscellaneous revenue.
- 3.2 The Secretary of IOC, hereafter referred to as the Secretary, acting under the authority of the Director-General of UNESCO, may accept on behalf of IOC the income defined in Article 3.1, subject to the prior approval of the IOC Assembly, hereafter referred to as the Assembly, in any case which would entail additional obligations for IOC.
- 3.3 The Secretary shall report to the Assembly on the subventions, voluntary contributions, endowments, gifts and bequests accepted.

Article 4 - Budget

- 4.1 The Secretary shall prepare, in a form to be determined by the Assembly, a biennial budget and shall submit it to the Assembly for approval.
- 4.2 The budget appropriations voted shall constitute an authorization to incur obligations and make expenditures for the purposes for which the appropriations were voted and up to the amounts available for each source of financing.
- 4.3 The appropriations shall remain available for obligation during the financial period to which they relate.
- 4.4 The appropriations shall remain available for one year following the end of the financial period to which they relate to the extent that they are required to discharge obligations in respect of goods supplied and services rendered in the financial period and to liquidate any other outstanding legal obligations of the financial period.
- 4.5 The balance of the appropriations remaining unobligated at the close of a financial period shall be credited to the General Account of IOC.
- 4.6 At the end of the one-year period provided for in Article 4, paragraph 4, the then remaining unspent balance of appropriations shall be credited to the General Account of IOC.

Article 5 - General Account

- 5.1 There shall be established a General Account, as part of the Special Account, to which shall be credited the income of IOC as described in Article 3 of these Regulations, and which shall be used to finance the approved budget of IOC.
- 5.2 The balance remaining of this General Account shall be carried forward from one financial period to the next.
- 5.3 The use to which the funds in this General Account may be put shall be determined by the Assembly.

Article 6 - Custody and investment of funds

- 6.1 All the funds of IOC shall be deposited without delay with banks or other depositories selected by the Secretary or by another officer of UNESCO to whom such power is delegated by the Secretary.
- 6.2 The Secretary may make such investments of moneys not needed for immediate requirements as he or she considers necessary, within the framework of the policy implemented by the Comptroller with respect to the investments of UNESCO.
- 6.3 The income earned on such investments shall be credited under the miscellaneous revenue of IOC.

Article 7 - Trust Funds, Reserves and Special Accounts

- 7.1 The Secretary shall establish Reserves to finance the Working Capital Fund, end-of-service indemnities and other obligations of IOC. A review of these Reserves shall be conducted biennially at the time when the budget is approved.
- 7.2 Trust Funds, Reserves and Special Accounts may be established by the Secretary and shall be reported to the Assembly.
- 7.3 The Secretary may when necessary in connection with the purpose of a Trust Fund, Reserve or Special Account prepare special financial regulations to govern the operations of these funds or accounts and shall report thereon to the Assembly. Unless otherwise provided these funds and accounts shall be administered in accordance with these Regulations.

Article 8 - Internal control

- 8.1 The Secretary shall:
 - (i) Establish, for approval by the Assembly, detailed financial rules and procedures in order to ensure effective financial administration and economy.
 - (ii) Cause all payments to be made on the basis of supporting vouchers and other documents which ensure that the services or goods have been received, and that payment has not previously been made.
 - (iii) Designate the officers who may receive moneys, incur obligations and make payments on behalf of IOC.
 - (iv) Maintain an internal financial control which shall provide for an effective current examination and for review of financial transactions in order to ensure:
 - (a) the regularity of the receipt, custody and disposal of all funds and other financial resources of IOC;

- (b) the conformity of obligations and expenditures which may be determined by the Assembly, or with the purposes and rules relating to Trust Funds and Special Accounts;
 - (c) the economic use of the resources of IOC.
- (v) Ensure that the obligations incurred do not exceed the moneys actually received and available to cover those obligations.
- 8.2 No obligations shall be incurred until allotments or other appropriate authorizations have been made in writing under the authority of the Secretary.
- 8.3 The Secretary may, after full investigation, authorize the writing-off of losses of cash, stores and other assets, provided that a statement of all such amounts written-off shall be submitted to the External Auditor for examination with the accounts.

Article 9 - The accounts

- 9.1 The Secretary shall maintain such accounting records as are necessary and shall submit annual accounts to the IOC Executive Council for the first year of the biennial financial period and to the Assembly, and to the UNESCO Executive Board and General Conference, for the full biennial period, showing, for the financial period to which they relate:
 - (i) the income and expenditure of all funds;
 - (ii) the budgetary situation including:
 - (a) original appropriations;
 - (b) the appropriations as modified by any transfers or additional appropriations as approved by IOC Executive Council;
 - (c) the amounts charged against these appropriations;
 - (iii) the assets and liabilities of IOC.

He or she shall also give such other information as may be appropriate to indicate the current financial position of IOC.

- 9.2 The biennial accounts of IOC shall be presented in US dollars. Accounting records may, however, be kept in such currency or currencies as the Secretary may deem necessary.
- 9.3 Appropriate separate accounts shall be maintained for all Trust Funds, Reserves and Special Accounts.

Article 10 - External audit

- 10.1 The accounts of IOC as approved by its Secretary will form an integral part of the overall financial statements of UNESCO that are submitted to the External Auditor of UNESCO for audit and shall be presented to the IOC Executive Council and Assembly, as well as to the UNESCO Executive Board and General Conference for their approval.

Resolution XVIII-3

UN YEAR OF THE OCEAN 1998

The Intergovernmental Oceanographic Commission,

Recalling its Resolution XVII-17, "1998 - The International Year of the Ocean",

Noting that the 27th General Conference by its Resolution 2.5 adopted the proposal of the IOC to declare 1998 "International Year of the Ocean",

Noting further that the General Assembly of the United Nations at its forty-ninth session adopted Resolution 49/131, proclaiming 1998 as the "International Year of the Ocean",

Being informed that the UNESCO Executive Board at its 146th Session instructed the Director-General to take all necessary measures likely to ensure the success of this activity,

Having considered the proposals for the IOC to be associated with the 1998 International Year of the Ocean as stated in Document IOC-XVIII/2 Annex 3,

Decides that the IOC shall participate through its different programmes in activities organized in the framework of "1998 - The International Year of the Ocean" and in activities initiated within the framework of EXPO 98;

Instructs the Executive Secretary IOC to organize the work of an IOC preparatory task team for "1998 -The International Year of the Ocean", in close consultation with the Chairman;

Instructs further the Executive Secretary IOC to report on the progress and proposals at the Twenty-ninth Session of the Executive Council and the Nineteenth Session of the Assembly.

Financial implications: in accordance with agreements in force there should be no or very limited costs to existing IOC sources for this activity; additional funds can, however, be sought.

Resolution XVIII-4

IOC AND UNCLOS

The Intergovernmental Oceanographic Commission,

Taking note of the entry into force, on 16 November 1994, of the United Nations Convention on the Law of the Sea (UNCLOS),

Recognizing that it is necessary to identify the IOC role with respect to the relevant provisions of the Convention,

Expresses its thanks to Prof. Alexander Yankov for the considerable work that he has undertaken on this matter;

Decides to establish an open-ended Intersessional Working Group on the IOC Role in Relation to UNCLOS (IOC-LOS), to work in accordance with the terms of reference contained in Annex I of this resolution;

Instructs the Executive Secretary IOC to:

- (i) distribute to Member States the views and any proposals made by the Working Group at least three months prior to the Twenty-ninth Session of the Executive Council;

- (ii) arrange, depending on the progress of work, a preparatory meeting open to all Member States of the Commission, prior to the Twenty-ninth Session of the Executive Council, in order to examine the Working Group's proposals;
- (iii) make available the Final Report of the Group with sufficient time to allow for its circulation in advance of the Nineteenth Session of the Assembly.

Financial implications: Participation in possible open-ended working group meeting at national expense; service of potential meeting, including relevant interpretations if required at IOC expense.

Annex to Resolution XVIII-4

Terms of Reference for the Intersessional Working Group on IOC's Possible Role in Relation to UNCLOS

A. PROCEDURE

- 1. The bulk of the Group's work shall be done by correspondence, with the co-ordination of the Executive Secretary IOC.
- 2. An appropriate balance shall be encouraged in the membership of the Working Group between experts with training in the law of the sea and experts with training in marine sciences.

B. SUBSTANCE

- 1. The Working Group shall review all provisions of UNCLOS that may have explicit or implicit relevance to the role of the IOC.
- 2. The Working Group shall take into account:
 - (a) the purpose and functions established by the IOC Statutes and the Rules of Procedure;
 - (b) the competence of the bodies established under UNCLOS and that of other existing bodies in the United Nations system;
 - (c) the rights and duties of the Coastal States as stipulated in UNCLOS, particularly those relating to the general principles of prior consent for the implementation of activities in the Exclusive Economic Zone (EEZ) and on the continental shelf.

Resolution XVIII.5

INTERGOVERNMENTAL WOCE PANEL

The Intergovernmental Oceanographic Commission,

Noting with satisfaction that the field phase of the World Ocean Circulation Experiment (WOCE) will conclude by 1998, but that in order to realize the maximum benefit, analysis, interpretation, modelling and synthesis must continue until 2002,

Recognizing that access to areas under national jurisdiction is fundamental to deriving the full scientific value of WOCE hydrographic sections, since continuous sections from the deep ocean into shallow water are essential for the accurate determination of transports in the boundary currents,

Recognizing further that to accomplish its mission, WOCE infrastructure must be maintained throughout WOCE and beyond,

Being aware that WOCE has put forward a strategy that includes major workshops and conferences and that present commitments exist for a major WOCE Conference hosted by Canada in mid-1998, and a Southern Ocean Workshop to be hosted by Australia in 1997; and that additional workshops on the South Atlantic, Pacific, Indian, and North Atlantic Oceans are needed,

Noting with appreciation the contributions of Member States to continue their efforts through the observational period of WOCE, and in particular the offer of continued support for the WOCE International Project Office (IPO) in the UK,

Recognizing the request for a carefully considered transition of WOCE-like activities to the new WCRP Programme on Climate Variability and Predictability (CLIVAR),

Noting the very successful demonstration of satellite altimetry to provide unprecedented and extremely accurate global data sets of the ocean circulation and its changes,

Considering the unique importance of the few existing open ocean time series observations in confirming long-time scale ocean variability,

Decides:

- (i) to support WOCE activities into the analysis, interpretation, modelling and synthesis phase that will continue beyond the completion of the observational phase;
- (ii) to continue to foster the concept of the rapid free and open exchange of data, to support for the WOCE Data Assembly and Special Analysis Centres and to assist the process by encouraging Member States to second scientists to WOCE Data Assembly Centres (DACs) and Special Analysis Centres (SACs) for periods of 2-6 months;
- (iii) to endorse and support the planned WOCE International Conference to be hosted by Canada in 1998 (the International Year of the Ocean);
- (iv) to endorse the planned series of regional and subject-related workshops, including the Southern Ocean Workshop in 1997 to be hosted by Australia;

Invites Member States to consider the need for WOCE observational programmes to acquire data in areas under national jurisdiction in order to complete planned WOCE observations;

Urges Member States to continue existing oceanic time series measurements and to initiate new ones as important elements in the transition from WOCE to those follow-on programmes that will investigate long-term climate variability and will represent an important part of the climate module of GOOS;

Instructs the Secretary IOC to convey to the relevant space agencies the need for continuing satellite altimeter observations of the highest quality possible, for a dedicated gravity mission to make possible the extraction of the highest accuracy from the altimeter data, and for global scatterometer coverage in support of other climate-related programmes.

Estimated financial implications for the IOC: US\$20,000 in support of WOCE International Conference and related matters.

Resolution XVIII-6

CLIMATE RELATED ISSUES

The Intergovernmental Oceanographic Commission,

Acknowledging the central importance of the ocean in the global climate system, and the necessity to obtaining comprehensive and accurate observations of the ocean for incorporation into numerical predictions of climate,

Emphasizing the central importance of climate-related activities to the work of the Commission, and the necessity of effective IOC participation in the World Climate Programme, particularly in its integrated Climate Agenda,

Recalling that Chapter 17 of Agenda 21 of UNCED calls on relevant competent United Nations bodies to carry out analysis, assessment and systematic observations in the role of the oceans in the global climate,

Taking into account that successful implementation of the UN Framework Convention on Climate Change will address the needs of sustainable development,

Noting that the First Conference of Parties to the Framework Convention on Climate Change (FCCC) has established a Subsidiary Body for Scientific and Technological Advice (SBSTA) with the principal task of linking the scientific, technical and technological assessments to the policy-oriented needs of the Parties,

Recognizing that the IOC has a substantial role to play in informing the SBSTA of investigations into the role of the ocean in global climate change, and of the IOC's programme contributions in this regard,

Recognizing also that IOC needs to collaborate with other governmental and non-governmental scientific bodies in an integrated way to develop and present new knowledge with respect to the role of the ocean in global climate change,

Takes note of the Executive Summary and Policy Makers Summary of the Climate Agenda as prepared by the Co-ordinating Committee for the World Climate Programme;

Instructs the Executive Secretary IOC to:

- (i) continue to participate in the further development of the Climate Agenda, and in the UN FCCC process;
- (ii) consult with the Chairman of the SBSTA regarding the specific needs and requirements of this body for scientific data and assessments which can be provided through IOC;
- (iii) undertake the appropriate arrangements to establish close working links with the IPCC and maintain established co-operation with the Climate Change Secretariat;
- (iv) adjust the resources of the Secretariat so as to reflect the importance of climate-related activities to the work of the Commission;

Invites the Chairman of the IPCC to make a presentation to the next IOC Assembly;

Urges Member States to support related climate activities in their own national programmes and ensure proper international co-ordination through the IOC and other appropriate bodies.

Financial implications for IOC budget: US\$ 100,000 for a reasonable implementation, in addition to WCRP, GOOS and GCOS.

Resolution XVIII-7

COASTAL REGIONS AND SMALL ISLANDS

The Intergovernmental Oceanographic Commission,

Recalling:

- (i) Agenda 21, Chapter 17 of UNCED, which emphasized the important role of integrated coastal area management for sustainable use of the coastal zone for national development and the need for scientifically valid information, as well as related capacity building,
- (ii) IOC Resolution XVII-1: "Coastal Zone Activities", which calls for more effective mechanisms to co-ordinate IOC programmes with those of other organizations, as proposed in IOC/INF-987,
- (iii) the UN Conference on Small Island Developing States (Barbados, April-May 1994) whose outcome stressed the important role IOC has to play in providing scientific input and data for addressing such issues as sea-level rise, natural environmental disasters, management of marine resources, marine biodiversity, as well as development of marine science and technology, and related human resources, and
- (iv) the United Nations Convention on the Law of the Sea,

Taking note of the proposed UNESCO Project on Environment and Development in Coastal Regions and in Small Islands (hereafter, the Project), based on the joint statement by the Chairpersons of IOC, IGCP, IHP and MAB to the 27th session of the UNESCO General Conference,

Welcomes this constructive initiative which aims at providing a framework for co-operative and co-ordinated activities on Coastal Regions and Small Islands among UNESCO's international and intergovernmental programmes in the environmental and social sciences: MAB, IGCP, IHP, MOST (hereafter referred to as "the programmes concerned") and the IOC;

Decides:

- (i) to review its coastal activities in general, to optimize the way its ocean science and services programmes contribute to actual integrated management of coastal regions, specifically promoting the development of methodologies, institutional infrastructure, and associated training and education, making use of regional subsidiary bodies and building on local efforts;
- (ii) to invite the UNESCO programmes concerned, together with the IOC, to jointly undertake an improved and refined definition of the scope and context of the Project, outlining how it can add value over and above what individual programmes and countries could accomplish; the Project should make full use of the scientific potential offered by programmes of the UN and ICSU, as appropriate, and the capacity building mechanisms of START;

Recommends that:

- (i) a small, representative group of experts designated by the UNESCO programmes concerned and the IOC be convened in order to produce the improved and refined definition;
- (ii) the approach for implementation be based on pilot projects/case studies;

Invites the UNESCO programmes concerned together with the IOC to:

- (i) assess their respective roles addressing the interdisciplinary requirements of the Project; and
- (ii) recommend the interdisciplinary composition and head of the management unit required to implement the project;

Requests that the Chairman of the Commission convey to the Director-General of UNESCO the interest and willingness of IOC to collaborate in the interdisciplinary and intersectoral Project, as well as the suggestion that the management arrangements should reflect the complementary interests of, and contributions made to the Project by the UNESCO programmes concerned and the IOC.

Resolution XVIII-8

THIRD SESSION OF THE JOINT IOC-FAO INTERGOVERNMENTAL PANEL ON HARMFUL ALGAL BLOOMS (IPHAB)

The Intergovernmental Oceanographic Commission,

Recalling that the IOC, at the Twenty-seventh Session of its Executive Council, through Resolution EC-XXVII.3 approved the continuation of the Joint IOC-FAO Intergovernmental Panel on Harmful Algal Blooms (IPHAB),

Considering the Executive Summary of the Third Session of the Panel together with the three Resolutions and seven Recommendations adopted at the Session;

Takes note of the "Action Plan and Implementation Schedule" and the "Summary of Financial and Staff Requirements for the Biennium 1996-1997" attached to the Executive Summary;

Decides to take the following action on the Recommendations:

Recommendation 1 - Staffing of the HAB Programme Office

- (i) **Approves** the Recommendation and **invites** UNESCO and other Member States to provide matching funds to those provided by the USA partially supporting a Technical Secretary for OSLR of which the HAB programme is one component;
- (ii) **Urges** Denmark and the USA to maintain their support to OSLR/HAB and also **urges** other Member States to consider pooling resources for additional posts specifically for HAB;

Recommendation 2 - HAB Training and Capacity Building Programme

- (i) **Approves** the Recommendation subject to availability of resources;
- (ii) **Urges** Member States to co-sponsor training activities both in cash and in kind;

Recommendation 3 - Working Group on Transfer of Phytoplankton by Ballast Water of Ships

Approves the Recommendation;

Recommendation 4 - Working Group on Aquatic Biotoxins Related to Harmful Algae

Approves the Recommendation subject to availability of resources;

Recommendation 5 - Working Group on Harmful Algal Blooms in South America

Approves the Recommendation subject to availability of resources;

Recommendation 6 - Linkage between the HAB Programme and GOOS

- (i) **Approves** the Recommendation;
- (ii) **Urges** Member States to incorporate national or regional HAB monitoring into national, regional and international GOOS activities;

Recommendation 7 - Operation of the IOC Intergovernmental Panel on Harmful Algal Blooms

- (i) **Approves** the Recommendation;
- (ii) **Invites** the Panel to provide an Executive Summary of its Report, with a proposed Resolution for possible adoption, including an estimate of financial implications, to the Nineteenth Session of the Assembly;
- (iii) **Instructs** the Executive Secretary IOC to convene the Fourth Session of the joint IOC-FAO Panel prior to the Nineteenth Session of the Assembly.

Annex 1 to Resolution XVIII-8

Action Plan and Implementation Schedule

Main Activities	1996	1997
PROGRAMME SUPPORT Fourth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB-IV) Establishment of IOC HAB Science and Communication Centres Second Report of the IPHAB Task Team on Programme Development Inf. brochure on the Programme	 Vigo, Spain X	 (Paris) US, WESTPAC Member States IPHAB-IV
EDUCATIONAL ELEMENTS INFORMATION NETWORK: IOC newsletter: Harmful Algae News IOC Manual on Harmful Marine Microplankton TRAINING: Taxonomy Toxin Chemistry Monitoring & Management	 4 issues 1.ed. Copenhagen, Denmark; Vigo Spain; Aberdeen, UK; Tokyo, Japan, and regional	 4 issues Copenhagen, Denmark; Vigo Spain; Aberdeen, UK; Tokyo, Japan, and regional
SCIENTIFIC ELEMENTS Final Report of IPHAB Task Team on Aquatic Biotoxins Regional HAB Science Planning Workshops ICES-IOC Working Group on the Dynamics of Harmful Algal Blooms ICES-IOC Working Group Workshop SCOR-IOC/NATO Advanced Study Institute (SCOR-IOC WG 97) (Working Group on dissemination of phytoplankton by ballast water) (Working group on Aquatic Biotoxins related to Harmful Algae)	 X X Brest, France Kristineberg, Sweden Bermuda X X	 X X IPHAB-IV S-America
OPERATIONAL ELEMENTS Final Report of IPHAB Task Team on Design and Implementation of HAB Monitoring Programmes International Conference/Training Workshop on Design and Implementation of HAB Monitoring and Management Programmes	 X X	

Annex 2 to Resolution XVIII-8

Summary of Financial and Staff Requirements for the Biennium 1996-97 (in US \$)

Activity (see Action Plan)	A. Total financial implication of IPHABIII decisions and Recommendations	B. Estimated available funds (RP and TF)	C. Additional potential extra-budgetary contributions	D. Required extra- budgetary contributions for full programme implementation (A-(B+C))
PROGRAMME SUPPORT General (excl. Centres)	15.000	8.000	-	7.000
Staff	2 seconded	-	1 seconded	1 seconded
EDUCATIONAL ELEMENTS NETWORK (excl. publication)	10.000	2.000		8.000
TRAINING (incl. Centres)	350.000	190.000	-	160.000
SCIENTIFIC ELEMENTS	40.000	10.000		30.000
OPERATIONAL ELEMENTS	70.000	20.000	20.000	30.000
TOTAL	485.000	230.000	20.000	235.000

Resolution XVIII-9

MARINE BIODIVERSITY

The Intergovernmental Oceanographic Commission,

Recognizing the great importance of conserving marine biodiversity, including the need for research in the subject area,

Taking into account that successful implementation of the Convention on Biological Diversity will address the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources,

Taking into account the United Nations Convention on the Law of the Sea,

Noting that the Convention on Biological Diversity calls on the assistance, where appropriate, of competent international organizations to the Contracting Parties to the Convention, for its implementation,

Noting also that the First Meeting of the Conference of the Parties to the Convention on Biological Diversity adopted decision I/7 pertaining to the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), which, *inter alia*, states that at its first ordinary meeting, SBSTTA shall consider its *modus operandi* as well as the need to draw on relevant existing institutional structures; and, that the provisional agenda for SBSTTA's first ordinary meeting, as reported in decision I/7, will *inter alia* deal with provision of advice on the scientific, technical and technological aspects of the conservation and sustainable use of coastal and marine biological diversity (priority item),

Emphasizing the importance of re-evaluating the IOC existing programmes and activities to review the scope for enhancing marine biodiversity study as an IOC activity,

Recognizing that IOC has a substantial role to play in providing the Conference of the Parties to the Convention on Biological Diversity, through its Subsidiary Body on Scientific, Technical and Technological Advice, with advice on scientific issues concerning marine biodiversity,

Decides to continue the *ad hoc* Consultation of Experts on Marine Biodiversity as needed, drawing on other relevant programme activities of the IOC for implementation of its recommendations;

Instructs the Executive Secretary IOC to communicate with the Chair of SBSTTA on: the submission on behalf of IOC to the First meeting of SBSTTA of the report of the IOC-NOAA *ad hoc* Consultation on Marine Biodiversity; and, the identification of specific needs and requirements of SBSTTA for scientific input which can be provided by IOC;

Instructs the Executive Secretary IOC to interact with the International Sea-Bed Authority on matters of the effects of possible future exploitation of sea-bed resources and dumping on marine biodiversity, as well as to discuss the possibility for IOC to provide scientific input to the International Sea Bed Authority in this respect;

Instructs also the Executive Secretary IOC to strengthen links with the Man and Biosphere Programme in order to develop joint activities in the field of sustainable use and conservation of marine biodiversity;

Urges Member States to undertake efforts at the national and regional levels to compile inventories of their marine flora and fauna, building on existing data bases, containing *inter alia* species description and figures, ecological information and distribution and economical importance;

Takes note of activities listed in Annex 1 attached to the Executive Summary of the *ad hoc* Consultation (Document IOC-XVIII/2 Annex 9), and particularly **encourages** the pursuit of those activities which can be conducted at no cost to the IOC.

Financial implications: US\$ 55,000

Resolution XVIII-10

SUPPORT TO THE JOINT IOC-IHO OCEAN MAPPING PROGRAMME

The Intergovernmental Oceanographic Commission,

Noting that the Assembly at its Seventeenth Session (March 1993) stressed that the Ocean Mapping Programme is a priority action of the IOC and should be provided with necessary support,

Recognizing that the demand for an improved authoritative and global description of the bathymetry of the world's oceans from physical and biological oceanographers who are involved in modelling the ocean environment and predicting changes in global circulation, is steadily becoming more insistent, in addition to the increasingly fine resolution requirements of marine geologists and geophysicists,

Recognizing also that on a global scale, existing bathymetric data are widely scattered and of very variable quality in depth and position, but that there are now available high quality multi beam swath-sounding techniques and accurate position control systems,

Emphasizing that repeated routine ocean observations, as anticipated in the IOC's Global Ocean Observing System (GOOS), will be required to monitor oceanic change, and that this will require a secure framework of global bathymetry,

Acknowledging that the entry into force of the UN Convention on the Law of the Sea (UNCLOS) in November 1994 brings into focus the needs of coastal states to define and possibly exploit resources within national jurisdiction, and hence the requirement for detailed and accurate bathymetry of the margins,

Thanks the Russian Federation for seconding staff to support the Ocean Mapping Programme;

Instructs the Executive Secretary IOC:

- (i) to initiate discussions on how to establish scientific priorities for bathymetric surveys of the world's oceans and then, in collaboration with the International Hydrographic Organization, to establish a well co-ordinated and comprehensive plan for the coming decade;
- (ii) in the interim, to investigate the possibility of improving the level of funding in the regular programme for Ocean Mapping, with a view to ensuring that the biennial cycle of meetings of the Consultative Group on Ocean Mapping (CGOM) and the Regional Ocean Mapping projects is maintained, in order to retain the necessary impetus in the various activities of these bodies, with, in particular, the paramount requirement for a meeting of the Editorial Board for the International Bathymetric Chart of the Central Eastern Atlantic (IBCEA) (possibly in Lisbon or Brest) in 1996, of the Editorial Board for the International Bathymetric Chart of the Western Pacific by 1996, and of CGOM early in 1997;

Invites the Director-General of UNESCO to establish one professional post for the Ocean Mapping Programme as of 1996;

Invites the International Hydrographic Organization to consider the above proposal, and assist with the development of a plan for the proposed co-ordinated bathymetric surveys.

Financial implications for the 1996-1997 period:

- Participation of Ocean Mapping Officers, staff and experts in the relevant activities of Ocean Mapping and other programmes and organizations in 1996-1997 - US\$ 15,000;
- The biennial cycle of the meeting of the Consultative Group on Ocean Mapping in 1997 - US\$ 10,000;
- The meetings of the Editorial Boards for the biennial cycle: IBCM, IBCWIO, IBCCA, IBCEA and IBCWP in 1996-1997 - US\$ 95,000;
- Contracts with the Chairman of CGOM and participants of the Ocean Mapping Programme in 1996-1997 - US\$ 20,000;
- Professional staff at P-4 level for Ocean Mapping Programme - annual cost US\$ 100,000.

Total required: US\$ 240,000.

Resolution XVIII-11

SECOND SESSION OF THE IOC-WMO-UNEP COMMITTEE FOR THE GLOBAL OCEAN OBSERVING SYSTEM (I-GOOS)

The Intergovernmental Oceanographic Commission,

Having considered the Executive Summary of the Second Session of the IOC-WMO-UNEP Committee for GOOS (Document IOC-WMO-UNEP/I-GOOS-II/3S),

Recalling Resolutions XVII.5 and EC-XXVII.6 on GOOS,

Noting:

- (i) Resolutions I-GOOS-II.1 to I-GOOS-II.5,

- (ii) the Summary Report of the First Session of the I-GOOS Strategy Sub-Committee (Geneva, March 1995),
- (iii) the final report of the Ocean Observing System Development Panel,
- (iv) the report to the Assembly by the Chairman of I-GOOS, which covered the activities of both I-GOOS and J-GOOS,

Notes with satisfaction that France has seconded an expert to act as an Interim Director of the GOOOS Support Office;

Recognizing:

- (i) that GOOS can only be successfully planned and implemented through the combined efforts of Member States,
- (ii) that through their participation, Member States will benefit substantially from GOOS,
- (iii) the need for regional socio-economic studies in Member States to explain the benefits of GOOS to their governments and to society, based upon techniques and expertise evaluating these benefits, also to include capacities needed for GOOS involvement,
- (iv) that many of the benefits of GOOS to Member States will occur through the provision of enhanced ocean services, many of which already exist in some form,
- (v) the need to set priorities in GOOS implementation in the light of global economic pressures,
- (vi) that priority programmes of observation, capacity building and data and information management systems can and must begin to be implemented now,
- (vii) that a regional approach to GOOS implementation and to capacity building is likely to be the most appropriate means for many Member States, especially for aspects of GOOS concerning the ocean adjacent to their shores,
- (viii) that continuous GOOS development will necessitate appropriate long-term staff within the GOOS Support Office,

Strongly supports the following I-GOOS activities planned during the coming intersessional period:

- (i) review and analysis of existing marine meteorological and oceanographic services with a view to identifying future GOOS priority actions regarding the services module;
- (ii) convening of at least one regional GOOS development workshop to further the involvement of developing countries in GOOS planning and implementation and assess requirements for capacity building;
- (iii) implementation of socio-economic studies of GOOS benefits in a number of Member States, both developed and developing, in co-ordination with OECD;
- (iv) convening a meeting on the GOOS priorities in conjunction with I-GOOS-PS-II;
- (v) finalization of the GOOS Strategic Plan by the I-GOOS Strategy Sub-Committee and J-GOOS;

Urges J-GOOS to advance the development of the scientific design of GOOS, in close interaction with I-GOOS, the Strategy Sub-Committee for GOOS and the GOOS Support Office;

Instructs the Executive Secretary IOC to arrange for the reinforcement of the GOOS Support Office, including in particular, the appointment of a permanent UNESCO position for its Director, so as to strengthen assistance to I-GOOS and J-GOOS;

Invites the Secretary-General of WMO, the Executive Director of UNEP and the Secretary General of ICSU, to also support and assist in these activities in view of their importance to Member States and to the further development of GOOS.

Financial implications: there should be no additional financial implications for IOC if the working groups Chairmen do correctly their job in seeking extra-funds for the organization of the following workshops:

- Technical workshop on methodologies
co-sponsored by OECD + Member State US \$30 K
- Regional workshop on developing countries
socio-economic studies of GOOS US \$30 K
co-sponsored by the European Union

Resolution XVIII-12

INTERNATIONAL CORAL REEF INITIATIVE

The Intergovernmental Oceanographic Commission,

Being concerned that many of the world's coral reefs are severely degraded,

Recalling that Chapter 17 of Agenda 21 of UNCED identifies coral reefs, mangroves and sea-grass beds as marine ecosystems of high biological diversity and productivity and **recommends** that they be accorded high priority for identification and protection,

Noting the report on "Global Climate Change and Coral Reefs: Implications for People and Reefs" published by IUCN in 1994 on behalf of UNEP, IOC and ASPEI,

Considering that the Global Coral Reef Monitoring Network has the potential to be a significant component of the coastal module of the Global Ocean Observing System, as acknowledged by the IOC-WMO-UNEP Committee for GOOS at its Second Session (Document IOC-WMO-UNEP/I-GOOS-II/3S),

Noting with satisfaction the initiative of Australia, France, Jamaica, Japan, the Philippines, Sweden, the UK and the USA, to convene a workshop to promote the International Coral Reef Initiative (ICRI) held in the Philippines from 29 May to 2 June 1995,

Endorses the International Coral Reef Initiative (ICRI) Call to Action and Framework for Action which promotes the development of a Global Coral Reef Monitoring Network (GCRMN), emphasizes the importance of strategic research and monitoring to address key management issues, and call on the IOC, through the GCRMN to report every four years on the ecological condition of coral reefs and related ecosystems;

Decides to support the establishment of a Global Coral Reef Monitoring Network and the appointment of a Co-ordinator;

Instructs the Executive Secretary of IOC: (i) that the Global Coral Reef Monitoring Network (GCRMN) Co-ordinator establishes close contact with I-GOOS and the Joint Scientific and Technical Committee for GOOS (J-GOOS) to define the potential contribution of this network to the GOOS Coastal Module, (ii) to support the participation of GCRMN experts in the coral reef workshops in 1995 and the 8th International Coral Reef Symposium in 1996, subject to available resources, (iii) to explore extra-budgetary funding through international and regional funding agencies;

Invites UNEP, IUCN, UNESCO, WMO and ICSU (IGBP/LOICZ) to join IOC in the participation and co-sponsorship of proposed Global Coral Reef Network, subject to available resources, and **urges** Member States to make direct and in-kind contributions to the IOC to support this endeavour.

Financial implications: Implementation of the actions proposed has been funded to some extent by extra-budgetary funds from Member States; additional contributions from Member States and International Organizations will be required in order to ensure the implementation of the GCRMN. About US\$ 40,000 will be required from IOC to support participation of the experts from the Indian and Pacific Oceans in the Eighth International Coral Reef Symposium in 1996.

Resolution XVIII-13

GLOBAL SEA-LEVEL OBSERVING SYSTEM (GLOSS) ACTIVITIES 1996-1997

The Intergovernmental Oceanographic Commission,

Having reviewed the report of the Fourth Session of the IOC Group of Experts on GLOSS (Bordeaux, 31 January - 3 February 1995),

Taking into account the views expressed by the Second Session of the IOC-WMO-UNEP Committee on GOOS regarding GLOSS-GOOS interaction,

Noting with satisfaction:

- (i) the development of data/information sea-level products and services based on satellite and GLOSS stations measurements;
- (ii) the co-operation with the International Global Positioning System Service (IGS) in connecting some GLOSS TGBM to a Global Geodetic Reference System aimed at monitoring changes in the absolute global sea-level;
- (iii) the development of the Pilot Activity on Sea-Level Changes and Associated Coastal Impacts in the Indian Ocean;
- (iv) the production of "Afro-America GLOSS News" by Brazil;
- (v) the preparation and dissemination of the GLOSS Bulletin via the World Wide Web;
- (vi) the continued support to international GLOSS activities provided by Australia, Brazil, India, UK, USA and many other countries; and,
- (vii) the close interaction of the GE/GLOSS with the IAPSO Commission on Mean Sea-Level,

Noting with concern the decrease in the financial support of GLOSS international activities, particularly needed for training activities,

Endorses the report of the Fourth Session of the IOC Group of Experts on GLOSS, including the GLOSS Strategy and Plan of Action for 1995-1997;

Requests the IOC Group of Experts on GLOSS to:

- (i) pursue the strategy aimed at integrating *in situ* measurements from GLOSS stations with satellite altimetry and geodesy and producing global and regional sea-level products;
- (ii) continue collaborating with I-GOOS and J-GOOS on matters related to sea-level network design, data and information exchange, and sea-level products preparation and dissemination;

- (iii) continue providing scientific and technical advice on the implementation of the Pilot Activity on Sea-Level Changes and Associated Coastal Impacts in the Indian Ocean;
- (iv) continue to submit its reports directly to the IOC Governing Bodies;

Instructs the Executive Secretary IOC to:

- (i) make a separately identified allocation of funds for GLOSS in the IOC Draft Programme and Budget for 1996-1997;
- (ii) consider increasing support for GLOSS through the IOC regional and TEMA activities to enable implementation of the Plan of Action for 1995-1997;
- (iii) continue investigating the establishment of a dedicated post in the Secretariat to develop GLOSS and related sea-level studies and applications;

Urges Member States to continue their support of GLOSS implementation by:

- (i) maintaining and up-grading national GLOSS stations;
- (ii) developing GLOSS regional components, including EuroGLOSS and the Mediterranean regional network;
- (iii) providing data to PSMSL and other international and regional sea-level centres; and,
- (iv) providing contributions to the IOC Trust Fund to ensure the implementation of the GLOSS training and assistance programme;

Calls upon IOC Regional Subsidiary Bodies to support the activities of the GLOSS Regional Co-ordinators, particularly in organizing GLOSS training and technical assistance activities in their respective regions.

Financial implications for the 1996-1997 period:

- Training courses (2: 1 in 1996 and 1 in 1997) - US\$ 60,000
 - Support for the activities on sea-level data collection and dissemination; preparation of sea-level products; sea-level information exchange (GLOSS Handbook, GLOSS Bulletins, GLOSS CD ROM, etc.), (1996-1997) - US\$ 50,000
 - Advice and assistance to countries on installation and operation of tide-gauges (1996-1997) - US\$ 20,000
 - Participation of GLOSS officers, staff and experts in the relevant activities of GOOS and other programmes and organizations (1996-1997) -US\$ 15,000
 - Fifth Session of the IOC Group of Experts on GLOSS (1997) - US\$ 25,000
- Total required: US\$ 170,000.

Resolution XVIII-14

THE FLOATING UNIVERSITY PROJECT

The Intergovernmental Oceanographic Commission,

Being informed on the productive 5-year operation of the UNESCO(IOC/MRI) (TREDMAR) "Floating University" Project in the Mediterranean, Black and Baltic Seas, involving co-operative "training-through-research" planning, participation, data reduction, networking, and use of the UNESCO (IOC/MRI) (TREDMAR) computer-based modules in remote sensing and seismic tasks,

Having considered the Summary Report and recommendations of the TEMA Strategy *ad hoc* Meeting (March 1995) recommending a strengthened relationship with, among others, TREDMAR, and the need to enhance

complementarity between UNESCO and IOC programmes, especially with respect to coastal regions and small islands,

Calling attention to the necessity of quick and adequate sharing and transfer of knowledge among the Member States, and of developing and supporting existing, and new, forms of "training-through-research" and advanced education in regions,

Notes with appreciation the offer of the Russian Federation to continue its support to the UNESCO (TREDMAR) "Floating University" Project, in particular through the Mediterranean, Black and Baltic Seas facilities, and **accepts** its invitation to IOC for co-sponsorship of the project;

Decides to co-sponsor through TEMA the "Floating University" Project in the Mediterranean, Black and Baltic Seas, as well as the computer-based learning module project, in view of enhancing the continuation of these initiatives;

Financial implications to the IOC: US\$ 20,000.

Invites Member States to put forward proposals and support leading to the establishment of the "Floating University" Project in other regions.

Resolution XVIII-15

CAPACITY BUILDING IN MARINE SCIENCES, SERVICES AND OBSERVATIONS - TEMA

The Intergovernmental Oceanographic Commission,

Having considered the request of the Twenty-seventh Session of the Executive Council regarding a "Draft TEMA Strategy to respond to UNCED Agenda 21, Chapter 17, Part E",

Acknowledging with appreciation the information provided by the document "Observations and Experiences of Selected TEMA Activities During 1984-94" (Doc. IOC-XVIII/Inf.2 by Dr. S.M. Haq),

Emphasizing the importance of the IOC TEMA Programme for Capacity Building in marine science and services, as well as to stimulate national, regional and global co-operation in marine science; the latter being main components of the IOC Comprehensive Action Plan (Doc. IOC-XVIII/2 Annex 1),

Takes note of recommendations submitted by the TEMA Strategy *ad hoc* Meeting (IOC/INF-999) including the proposed "Draft TEMA Strategy in response to UNCLOS and UNCED" (Doc. IOC-XVIII/2 Annex 6);

Decides to establish a TEMA Group of Experts for Capacity Building composed of six to eight qualified experts in the field of training, education and mutual assistance, as proposed by Member States with representation from the regions, to interact with the relevant TEMA focal points of IOC Subsidiary Bodies. The Group of Experts, will perform the following tasks:

- (i) further develop a strategy for TEMA activities and a revised TEMA Action Plan for Capacity Building (to include evaluation techniques as a permanent managerial tool), for consideration during the forthcoming Session of the IOC Executive Council;
- (ii) establish closer partnerships with other relevant Capacity Building programmes such as UN-DOALOS-UNDP Train-Sea-Coast, and others in the framework of ICSPRO (the Coast and Small Islands Project of UNESCO, in particular), and the ACC Sub-Committee on Ocean and Coastal Areas;
- (iii) foster as a main mechanism for the Programme, the development of regional and sub-regional co-ordination and thematic networking;

- (iv) assist Member States of the regions in the preparation of proposals to GEF and other potential funding agencies, programmes and donors, and thereby, formulate elements of a strategy for mobilizing financial and other forms of support;
- (v) undertake a feasibility study to develop a Clearing House Reference System on training opportunities in the framework of UN Agencies of ICSPRO and ACC Sub-Committee on Ocean and Coastal Areas;

Instructs the Executive Secretary IOC to:

- (i) organize, in consultation with the Co-chairmen of the TEMA Strategy *Ad hoc* Meeting, an intersessional meeting of the TEMA Group of Experts for Capacity Building, not later than the first half of 1996, taking all necessary provisions to assure the successful accomplishment of the tasks assigned to the Group;
- (ii) assure effective co-ordination for this meeting with relevant activities of ICSPRO and ACC Sub-Committee on Ocean and Coastal Areas programmes, as well as with those of scientific advisory bodies of the Commission;
- (iii) provide proper support for implementation of the Capacity Building TEMA activities in the Secretariat of the Commission;

Invites Member States to consider a substantial increase in support of Capacity Building through the TEMA Programme, through staff secondments, and contributions to the IOC/TEMA Trust Fund.

Financial implications: US\$ 30,000.

Resolution XVIII-16

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

The Intergovernmental Oceanographic Commission,

Recalling Recommendation SC-IOCARIBE-IV.8 (Strengthening of the IOCARIBE Secretariat), approved by Resolution XVII-11 of the IOC Assembly, which called for appointing necessary staff to the Secretariat in Cartagena,

Having considered the Interim Report on IOCARIBE Evaluation (Document IOC/INF-993) provided to the Assembly to facilitate discussion of Agenda Item 13.1,

Acknowledging benefits which could derive from the IOCARIBE evaluation and the methodology developed, in order to provide Member States with appropriate information for decision-making, especially in the coming IOCARIBE Session in Barbados, December 1995,

Recognizing that a strong and efficient regional Secretariat, adequate to present and future requirements of the region, is needed for the future in order to:

- (i) implement strategies applicable to a regional comprehensive plan,
- (ii) to enhance the representativity of the Sub-Commission in the region,
- (iii) to effectively mobilize and manage funds, and
- (iv) to provide timely appropriate support for Programmes, Experts and Member States,

Invites the Director General of UNESCO and **instructs** the Executive Secretary IOC to continue supporting the evaluation until it is completed and presented to the Fifth Session of IOCARIBE, December 1995;

Notes with concern the interim situation of staffing in the regional Secretariat since the Assistant Secretary for IOCARIBE post was transferred to Paris without replacement, and the secondment of experts from France and Sweden was discontinued;

Further invites the Director General of UNESCO to implement Resolution XVII-11 of the IOC Assembly, particularly Recommendation SC-IOCARIBE-IV.8 (Strengthening of the IOCARIBE Secretariat) and provide, the post of Assistant Secretary for IOCARIBE;

Urges Member States to provide seconded or associate experts for the Regional Secretariat;

Invites IOC Member States to actively participate in the IOCARIBE evaluation at the Fifth Session of the IOCARIBE Sub-Commission, Barbados, 11-15 December 1995.

Resolution XVIII-17

IOC BLACK SEA REGIONAL PROGRAMME IN MARINE SCIENCES AND SERVICES

The Intergovernmental Oceanographic Commission,

Recalling Resolution of the 27th General Conference of UNESCO (Doc. 27 C/5 1.211 and DR 190),

Recalling also Resolutions XVI-7 "Black Sea Project" and XVII-15 "Regional Black Sea Co-operation Programme",

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 the international effort aimed at the implementation of the regional programme 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, and especially through the GEF Black Sea Environmental Programme,

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

Noting also the significance of the Convention for the Protection of the Black Sea against Pollution (Bucharest, Romania, 22 April 1992), and the Ministerial Declaration on the Protection of the Black Sea (Odessa, 7 April 1993),

Taking into account the relevant provisions of the UN Convention on the Law of the Sea,

Being aware of the efforts being undertaken by the United Nations Environment Programme within its Regional Seas Programme in response to the requests made to UNEP by the riparian states of the Black Sea, and in the framework of the Bucharest Convention and the Odessa Declaration, to set up a Regional Seas Programme for the Black Sea,

Noting further the results of the Regional Black Sea Workshop, Varna, September 1994, in the form of a regional programme, with initiation through two pilot projects in the framework of this programme;

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;

Takes note of the proposals and recommendations of the Black Sea Intergovernmental Meeting, UNESCO Headquarters, 7-9 June 1995, in which all Black Sea states participated;

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

Notes with satisfaction the establishment of the IOC Black Sea Regional Programme in Marine Sciences and Services for an initial period of four years;

Establishes an IOC Black Sea Regional Committee as the management body for the IOC Black Sea Regional Programme, with the Terms of Reference given in Annex 1 to this Resolution, together with the initial work plan;

Instructs the Executive Secretary IOC to make available the support required to facilitate the initial activities of the Regional Committee and to seek additional funding and technical support from governments and donors in order to undertake pilot projects already agreed upon and others to be further elaborated; possible initial activities and related financial implications are given in Annex 2 to this Resolution;

Further instructs the Executive Secretary IOC, in consultation with the appropriate authorities, to elaborate a Memorandum of Understanding regarding scientific co-operation and inputs to the Black Sea Environmental Programme, currently sponsored by the GEF and other donors in order to promote a coherent region-wide approach to environmental management in the spirit of UNCED Agenda 21;

Invites the Regional Committee to report on progress of the implementation of the programme at the next session of the Assembly.

Financial implications: It is estimated that to facilitate expert meetings, exchange and participation of experts in scientific activities, gradual establishment of a communications network and data bases, an annual support from IOC of a minimum of US\$50,000 will be required, to be supplemented by other UNESCO funding resources, as well as national in-kind and other resources.

Annex 1 to Resolution XVIII-17

Terms of Reference for the IOC Black Sea Regional Committee

In accordance with the IOC Manual, Section 5: Guidelines for the Structure and Responsibilities of the Subsidiary Bodies of the Commission (Doc. IOC/INF-785, 1989, page 37, in English version):

- (i) The IOC Regional Committee shall promote, develop and co-ordinate the regional joint marine sciences and services programmes, identify the requirements for resources, prepare the overview budgets and report to the Governments and the IOC Assembly; in its work it should draw as appropriate upon IOC programmes.
- (ii) The IOC Regional Committee shall plan and co-ordinate the marine sciences and services activities of the IOC Black Sea Regional Programme, taking into account the relevant provisions of the Convention for Protection of the Black Sea against Pollution, the UN Convention on the Law of the Sea, the Black Sea Fisheries Convention, and international programmes carried out by international institutions and organizations (UNESCO, UNEP, WMO, WHO, IMO, IAEA, FAO, UNDP, NATO, the World Bank, PHARE, the European Union, etc.), so as to avoid overlap and duplication of efforts and ensure co-ordination with other relevant activities.
- (iii) The IOC Regional Committee shall establish close connection with all existing relevant regional programmes, so as to avoid duplications and also help the linkage between science and management aspects.
- (iv) The IOC Regional Committee shall report on programme implementation, proposals and budget requirements to the IOC Assembly.

Annex 2 to Resolution XVIII-17

**IOC Black Sea Regional Committee -
Initial Tasks for the period 1996-1997**

- (i) Elaborate and start phased implementation of two proposed pilot projects, and possibly others within the framework of regional programmes, using proposals and specifications already provided by Black Sea Member States; and adjust implementation in accordance with available resources.
- (ii) Identify products and possible economical benefits expected to result from the pilot projects and the programme as a whole.
- (iii) Establish in a phased manner a regional communication network adequate for and adjusted to the data exchange needs.
- (iv) Prepare project proposals for donor applications, using the identified expected products and their relationship or input to the management of the Black Sea Marine Environment.
- (v) Establish dialogue and co-operation as required with other IOC programmes and on-going relevant regional programmes and projects.
- (vi) Gradually establish verified scientific data bases for applications, e.g., in relation to emergencies, coastal zone pollution, disturbances, erosion and other management-related problems.
- (vii) Gradually establish a combined modelling and observation capacity which can be used in forecasting environmental conditions in the Black Sea.
- (viii) Develop and implement TEMA components aimed at establishing modern capacity-building facilities for the successful implementation of the Regional Programme.

Resolution XVIII-18

PROGRAMME AND BUDGET 1996-1997

The Intergovernmental Oceanographic Commission,

Recalling the advice provided by IOC *ad hoc* study groups and ensuing decisions of IOC Governing Bodies, notably through IOC Resolution XVII-20, in regard to the evolution of the IOC within UNESCO and its role therein as an intergovernmental body with functional autonomy,

Having considered the Proposal on the Draft Programme and Budget 1996-97 as contained in Document IOC-XVIII/2 Annex 7,

Having taken note of IOC entry contained in paras 02364-02379 of the Draft UNESCO Programme and Budget 1996-97 (Draft 28 C/5),

Recognizing the responsibilities that devolve on the IOC, through the arrangements proposed in the Draft 28 C/5, by which UNESCO will provide its support to the IOC through a financial allocation,

Expressing its satisfaction regarding the positive reaction of the United Nations (through Resolution A/RES/49/131), to the IOC proposal that 1998 be declared the UN International Year of the Ocean,

Approves, as a basis for future planning, the IOC Draft Programme and Budget 1996-97, based upon anticipated resources emanating from the UNESCO financial allocation and from other sources;

Urges Member States to continue and increase their support to the IOC through direct and in-kind contributions;

Expresses its appreciation to the Director-General for the initiatives taken to clarify the role of the IOC within UNESCO and to create favourable conditions within which the IOC can respond properly to its mandate and its role in relation to UNCLOS and UNCED in accordance with the expressed needs of its Member States;

Submits to the 28th UNESCO General Conference the Programme Resolution contained in the Annex;

Authorizes the IOC Executive Council at its Twenty-ninth Session to approve any adjustments to the Programme and Budget that may be required in light of resources and expenditure.

Annex to Resolution IOC-XVIII-18

PROPOSED RESOLUTION

THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

The General Conference,

Recalling that, by amendment of the Statutes of the Intergovernmental Oceanographic Commission (IOC) in 1987, the 24th General Conference confirmed that the IOC "is established as a body with functional autonomy within UNESCO",

Having taken note of the report on the activities of the Intergovernmental Oceanographic Commission (IOC) during the biennium 1993-1994 and matters brought to its attention by the Eighteenth Session of the IOC Assembly,

1. **Requests** the IOC, in accordance with its statutes, to pursue the programme of work for 1996-1997, as approved by the IOC Assembly at its Eighteenth Session, and in particular:
 - (a) Objective 1. To reduce the scientific uncertainties on oceans and coastal areas related to Agenda 21;
 - (b) Objective 2. To strengthen data exchange and ocean services;
 - (c) Objective 3. To foster capacity building in developing countries for marine research and systematic ocean observations;
 - (d) Objective 4. To stimulate international and regional co-operation in marine science and systematic ocean observations;
2. **Authorizes** the Director-General to support the IOC by providing a financial allocation in the amount of \$ 6,430,100 under the regular programme, Major Programme II;
3. **Expresses** its appreciation to the Member States and organizations that have supported the IOC programmes through voluntary and in-kind contributions, including staff, and invites them to continue their support for the 1996-1997 biennium;
4. **Further requests** the IOC to make recommendations and provide technical guidance on interdisciplinary aspects of relevance to UNCED follow-up, and in regard to preparation of the 1998 United Nations International Year of the Ocean and as to the formulation and execution of the marine science aspects of the project on environment and development of coastal regions and the small islands.

ANNEX III

ADDRESSES

**A. Opening address by Professor Manuel M. Murillo,
Chairman, Intergovernmental Oceanographic Commission (IOC)**

on 13 June 1995

Mr. Director-General of UNESCO,
Mr. Secretary,
Vice-Chairmen,
Members of delegations,
Representatives of governmental organizations and of non-governmental
bodies and organizations,
Ladies and Gentlemen,

It is a great pleasure to welcome you to this Eighteenth Session of the Assembly of the Intergovernmental Oceanographic Commission.

I should like to begin by expressing my most sincere thanks for the honour conferred upon me by the distinguished delegations to the Assembly's plenary meeting when they elected me to chair the Commission for these last four years.

On this, my last opportunity to address the Assembly at its opening meeting I should like to remind you of a number of events that have had a significant impact on the Commission's work and will have considerable influence on its immediate future. Some have affected not only UNESCO but other organizations of the United Nations system and non-governmental organizations all over the world; others are internal to the Commission, the outcome of intensive analysis and consultation whose main aim, as defined by its Member States, was to strengthen IOC to enable it to carry out the tasks established in Article 2 of its Statutes and also to discharge, in an efficient and timely manner, the new responsibilities that have been entrusted to it. The Commission had to adapt itself to new circumstances and make the dynamics of change part of both its structure and functioning.

At world level, there have been two events, co-ordinated by the United Nations system, whose results have been crucial for the Commission. The first concerned the United Nations Convention on the Law of the Sea, which took ten years to see the light of day and 12 to enter into force, and the second was the United Nations Conference on Environment and Development, whose Agenda 21 contains specific references and identifies broader responsibilities for the Commission. In addition, the second International Conference on Oceanography, held in Lisbon in November 1994 on the theme 'Towards sustainable use of oceans and coastal zones', made practical recommendations that involve IOC.

The entry into force of the Convention on the Law of the Sea on 16 November 1994 marks a very important stage in the life of the Commission, as it recognizes the Commission as having special competence at international level in marine research and related activities. This Assembly has set itself the task of proposing the necessary adjustments to the functioning of the Commission and of reviewing its legal status as a standard-setting body. These are very important tasks which it must pursue.

In the framework of the United Nations Conference on Environment and Development, the Commission must make greater efforts, through concerted action by its Member States, to fulfil the responsibilities arising from Agenda 21, in particular Chapter 17 and the chapters relating to capacity-building for Member States, and particularly the developing countries, in order to attain the primary goal of promoting science for sustainable development. Similarly, there is an urgent need for concerted action by Member States to apply the provisions of the Convention on Biological

Diversity and of the Framework Convention on Climate Change, particularly with regard to ocean-atmosphere dynamics, the evaluation and prediction of changes in sea level, and ocean absorption of carbon dioxide.

We must reaffirm the responsibility and commitment of IOC Member States that makes it possible for IOC to develop its ocean science programmes in an effective manner and discharge its co-ordinating function in respect of the Global Ocean Observing System both internationally and regionally.

Defined and concerted action by Member States is essential if IOC is to shoulder the great responsibilities assigned to it in the United Nations Convention on the Law of the Sea and by UNCED and to play its role at the level of the international organizations within the framework of the Intersecretariat Committee on Scientific Programmes Relating to Oceanography and the Committee on Oceans and Coastal Areas, using existing mechanisms to foster scientific co-ordination and international co-operation.

Ladies and Gentlemen, the second International Conference on Oceanography adopted a Declaration based (i) on the principles established by the first International Conference, held in Copenhagen, particularly with regard to international co-operation and the co-ordination of ocean research; (ii) on those of the United Nations Convention on the Law of the Sea, especially regarding the establishment of a new legal framework for seas and oceans; (iii) on the precepts established by the United Nations Conference on Environmental and Development, particularly the interrelations of the ocean and the unitary nature of the marine environment and its status as an essential component for sustaining life on earth; and (4) on the principles that inspired Resolution XII-10 of this Assembly which recognized research on coastal systems to be an inseparable component of oceanographic research. In this Declaration it specifically requests the Chairman of the Oceanographic Commission to emphasize, in reporting to this session of the Assembly, the need for Member States to commit themselves to the strengthening and further development of IOC to ensure that a concerted intergovernmental approach is adopted to research on ocean and coastal zones, ocean services, systematic monitoring and the relevant capacity-building in order to attain the goal of sustainable development of the oceans and coastal zones.

In order to prepare the Commission to meet these new demands, of which the Member States of the Commission are aware as actors in other international fora, this Assembly has systematically adopted measures to adapt its structure and functioning. Various study groups, such as FUROF, FURES and, more recently, DOSS, working strictly in accordance with the terms of reference established by this Assembly in each case, have produced substantive reports with practical proposals to enable the Commission to meet the new demands made of it. These proposals, whose broad scope covers the functions and structure of the Commission and the working procedures of the Assembly, the Executive Council, the subsidiary organs, the Chairman, Vice-Chairmen and the Secretariat, have been subjected to detailed analysis in wide-ranging discussions by this Assembly which have given rise to important resolutions, the most recent of which was Resolution XVII-20. The process of analysis is far from having been completed, however, and we must therefore adopt measures at this session to ensure the continuity of the process, for purposes of clarification in some cases and further development in others.

My participation in this process alongside the former Chairman, Professor Ulf Lie, the Vice-Chairmen, the Secretary, the members of the ad hoc groups and other distinguished delegates during the period which saw the holding of UNCED, the entry into force of UNCLOS and the second International Conference on Oceanography, enabled me to see that when there is unity of purpose, determination and goodwill it is possible to move forward quickly towards the attainment of the Organization's goals, which we all share.

In connection with this process, I consider it important to remember that improvements to the structure and functioning of the Commission have the sole purpose of making it easier for IOC to carry out its work. If management is to be successful, it is essential, in addition to the efforts that the Organization has already made to modernize the Commission, that the effective commitment of its Member States express itself in concrete terms. That commitment involves both working in concert within the Commission's governing bodies and in follow-up action on its recommendations, and developing a clear awareness of the Commission's limits in carrying out the programmes entrusted to it. The adoption of a strategy is fundamental in order to define the scope of action and distinguish between what is feasible and what is not. But that is not all. It is also necessary for Member States to

contribute effectively, in a framework of equity and according to their possibilities, to the strengthening of the Commission.

The modernization of the Commission and the adoption of a comprehensive strategy are fundamental elements in the preparation of a balanced programme enabling the Commission to pursue its activities in marine science, ocean services and training for the benefit of its Member States and all humankind.

In conclusion I should like to express my heartfelt thanks to the Director-General of UNESCO, Professor Federico Mayor, whose lofty vision and unfailing commitment have provided crucial support for the sound progress made by the Commission towards the accomplishment of its mission.

Mr. Director-General, I am honoured to have been able to work with you for the further development of IOC within the framework of UNESCO.

Thank you.

**B. Opening Address by Mr. Federico Mayor,
Director-General of the United Nations Educational,
Scientific and Cultural Organization (UNESCO)**

on 13 June 1995

Mr. Chairperson, Delegates, Ladies and Gentlemen,

I am very pleased to welcome you to this session of the IOC Assembly, and I hope you will enjoy both the session and your stay in Paris. At the same time, it is my sad duty to announce the death of the Deputy Secretary of IOC, Dr. Klaus Voigt, who served the Organization with dedication and loyalty for many years.

Your Agenda for the session contains a number of important issues, which I would like to reflect upon here.

The first item I should like to mention concerns the Status and Evolution of the IOC. This covers matters relating to developments within UNESCO, follow-up to the IOC ad hoc study group on development, organization, structure and status (DOSS) of the IOC, the second international Conference on Oceanography, and the Medium-Term Strategy for 1996-2001.

Let me deal first with the draft Medium Term Strategy and, in particular, the implications of the proposals it makes for the restructuring of the IOC, with particular reference to the "grant in aid" system giving increased administrative and financial autonomy to the Commission. Important measures have already been introduced on my initiative from 1 January 1995: on an experimental basis, the IOC functions - as is the case with other institutes, centres and programmes - on the basis of "grant in aid" procedures; the level of ADG has been given to the Secretary, with the new designation of "Executive Secretary"; and staff and subventions have been reinforced. I sincerely hope that the General Conference will approve my proposals, which were debated in some depth by the Executive Board. The proposal for new arrangements for the IOC is based on Resolution 20, which you adopted in 1993 and which was supported by the General Conference at its twenty-seventh session in 1993. A first draft of the proposal was provided to and supported by your Executive Council in July 1994. Thus I am now, together with the IOC Secretariat, following up this matter.

The reaction of UNESCO's Executive Board was mixed. Support was expressed by some, whereas others were cautious or opposed. I have taken careful note of all the observations in order to provide the next session with all the requested clarifications, and I hope that the Board will endorse my proposals to the General Conference. However it is now very important to improve communication and dialogue at the national level. If you wish for the developments concerning IOC to take place, it is of utmost importance that you take the proper action at your national level prior to the General Conference, where the matter will come up for decision.

The main issues raised by the Executive Board include: the maintenance of a strong link between IOC and UNESCO; how to strengthen the Commission and what administrative and financial arrangements can be made to ensure the link with UNESCO and the response of IOC to the challenges following UNCED and ratification of the Law of the Sea. These questions must be answered, and the experience drawn from this experimental period must be presented to the next Executive Board. I think that it will be helpful to contact your UNESCO National Commissions and Permanent Delegations and explain the reasons for these new arrangements so as to provide them in advance with all the necessary information.

Another important matter that concerns the IOC is the internal structure and distribution of work. At the opening of the Second International Conference on Oceanography in Lisbon, November 1994, I referred to the proposal to establish an interdisciplinary project on coastal zones and small islands as an experiment for the next Medium-Term period. This proposal has been developed mainly on the basis of a consultation of the Chairpersons of IOC, IHP, MAB and IGCP, which took place immediately prior to the twenty-seventh General Conference in 1993. This consultation agreed upon a joint statement which identified a series of subject areas where co-operation would increase the output and enhance the impact of the work. This is exactly what we are trying to achieve through the new project. Following internal consultations, it has been agreed that this project shall be directed by the ADG for Science in co-operation with the ADG for Social and Human Sciences, supported by a management committee of the relevant directors, namely from IOC, IHP, MAB, IGCP and MOST. This new project in coastal zones and small islands has been welcomed by all Member States for its focus on interdisciplinary action involving all those concerned with UNESCO's fields of competence.

You will also be interested to know that, to strengthen the IOC, I have proposed to increase its allocation by an amount of eight hundred thousand dollars for the next biennium.

Other important items on your Agenda are : IOC and UNCLOS, Capacity Building - TEMA and Co-operation. This raises the question of how we can adequately cover the ocean in such a holistic way. I feel that we cannot achieve the desired results without increased resources. This is why it is essential for your Assembly to put into action a plan for mobilizing extrabudgetary projects and resources, and to increase the volume of voluntary contributions from IOC Members. The GEF should now turn its attention to the oceans.

Since your last Session, I have personally attended other activities of the IOC, and I have seen the very active interagency co-operation in joint programming involving UNEP, IMO, IAEA, the UN, and non-governmental bodies such as ICSU and IUCN, and their programmes. I have also seen the active participation of all regions in the IOC. The Lisbon Conference was a truly global conference, and certainly demonstrated the development of the IOC over the last decade since the Copenhagen Conference. The issues are now pressing; your tasks are important. I am confident, because I know you have the ability to deal with them.

I wish you a most successful Assembly.

**C. Statement by the Ambassador of South Africa to UNESCO
on the Reinstatement of South Africa in the Intergovernmental Oceanographic Commission**

on 20 June 1995

Mr. Chairman,
Mr. Executive Secretary,
Delegates of the IOC,
Ladies and Gentlemen,

Some eighteen years ago (October 1977), South Africa's membership of the Intergovernmental Oceanographic Commission was suspended because of apartheid policies. During the past few years, my country has undergone a miraculous transformation, and following the first democratic elections which were held in April 1994, and which resulted in the establishment of a Government of National Unity and the creation of a fair and just society, my country can once again resume its rightful place among the nations of the world. It is thus timely and fitting that South Africa's membership of IOC be reinstated.

South Africa lies at the cross-roads between three great oceans, the Atlantic, the Indian and the Southern. As such, we are an important maritime state and can and must play a major regional oceanographic role as an equal, but not dominant partner with our maritime neighbours. We are strongly encouraged about recent developments in both the South Atlantic and South Indian Oceans which are likely to lead to greater scientific co-operation in ocean matters between southern African countries, and indeed, also between southern Africa and all members of IOC. With our oceanographic expertise and infrastructure, I believe that we can be a catalyst which will result in the wise management and use of the oceans and its resources, not only in the region, but elsewhere also. The prospects for co-operation in oceanography have never been better for the region.

However, it is not only the region which will benefit from our resumed membership of IOC. It will be the world as a whole. I say this because South Africa is located at the choke point in the global climate conveyor belt which is associated with the transport of heat and salt from the Indian Ocean around southern Africa, and then equatorwards in the Southern Atlantic. What happens in the oceans south of Africa thus impacts on the climate of this planet.

South Africa is oceanographically thus not only regionally significant, but is globally relevant. It is a privilege for us once again to be part of the global system and the IOC.

**D. Introduction to the Intersessional Report by
Dr. Gunnar Kullenberg, Executive Secretary IOC**

on 13 June 1995

Mr. Chairman, Distinguished Delegates, Ladies and Gentlemen,

I am happy to introduce the Annual Report on the activities of the IOC during 1994, and I would like to make the following reflections: The main content of the Annual Report is divided into three general parts: A. Implementation of the Resolutions; B. Programme activities; and C. Co-operation and development. This structure of the report follows the wishes of the Assembly and Executive Council. Section A endeavours to briefly summarize the state of implementation of the last Assembly and Executive Council resolutions. These summaries should be seen in the context of the Resolutions and may be used to obtain an overall picture of how we are able to implement them, and how the actions relate to your decisions. They can lead to reflections on the reality of some of the Resolutions, for instance, in relation to available resources. The Resolutions always instruct or urge Member States to do something, never the contrary, and it is never decided that a project or programme will be ended without establishing a new one. Occasionally, ad hoc groups are created without fixing a limited lifetime, e.g., coastal zone work and follow up to UNCLOS. Some Resolutions involve cooperation with other bodies, e.g., EC-XXVII.4 on our cooperation with IAEA and UNEP, and I would like to inform you that an interagency review of this cooperation was performed in April 1995. This review resulted in a proposal to strengthen the participation of the IOC in this cooperation, and the matter will

be discussed further under agenda item 10.6 on GIPME. The resolutions of the last Assembly, not referred to here, can be regarded as implemented. In summary, of the 27 adopted Resolutions, 17 have been fully implemented, and 10 partially. The implementation of the GOOS resolutions requires further effort; likewise for IODE, Tsunami, and OSLR.

Section B presents a summary of the programme activities. The programme implementation follows the Programme and Budget framework for 1994 and 1995 adopted by the Assembly in 1993, pursuing the related Resolution XVII-19, and in particular, the instruction to the Secretary to "implement progressively the Programme taking into account decisions of the Assembly and Executive Council, priority areas related to studies of ocean dynamics and climate, 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 infra structure development". The implementation also follows the related decision of the 27th General conference of UNESCO.

The instructions of the Twenty-seventh Session of the Executive Council have also been followed so as to implement the programme in the light of available resources, guidance provided by the Executive Council and in consultation with the Officers of IOC. The funds reduced from IOC in 1994 have been largely restored for programme implementation in 1994. The Officers' meeting in February 1995, reviewed the progress, and provided additional advice for the 1995 implementation.

Overall, the programme follows the line of the follow-up to UNCED. During the 1994 interval, we have carried out activities in five ocean science programmes of the IOC, and additionally, in the other components of the UNESCO overall programme II.2.4. There has been a certain focus on the climate, living resources and the health of the ocean, but ocean mapping has also been quite active. You may note some difference between these actions and those of the other programme components mentioned in 1.6.

The next section deals with the more applied parts of the IOC programme. The Ocean Services are presented separately from GOOS since they go beyond pure GOOS development and have been in existence since the beginning of IOC. Many activities have been carried out in the IODE programme, including the GODAR project which has contributed to the production of the World Ocean Atlas 1994 by NOAA in cooperation with IOC. The diskettes for Ocean PC and GTSP have been produced and are being demonstrated outside in the hall. These are results of our actions. The MIM programme has also been further consolidated, and an increased regional activity level is evident. The cooperation of IODE with other bodies, ICES, CEC-MAST, ICSU and, of course, WMO is also noteworthy. The data exchange issue is high on the agenda of the on-going WMO Congress, and we will hear about the results during the appropriate agenda item. ITSU and remote sensing activities, which are both increasing in importance, are presented individually.

The GOOS design has proceeded along the lines outlined by I-GOOS. Its scientific basis is related to developments in the science programmes, in particular WCRP, GIPME, and coastal zones, and close linkages are maintained with the scientific community through J-GOOS. This is a very essential element of the GOOS development. The results of I-GOOS II will present where we stand as regards GOOS development. Several observing systems exist and are operational, including: GLOSS, IGOSS, and DBCP. These programmes are producing good results and should be gradually strengthened. The diskette containing all sea-level and GLOSS data is a most important result for the issue of sea-level change. The development of GOOS shows the increasing importance of the Ocean Services part of IOC programmes.

The following TEMA section presents actions which are specifically within TEMA, and do not belong to any other programme. TEMA is basically a part of all programme activities, in particular, the very extensive regional activities. Thus, it is not correct to obtain information on TEMA only through that section. In the subsequent section, the extensive regional actions are presented with emphasis on the sub-commissions for natural reasons, and on the Western Indian Ocean through the support to IOCINCWIO provided by SAREC of Sweden. In all, in Section 5, the implementation in 12 regions is presented. This spans a large range, and the distribution of resources is a basic question.

The last section of the report (Section C) summarizes IOC co-operation with other organizations, and the development of IOC. You can see that co-operation is quite extensive, with a growing trend. It shows the role and existence of IOC in the work of other bodies, and related recommendations. I wish to point out the role of the IOC Secretariat in relation to the ACC Sub-Committee on Oceans and Coastal Areas, and the relation to ICSPRO. The activities related to follow-up to UNCED are of course included in almost all programme actions. In Section 7, only

specific actions are presented. I would like to emphasize the importance of IOC's association with the Framework Convention on Climate Change, the Convention on Biological Diversity, and, of course, the United Nations Convention on the Law of the Sea. The related actions are summarized in Section 8. The Lisbon Conference is presented in Section 9, and the Declaration and Shared Vision coming out of the Conference are given in the Annex I to the report.

Is it now possible to relate all this to the Programme of Work and Budget adopted at the last Assembly in 1993. Yes, I consider this to be possible, in combination with the report on the financial state of IOC, Document IOC-XVIII/7. If you look at Document IOC-XVII/8, Annex 4: Proposed Programme and Budget 1994-1995, you will find as follows:

Programme Action 1, addressing uncertainties and follow up to UNCED, is covered by all the major programmes of IOC; results of relevance to the climate issue have been obtained and presented to INC-FCCC and IPCC; vulnerable areas have been identified, assessments have been made, e.g., in relation to coastal erosion, sea-level variations, marine pollution, inputs from land, effects of marine pollution; evaluations of living resources; manuals and guidelines have been prepared and introduced in seminars, workshops; please refer to the list of publications in the Annual Report 1994. Certain weaknesses are seen in relation to assessments of living and non-living resources; but is this really our job?

Programme Action 2 on Capacity Building is likewise injected in practically all programme actions, and focuses on the regional levels using the regional subsidiary bodies as the major mechanism. These certainly endeavour to address indigenous capacity building.

Programme Action 3 focuses on cooperation and regional developments and covers the related intergovernmental meetings, interactions with other bodies and programmes, voluntary cooperation and technology transfer. These actions are associated with all programmes and the regional subsidiary bodies. In the period 1994-95, we have so far had six intergovernmental meetings or conferences, several Group of Experts meetings, and several symposia and public awareness creating activities.

Can we relate the IOC programme actions to major issues facing society? Yes, you can see that throughout the report, even if it is not directly stated. However, the science and services programmes address major issues: e.g., climate; impacts of changes; food production; health of the ocean; coastal zone protection; data and information sharing and use.

Therefore, what are the problems and critique? I would suggest that we have two basic problems, which also reflect critique and weaknesses of the Secretariat:

1. The results of our actions are not all getting out. They are not noted or referred to sufficiently.
2. We are not focused enough. We are trying to do too much with too few resources. We are therefore not able to follow up to the extent we should.

Hence, what are the results of all this work? This is not so easy to say! In the science programmes, the results of TOGA are well known as a WCRP activity; the bathymetric charts are visible results; the establishment of the IOC-Harmful Algal Bloom Centre in Copenhagen, with the support of DANIDA, is also a visible result; the manuals on methods are also useful results; data disks, the Ocean Atlas, GTSP, Ocean PC, etc., are visible and useful results. But how do we see results of training and capacity building, and activities in relation to cooperation, which are often time consuming and difficult. One result is the joint WCP proposal, the Climate Agenda, and the ACC Sub-Committee draft report for the CSD. Where are the real results of all the GOOS actions? plans and papers, but where is the implementation? How many results do we obtain in the regions? The IOCARIBE evaluation will give an indication, but how do we measure it?

I think we should reflect on this during the coming 10-15 days, and, if possible, try to concentrate or focus our programme. We must do this well and carry it through fully. My feeling is that this is not now the case. There must be a certain amount of reflection, followed by concentration. Please note, I am not using the word priority, but concentration, focus, and consolidation. We are spread too thin in the IOC Secretariat, and I am personally not able to provide all the guidance I should. I need your help to achieve this, and you must live up to that responsibility. This point should be made clear and stated by me, since I am the one who has the best overview and the awareness that we

are not able to carry out all these matters sufficiently and with satisfactory results. We cannot produce ocean science, services, GOOS, TEMA, regional developments and act as a "madchen fur alles" at the same time. Please, let us concentrate, and let that be the leit-motif for further specification of the Programme for 1996-1997.

As concerns the financial status: Regular Programme Funds implemented from IOC, Paris, for IOC programmes 1994-95 after reductions and decentralization are so far 1,057,730 USD, of which about 80% has been used as of end of May 1995; resources received to date (end May) for the Trust Fund 1994-1995, are approximately 3,300,000 USD, of which about 70% has been used.

Finally, Mr Chairman, a few words about the draft biennial report, document IOC-XVIII/6. I did not include a policy makers summary in the Annual report 94 since I consider the Biennial report to be essentially that, and more relevant as such since it covers 1993-94. It will also be provided to the UNESCO General Conference.

The report is a brief policy makers' summary, where I have tried to relate the programme actions to the major issues. This essentially follows the UNCED issue-oriented and integrated approach, and responds to the follow-up to UNCED. The climate issue is prominent, and is strongly related to GOOS and GCOS developments. The state of the marine environment could receive more attention, but the results there in the form of the international mussel watch, the open ocean baseline study, and the methodological developments are undeniable.

An overall summary of the TEMA-related activities is given, showing that, in quantity, these are quite significant, with about 50 training courses, seminars, workshops, involving about 1000 participants during 1993-1994; many educational publications, in several languages; some technical cooperation or voluntary cooperation activities, etc. Finally, a brief appraisal is made where some weaknesses are also pointed out.

E. Response by the Executive Secretary IOC to the debate under Item 4

The debate brought out that sustainable management of ocean resources may be considered as the overall goal: this requires scientific input and scientifically valid data and information, which is the task of the IOC to provide.

How do we achieve this? The results of our efforts must reach the right sectors of society. Norway's question about the acceptance of the role of the ocean in the climate system suggests that we do not achieve this goal. How then can we improve this matter? By raising the level of recognition of the IOC so that we can talk to the relevant levels and sectors of society, and also do the same in UNESCO. The debate in the 146th Executive Board asked why the studies and results of the IOC are not known, and why have the reports not been delivered to the Executive Board?

The answer is, because we have no mechanisms to talk to the Executive Board. Regrettably, the Members of the Executive Board are not here now. It is the same with respect to our ability to communicate our message to decision and policy makers. If we cannot talk to them, then how can we deliver our message?

This is one key issue in this debate. We all realize that the oceans are important, for instance, in the climate system, and that sustainable management of ocean resources is probably very essential, but when IOC is not accepted as a grown-up, responsible, or accountable body, then no one outside our circle will listen.

The IOC is the only mechanism dealing in a holistic way with the oceans. You will then say, they will listen to us if we present the message in the right way. Yes, this is to some extent true, and it is what is gradually happening. However, the impact is much larger when we are regarded as grown-up and responsible.

I hope you understand my allegory. The IOC must be accepted as an accountable, responsible, reliable and operational partner who can deliver, if we are to have the impact and carry the weight which is required to achieve our goal. Otherwise, we will not be trusted. This is the correlation to being taken seriously.

How does this relate to the questions raised about the financial allocation and our ability to respond to UNCLOS and UNCED? The financial allocation gives the IOC an identity in UNESCO which it does not now have. In comparison to the national administrations, I think one can say that it is the same as being given a budget line. We are made accountable, and we have an identity. We are made responsible, as part of the whole organization, for planning, programming, implementation, reporting and accounting. Fine, but so what? Why should that help? Would

that improve our actions and our situation? Yes, it would. Then our partners would know our size; they could establish their contribution and we could calculate the required contributions of Non Member States of UNESCO.

We could also talk definitely with others and they would understand our real size. As an example, I wish to refer to discussions with Swedish SIDA a few years ago about a sizeable contribution from SIDA towards the support of the overall WESTPAC programme. SIDA was interested and the negotiations were far advanced when a precision of our budgetary situation was required. When this precision was given, SIDA broke off the discussions. The support intended for the WESTPAC programme implementation was given instead to the ADB.

Yes, a financial allocation from UNESCO would solve the problem of identity. We would become a financial entity, which is exactly what partners are looking for. Now, we are not, we are part of a sector in UNESCO. How would a financial allocation improve our performance? First, of all it would make it possible for IOC to have an increased dialogue with the UNESCO governing bodies, and the UNESCO in-house senior management. The Executive Board, the General Conference, and the National Commissions will see much more of IOC since we have to represent ourselves, and we will have to defend our existence. This is why such a step would tie IOC much closer to UNESCO than is now the case. IOC would cease to be anonymous and become an entity, and the support of UNESCO to IOC would be a concern of the General Conference. Now, we are hidden in the Science Sector. We are at the same time protected in the Sector, and we can say to our partners that we cannot deliver, e.g., because of cash flow problems in UNESCO. This would not be possible if we were given a financial allocation 'grant-in-aid' relationship. Then, it will be up to the Assembly to adopt a realistic programme which could be delivered, and matched with the available resources. One budget could be decided upon by the Assembly, but with separate identified sources of funding and separate management and accounting for the UNESCO allocation and the extrabudgetary funds.

How would that increase our ability to respond to UNCED and UNCLOS? The Assembly will know what it has to play with, and can also try to obtain more resources directly through the General Conference of UNESCO since we will have a budget line. This cannot be done under the present conditions. We can also mobilize more support from donors and Member States since we will be more accountable and can operate over much smaller time scales and can ensure that funding of a project can occur through our channels without delays. We would also become more credible in the Scientific Community.

Why should UNESCO continue to fund IOC then? Because the IOC operation will give UNESCO more visibility; UNESCO will occupy a priority area which is not yet occupied in a reasonably reliable fashion. The IOC is visible in UNCLOS and in the follow-up to UNCED, and UNESCO will draw increased attention from the work of the IOC. Hence, UNESCO support should not decrease. The staffing of the IOC would be part of the financial allocation and the Assembly could control it.

Who would control IOC? The Assembly, Executive Council of IOC and the Executive Board and General Conference - since the General Conference would vote the allocation on the basis of the programme and budget proposed by the Assembly; the running control would mainly be the IOC Executive Council and the UNESCO Executive Board since the IOC would have to report/and would like to maintain reporting to the Executive Board of UNESCO. The advantages are obvious - in this way we can reach the wide sectors of policy and decision makers.

Then, it has been said that the IOC would leave UNESCO? How could that happen? Where is the logic in such a statement? The IOC legal foundation is the UNESCO General Conference decisions or resolutions. That, as far as I can see, is the only legal authority we have for our existence. So, it would take a decision of the General Conference to move IOC out of UNESCO. This is not likely to happen if the General Conference endorses the IOC programme and votes support to the IOC. On the contrary! However, alternatively, Member States could of course decide that the IOC is not an adequate mechanism for what needs to be done, and could agree to shift the tasks of the IOC somewhere else under another umbrella. This is much less likely to happen when Member States are actively involved in deciding the programme and budget of the IOC and the size of the financial support and the distribution of that support, than if Member States are not so much involved. We can also say that the identification of the UNESCO contribution as an allocation will also identify fully what contribution should be expected from other partners and cooperation bodies, and other Member States. Obviously Member States are going to be much more involved under a grant-in-aid, or financial allocation relationship. The participation of UNESCO Governing Bodies will also be strengthened, and they will have to understand more what IOC is and what the results of the work of the IOC are worth. This will help spread the input across sectors, and thus address one of the first key questions, that is how to

increase the dialogue to policy and decision makers. The isolation of IOC will be broken, which is absolutely essential for our success.

In short, we may achieve a sympiosis between IOC and UNESCO! It should be emphasized that the intergovernmental governing structure of the IOC is modelled after, and identical to, that of UNESCO, with an Assembly, given governing responsibilities, and an Executive Council which acts as the monitoring arm of the Assembly, and elected officers. We have no formal bureau, but the officers meet intersessionally and have defined areas of responsibility. In addition, we have intergovernmental regional subsidiary bodies based on committed national institutions, covering major coastal and ocean regions, which propose their priorities and programmes, and whose officers are used regularly in their region for the guidance of programme implementation and awareness creation. It seems to me that this structure of governance and monitoring of the programme and budget implementation and development will ensure a global participation, prevent any club-type or biased influence, and ensure transparency.

The truly global participation in the debate under item 4, with considered government statements surely also demonstrates this situation. Several Member States emphasized that they are formulating national marine sciences and science policies. This is of very great importance. It will identify capacity requirements and will help IOC to fulfill its task at the international level.

**F. Statement by the First Vice-chairman, IOC
on Agenda Items 7 and 14
"Programme and Budget"**

Mr. Chairman,

It is with mixed feelings that I introduce the discussion on Programme and Budget at this Assembly. On the one hand I realize this agenda item is a critical element of all the matters before the Assembly. The understanding of priorities of Member States and the resources available to deal with our programmes are central to the decisions we must make. On the other hand, I am also aware of the difficulty of the task and the limited ability of Member States to influence the resources and direction of our programme during the few days available to us at the Assembly. I say this, Mr. Chairman, not because of any lack of will on the part of delegations to address Programme and Budget issues but because the setting of priorities for our programme is extremely arduous and resources become more scarce every year.

Mr Chairman, what I can and will suggest for this Assembly is to accept two realistic objectives that I know can be met, that will improve our understanding of, and our capability to handle, these complicated matters.

Mr. Chairman, I would like to first outline some of the overall problems to be addressed in the Programme and Budget discussions and then to give an indication of those areas in which I feel progress can be made at this Assembly and those that may have to wait for later consideration.

To begin with a general observation of the Commission's programme: There can be no doubt that the ocean plays a critical role in the cultural, social, and economic aspects of life on our planet. The protection of the marine environment and the sustainable development of ocean resources need a global understanding and information base that can only be achieved through the concerted action of all countries. The IOC is the central intergovernmental organization in the UN system dealing with ocean science and services and its contribution is fundamental to the resolution of global and regional ocean issues. It has often been said that if the Commission did not exist, a similar organization would need to be created. In his welcoming address the Director-General stated that the oceans are one of the key issues in our common future and stressed the multi-disciplinary, multi-agency and multi-regional nature of the problems we face. Coordination of the Commission programmes with other sectors within UNESCO, and with other UN and international organizations having ocean interests, is a factor to be considered when planning and implementing our programme.

The tasks and responsibilities facing the Commission are serious. The tools we have at our disposal are presently inadequate and the resources insufficient. I can only reiterate what I said at the Executive Council a year ago and what has been a central theme in the statement of First Vice-Chairman for many Assemblies and Executive Councils. When the resources are inadequate to meet all the programme requirements, there are only two solutions.

More resources have to be found, or the programme must be reduced to fit the availability of funds. In fact, these two solutions are not mutually exclusive. It is obvious one can increase the focus and efficiency of our programme delivery at the same time as new sources of funding are being pursued.

We have addressed the issue of priorities many times before in our debates. As one delegate said in his opening address, all the programmes of the Commission are important. Priorities will change from region to region and from Member State to Member State. Acting as an Assembly we can make choices, and indeed we must make choices, but we also have to recognize the varied requirements of individual regions and countries.

I will focus my remarks first on the budget and then on the programme. For the budget I will consider three issues. The first is the size of the budget, the second is the dependability of budgetary resources and the third is the presentation of the budgetary information.

The Commission receives regular funds from the UNESCO budget that are subject to the fluctuations and decisions of the UNESCO General Conference and to the administration of the UNESCO financial system. The Commission also has its own Trust Fund where administration is the direct responsibility of the Executive Secretary, but whose resources are dependent on the individual responsiveness of Member States and subject to their direction and policies.

A third source of funding is from those external extra-budgetary resources that would arise as a result of interagency cooperative agreements or from arrangements with another international or intergovernmental organization.

The Executive Secretary is therefore faced with a budget whose size is influenced strongly by external policies and can fluctuate significantly at any time.

This brings me to the second point, that of dependability. A manager knows that stability of resources is an important element in planning and implementing a programme to obtain the desired results. In the case of the Commission, whose programmes are made up of the concerted national efforts of Member States, the situation is compounded. The funds given to the IOC are mainly used for facilitation and coordination. The actual cost of the programmes being implemented is the sum of the contributions of Member States and will be an order of magnitude or more greater because of the leverage exerted by the global and regional programmes on national budgets. This point was made by my predecessor, Dr. John Knauss, who as First Vice-chairman at the last Assembly, pointed out the importance of having stable funding at the central coordinating level of the Commission, if we were to expect maximum response in obtaining the needed national programme contributions.

Finally, in terms of resources, one of the consequences of the existing structure, is in the difficulty in presenting budgetary information to Member States, in a clear, understandable and useful fashion. The system itself has generated a level of complexity that is difficult to overcome. I can sympathize with delegations who feel bewildered with the many types of funding resources, the statements of permanent staffing versus associated experts, consultants, seconded personnel. Who carries salary and what costs are borne by the IOC? What programmes can or can't be carried out because of this shortfall or that extra contribution? One of the objectives of DOSS, in the case for increased functional autonomy for the Commission, was to introduce some discipline into the financial structure and to allow the Executive Secretary to represent an understandable and visible organization. Dr. Kullenberg has already fully and eloquently explained the benefits to the Commission in this regard. The Chairman and Vice-Chairmen have been working together with the Executive Secretary to address such problems. In their meeting earlier this year, the IOC Officers fully recognized that an increase in autonomy for the Commission must go hand in hand with increased fiscal and administrative responsibility. In this regard the Officers strongly supported the establishment of a follow-on inter-sessional team with Terms of Reference proposed in Doc IOC-XVIII/2 Annex 8. For example, studies to analyse the need for regular evaluations of the IOC programmes, structures, and procedures, to advise on changes in financial auditing and reporting that may be necessary to ensure continuing fiscal responsibility and to similarly advise on staffing and personnel administration.

Moving to the programme, the Executive Secretary has made reference in his report, that the Assembly will need to address a more focussed programme and concentration of the Commission's efforts. He also suggested some options that should be considered to increase the effectiveness and efficiency of our work. For example, where applicable, programmes and resolutions should have completion dates, the so-called sunset clause. The DOSS report

covered a related recommendation that a periodic examination of the Commission's subsidiary bodies should be carried out so that we can terminate those whose programmes have been completed and direct funds to new activities. The Executive Secretary also suggested that programmes could be scheduled so that more urgent issues can be dealt with at once and realistic objectives met. This scheduling could be laid out in an action plan so that it is clear when we are able to undertake new tasks and the effect of resource changes on completion dates for results. He also made reference to the need for more effective communication between the Commission's central policies and the regional programmes.

Mr. Chairman, preparing the introduction to the Assembly discussion on Programme and Budget is unfortunately the easiest part of the responsibility of the First Vice-Chairman. The harder part is to come, namely how can we take those decisions and make progress, during the Assembly, to improve our effectiveness and efficiency.

If the Assembly sets up a sessional *ad hoc* working group to consider the Programme and Budget, I suggest that this group concentrate on two items only. The first is to review the documents, presenting the information on the budget, and to make recommendations, if considered necessary, on how this can be clarified to serve our needs better. The second is to look at the process of focussing our programme on the most urgent issues and how Member States can more easily contribute to, and assist with, this process. Of course, Mr. Chairman, this suggestion is subject to the acceptance of the Assembly and to other related matters to be specifically addressed by the group such as working with the Resolutions Committee to ensure financial accounting of Assembly decisions.

**G. Statements by the Delegations of Argentina and Brazil
on Agenda Item 9**

(i) Delegation of Argentina

Mr Chairman,

The Delegation of Argentina wishes to congratulate the IOC Secretariat, and more particularly Dr. Latouche, for the information provided on the scientific part of Document IOC/INF-1007, presented in a very serious and detailed way. On the other hand, we regret that we are unable to say the same regarding the legal aspect of this document.

In this regard, Argentina apologizes to the other Delegations attending the Session for having altered the serenity of a scientific discussion, undoubtedly interesting, with legal questions which, together with policy matters, should be alien to the major part of the work of this Commission. Nevertheless, several questions arise from the legal basis of the above mentioned Document IOC/INF-1007, for example:

a) It would be interesting to know whether the IOC Secretariat explained to the experts who participated in the meeting referred to in Document IOC/INF-1007, that Document IOC/EC-XXVII/15 had been seriously questioned during the last Session of the Executive Council, to the extent that it was decided to establish an intersessional group to study this matter in depth. This is very important; therefore, it would be regrettable that the limited financial resources of the Commission be used to carry out study and evaluation activities, which Member States, also members of the Law of the Sea Convention, could consider *a posteriori* not to be within the IOC's sphere of competence.

b) It would also be advisable that a copy of Dr. Yankov's presentation to the meeting, which is described in Document IOC/INF-1007, be distributed, since some of his remarks do not seem to have been taken into account. For example, Item 3.2, page 2; it is asserted - and I am quoting in English since there has been no other language version of this document - that Dr. Yankov "*emphasized that the Commission [regarding limits of the continental shelf] is not an arbitration mechanism and its recommendation is advisory in nature but will become final and legally binding if a country accepts the recommendation*". Strictly speaking, the IOC resolutions are never mandatory; according to Article 67, para. 8 of the Convention, only the limits defined by a State taking as a basis such recommendations, are final and compulsory; this is not the same.

c) Third, Item 3.3, page 2; and Item 4.5.3, page 6 of the referred document: a report requested by UN-DOALOS to IOC is mentioned, on scientific and technical matters regarding the limit of the outer limit of the continental shelf. It would undoubtedly be more beneficial to know the legal basis and scope of the UN-DOALOS request, with a view to discussing them during this Assembly, when the corresponding item of the agenda is dealt with.

d) Fourth, Item 4.1, page 3 of the document refers to the delimitation of the "*foot of the continental shelf*". Furthermore, in Document IOC/INF-1007 reference is made to "*precise delimitation*" of this foot. However, it is necessary that the present Assembly discuss whether the Law of the Sea Convention is really giving authority to IOC to decide about this "*precise delimitation*".

e) Finally, in Item 8.3, page 9 - still referring to Document IOC/INF-1007 - it is stated that Member States which claim a continental shelf to be over 200 nautical miles, should do so within ten years from their ratification of the Law of the Sea Convention. Even without considering whether the deadline taken into consideration should be the date of ratification by each State, or the date when the Convention entered into force - and we shall refer to the latter when speaking about discussions on the corresponding item - this affirmation, again, is inaccurate for the following reason: according to Item 4 of Annex II, of the Law of the Sea Convention, the correct way for a coastal state which desires to establish the outer limit of its continental shelf beyond 200 nautical miles, is to submit to Commission on the Limits of the Continental Shelf (CLCS) - in the defined deadline - the characteristics of this limit together with the scientific and technical supporting data.

Mr. Chairman,

Argentina wishes that the above-mentioned remarks be recorded in the report of the Assembly, taking into account that this question will be discussed in due time by this Assembly. The legal basis of the competence of IOC regarding the delimitation of the continental shelf may not be pre-defined by Document IOC/INF-1007. This has to be carefully and thoroughly discussed in the light of Item 3, para. 2, Annex II of Law of the Sea Convention, according to which *"the Commission [speaking of the limits of continental shelf] will be allowed to co-operate, as far as it is considered useful and necessary, with the Intergovernmental Oceanographic Commission of UNESCO, the International Hydrographic Commission and other qualified international organizations, in order to exchange scientific and technical information which could be of benefit to the fulfilment of the Commission's functions"*. This seems to have been clearly understood by several of the Delegations, for instance the Delegation of Canada which, as a result of Annex II to Document IOC/INF-990, expressed - and I have again to quote in English - *"while Canada supports the Role of GEBCO on the provision of scientific advice, it feels that it should be the responsibility of coastal states to acquire the data and information necessary for the delineation of limits of their continental shelves as defined under Article 76 of the Convention"*.

Thank you, Mr. Chairman.

(ii) Delegation of Brazil

With reference to the report stated above, the Brazilian Delegation wishes to point out the following aspects:

1. The report itself is of reasonably good quality, and we agree with most of its considerations, but ask the Assembly to rectify the last sentence on page 11, as it is not correctly stated:

"In view of the 10-year timeframe starting from ratification for a country to submit the application for a continental shelf beyond 200 miles, and taking into account the fact that for some countries, due to an early ratification of the Convention, may have much less than 10 years before the deadline, the experts urged IOC to bring to the attention of IOC Member States the urgent issue of the delimitation of outer edge of the continental shelf under UNCLOS, and strengthen co-operation with UN-DOALOS, CLCS and IHO in discharging its responsibilities"

This statement clashes with Article 4 of Annex II of UNCLOS, that reads as follows:

*"Where a Coastal State intends to establish, in accordance with Article 76, the outer limits of its continental shelf beyond 200 nautical miles, it shall submit particulars of such limits to the Commission along with supporting scientific and technical data as soon as possible, **but in any case within 10 years of the entry into force of this Convention** for that State. The Coastal State shall, at the same time, give the names of any Commission members who have provided it with scientific and technical advice"*.

More proof of evidence that the statement in document IOC/INF-990 is not appropriate can be found in Article 308 of UNCLOS that reads:

"1. This Convention shall enter into force 12 months after the date of deposit of the sixtieth instrument of ratification of accession."

2. For each State ratifying or acceding to this Convention after the deposit of the sixtieth instrument of ratification or accession, the Convention shall enter into force on the thirtieth day following the deposit of its instrument of ratification or accession, subject to paragraph 1".

It is therefore absolutely clear that the 10 year timeframe will start counting from 16 November 1994 for all countries that:

- (i) ratified the Convention before 16 November 1993 (Article 308, item 1); or
- (ii) ratified the Convention until 16 November 1994 (Article 308, item 2).

For those countries that have deposited their instrument of ratification or accession after 16 November 1994, the Convention will enter into force on the thirtieth day following the deposit of the instrument of ratification or accession.

For different countries, the Convention may enter into force in different dates, but never before the date clearly defined in Article 308, item 1.

No commitment will bind the State Party before the Law of the Sea enters into force.

The scientific and technical data that support the intent of a Coastal State to extend the outer limit of its continental shelf beyond 100 nautical miles, shall be submitted to the Commission on the Limits of the Continental Shelf (CLCS). This Commission will come into life only within 18 months after the date of entry into force of the Convention.

2. The Brazilian Delegation disagrees vividly with most of the statements contained in Annex II of the same IOC/INF-990 document and understands that it should be entirely rewritten. A few examples can be drawn:

(i) Article 76(8) and Annex II, items 3.1 and 3.2 of UNCLOS:

The transcription of the content of those articles is partial, giving a wrong idea of the meaning and spirit of UNCLOS.

Annex II, Article 2, Item 2, not reproduced in this document, reads:

"The Secretary-General of the United Nations shall address a letter to the State Parties, inviting the submission of nominations, after appropriate regional consultations, within three months. The Secretary-General shall prepare a list in alphabetical order, of all persons thus nominated and shall submit it to all the State Parties".

From what is stated above, it seems quite clear that IOC has no mandate to draw up, in parallel, a list of experts that may potentially limit the sovereign right of a State Party to nominate its experts and see them elected by a meeting convened by the Secretary-General at the UN Headquarters.

So, in our point of view, at least Item 2 of the IOC Secretariat Action related to Article 76, should be dropped out from this document. In fact, Item 2 of Member States Action, as the Canadian Delegation has already pointed out, is also incorrect. According to Article 76 of UNCLOS, Items 8 and 9, as well as Annex II, Article 4, is the Coastal State's responsibility, intending to establish the outer limits of its continental shelf beyond 200 nautical miles, to submit the particulars of such limits and the scientific and technical data that support the plea.

(ii) Article 287 - 1(d) and Annex VIII, Article 2 (2) and 5 of UNCLOS:

The quotation omits Annex VIII, Article 2, Item 3, that states:

"Every State Party shall be entitled to nominate two experts in each field whose competence in the legal, scientific or technical aspects of such field is established and generally recognized and who enjoy the highest reputation for fairness and integrity. The names of the persons so nominated in each field shall constitute the appropriate list"

In respect of this consideration, I wish to congratulate the Executive Secretary IOC, Dr. Gunnar Kullenberg, who expressed very clearly and precisely this question in IOC Circular Letter No.1424, dated 14 August 1994. Brazil has not yet answered this letter because of the misunderstandings that document IOC-XVII/15 has introduced within our Government, bringing the idea that IOC is limiting the rights of Coastal States in drawing up the list in consultation with other scientific organizations. We realize the importance of this list of scientific experts, to be at the disposal of the State Parties (Annex III, Articles 3(b) and (c)), the Secretary-General of the UN (Annex III, Article 3(e)) and courts and tribunals related to the Law of the Sea (Article 289).

(iii) Article 289:

The quotation is incomplete; we ask to quote Article 289 of UNCLOS in full.

(iv) Article 247:

The quotation is also incomplete. It is omitted that one condition to the simplified authorization of marine scientific research to be granted, is that the Coastal State concerned be notified, indicating the competent organization of IOC that took the decision to approve the scientific project, the date and the place of the meeting. Only if the Coastal State has not expressed any objection within four months, the authorization is deemed as granted.

In the form that the item is presented, it may bring the idea that the provisions of prior consent of research projects within the Coastal States Exclusive Economic Zone or Continental Shelf, as stated in UNCLOS, is derogated.

In summary, many other articles in Document IOC/INF-990 are quoted only partially and we propose a complete revision of its Annex II, before any consideration of it may be taken in Plenary.

3. With respect to Document IOC/INF-1007, entitled Summary Report of the IOC/OSNLR *ad hoc* Expert Consultation on UNCLOS, Paris, 20-21 March 1995, the Brazilian Delegation wishes to express the view that the document presents very good scientific information, but that it also presents some juridical difficulties with respect to what is stated in UNCLOS. For instance, in Item 3.2 and Item 8.3 of IOC/INF-1007 it is stated incorrectly:

"The claims of countries on continental shelves beyond 200 nautical miles should be submitted to the Commission within 10 years after their ratification of the Convention".

With respect to Item 7.2, we also disagree with the following recommendation:

"The experts recommended that IOC develop two lists of experts. One should be of a general nature, composed of expertise in various disciplines of marine science, including geologists and geophysicists, for possible use in providing advice to states and other organizations. The other should be composed solely of marine geologists and geophysicists, for the purpose of advising the Commission on the Limits of the Continental Shelf". In this line of thought, Brazil objects to *"the preparation of a list of geologists, geophysicists and hydrographers to assist in the work of the Commission on the Limits of the Continental Shelf"*, as the proposal formulated in item 9 (iii) of the above-mentioned document, for the reasons already exposed in item 2 (i) of this document.

4. Finally, I would like to bring to your attention, Mr. Chairman, that the views of the Brazilian expert invited to participate in the IOC/OSNLR *ad hoc* Experts Consultation Group on UNCLOS with special reference to the implementation of Article 76, held in Paris, last March, do not necessarily reflect the views of the Brazilian Government. His participation had not been previously co-ordinated with the IOC national focal point.

Thank you, Chairman.

**H. Statements by the Representatives of UN-FCCC on Agenda Item 10.1.3,
and UNEP and WMO on Agenda Item 15.1**

**(i) Mr. S. Briceño, Co-ordinator, Intergovernmental and Institutional Support,
UN-FCCC Secretariat, Geneva**

Mr. Chairman,
Mr. Second Vice-Chairman,
Mr. Rapporteur,
Mr. Executive Secretary,
Distinguished Delegates and Observers

I am pleased to be here today with you in order to convey a message of collaboration on behalf of the Climate Change Convention Secretariat and its Executive Secretary, Michael Zammit Cutajar, who was unable to be here today.

As a brief history of the Convention, I can say that increasing scientific evidence about the possibility of global climate change in the 1980's led to a growing awareness that human activities have been contributing to substantial increases in the atmospheric concentrations of greenhouse gases. Concerned that anthropogenic increases of emissions enhance the natural greenhouse effect and would result, on average, in an additional warming of the Earth's surface, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. The Panel focused on: assessing scientific information related to the various aspects of climate change; evaluating the environmental and socio-economic impacts of climate change; and formulating response strategies. In 1990, the finalization and adoption of the IPCC report and the Second World Climate Conference focused further attention on climate change.

On 11 December 1990, the 45th Session of the United Nations General Assembly adopted a resolution that established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC/FCCC). Supported by UNEP and WMO, the mandate of the INC/FCCC was to prepare an effective framework convention on climate change. The INC held five sessions between February 1991 and May 1992. During these meetings, participants from over 150 States discussed the contentious issues of binding commitments, targets and timetables for the reduction of carbon dioxide emissions, financial mechanisms, technology transfer, and "*common but differentiated*" responsibilities of developed and developing countries. The INC sought to achieve a consensus that could be supported by a broad majority, rather than drafting a treaty that dealt with specific policies that might limit participation.

The UN-FCCC was adopted on 9 May 1992 and opened for signature at the UNCED in June 1992 in Rio de Janeiro, where it received 155 signatures. The Convention entered into force on 21 March 1994.

After the adoption of the Convention, the INC met six more times to consider the following items: matters relating to commitments; matters relating to arrangements for the financial mechanism and for technical and financial support to developing countries; procedural and legal issues; and institutional matters. During these INC sessions, scientific work was carried out to improve the methodologies for measuring emissions from various sources, but the larger scientific problem, as you are aware, was choosing the best methodology to estimate removal of carbon dioxide by "sinks", namely oceans and forests. The other major task before the negotiators was the difficult issue of financial support for implementation, particularly for developing countries Parties who will require "*new and additional resources*" to obtain data and implement energy-efficient technologies and other necessary measures.

As many of you are aware, the Convention held the first session of its Conference of Parties last March and April in Berlin, and as its main product, adopted what has been called the Berlin Mandate, that will launch work leading to a protocol to the Convention, to be completed by 1997 for adoption that year at the third session of the Conference (probably to be held in Japan). This process will:

- a) focus on strengthening commitments of developed country Parties regarding greenhouse gas emissions in the period after 2000, aiming, *inter alia*, to set "quantified limitation and reduction objectives within specified time-frames";

- b) not introduce any new commitments for developing country Parties, but reaffirm their existing commitments;
- c) be carried out by an open-ended *ad hoc* group of Parties, starting this year, August in Geneva, to be chaired by Ambassador Raúl Estrada Oyuela of Argentina.

This was the main result of a large and visible meeting (2,000 delegates and observers, 2,000 media representatives). "Green" expectations had been unreasonably high beforehand and remained disappointing. For realistic insiders, the mandate was a significant step in the right direction and can be termed a success.

The Conference adopted several other decisions, all by consensus, including all those recommended by the INC/FCCC and some negotiated in Berlin. One of the latter establishes a pilot phase for "activities implemented jointly" (formerly known as "joint implementation"). Participation of developing country Parties in this pilot phase is voluntary. No credits for emissions reduced or sequestered will accrue during the pilot phase. There will be reports on activities in the pilot phase.

Another new decision mandates Secretariat work on transfer of technology related to climate change. The work requested is mainly information collection. IOC and other UN partners should be able to contribute to this work.

On institutional matters, the main decision was to locate the Convention secretariat in Bonn. The likely time of the Secretariat's establishment in Bonn is during the second semester of 1996.

At this moment, the Convention has received 136 ratifications and national communications under Articles 4.1(b) and 12 of the Convention have been received from 27 Parties of the Annex 1 of the Convention.

With regard to the involvement of IOC in activities of relevance to the UN-FCCC, I must say that these are well described in Doc.2/Annex 5 of this session "Report on climate-related issues..." and therefore, I should not expand on them, except to briefly underline some issues: **firstly**, the value and importance of the work carried out by the IOC in presenting the best available scientific knowledge related to climate change and the world ocean, and in carrying out analysis, assessments and systematic observation of the role of oceans as a carbon sink as mandated by Agenda 21 (Chapter 17); **secondly**, to express the appreciation of the Climate Change secretariat for the support received from the IOC through the secondment of Dr. Alexandre Metalnikov or "Sasha" as we all know him in the Secretariat, where his good humour, in addition to his scientific and policy-making experience, is very much appreciated by everyone.

With the assistance of Dr. Metalnikov, through an active exchange of information, the UN-FCCC library has now a wide collection of documentation in the field of oceans and climate change.

Finally, in view of the Secretariat, IOC's contribution to the work of the Convention should be pursued and strengthened, first and foremost, through the active participation in the work of the IPCC; secondly, through participation in the subsidiary body for Scientific and Technological Advice which will begin its work in Geneva in October this year; thirdly, through its contribution to international technical co-operation efforts for capacity-building in developing countries for example, in the preparation of national communication, including development of inventories; and, finally, through its continued support to the Secretariat through its liaison base in Geneva.

Thank you.

(ii) Mr. Makram Gerges, Representative of the United Nations Environment Programme

Mr. Chairman, Distinguished Delegates, Colleagues, Ladies and Gentlemen,

It gives me great pleasure indeed to address you on this occasion of the Eighteenth Session of the IOC Assembly and to convey to you - once again - the greetings of the Executive Director of UNEP, Ms. Elizabeth Dowdeswell, who wishes you a very successful and productive session.

Mr. Chairman, I wish, first of all, to congratulate you personally as an outgoing Chairman of this august body for your able guidance to the Commission during your term in office, and for your commendable effort in furthering and enhancing co-operation between the Commission and other organizations, particularly UNEP.

I wish also to congratulate the Secretary of the IOC, Dr. Kullenberg, for his designation by the Director-General of UNESCO as "Executive Secretary" at the rank of Assistant Director General, and to congratulate his dedicated staff for the good preparation and excellent documentation of this session.

Mr. Chairman, Distinguished Delegates, having said that, I would avail myself, on this occasion, to make a few comments regarding the existing and planned co-operation between the Commission and the United Nations Environment Programme (UNEP) as a member organization of ICSPRO, particularly with its Oceans and Coastal Areas Programme Activity Centre (OCA/PAC) which I have the honor to represent here.

Mr. Chairman, let me express, at the outset, our full satisfaction for the extent and level of co-operation between our two organizations at all levels: global, regional and national, and outline a few areas where our co-operation should be further enhanced during the coming years, so that our activities become more and more harmonized, integrated and complementary to each other, thus enhancing our ability to meet the needs of our member governments while we rationalize the use of resources, avoid unnecessary duplication of effort, and most importantly, effectively contribute towards the implementation of Agenda 21 of UNCED.

Mr. Chairman, our co-operation spans over a wide range of activities, but let me start with our joint programme on Global Investigation of Pollution in the Marine Environment "GIPME", which in our opinion constitutes the backbone of our co-operation. We consider GIPME as a vital programme, particularly in the light of the recent development with regard to the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities about which I will provide some details in a short while.

Mr. Chairman, we note with satisfaction the progress achieved in several areas of co-operation under GIPME, particularly in the recently completed tripartite (UNEP/IOC/IAEA) review of the Marine Environment Laboratory (MEL) of the IAEA in Monaco which provides invaluable technical support and backstopping to our joint programmes on marine pollution monitoring, assessment and control under GIPME as elaborated by the Chairman of the Committee for GIPME, Dr. Neil Andersen, under agenda item 10.6 of this Assembly. According to this review, we welcome IOC to become a full co-operating and contributing partner in the umbrella project between IAEA and UNEP in order to further strengthen the Marine Environmental Studies Laboratory in Monaco.

However, we strongly feel in this, we concur with the statement made by the Chairman of the Intergovernmental Panel for GIPME, Dr. Mario Ruivo, that this Panel should be activated and revitalized in order to play its intended role in forging the consolidation and integration of our marine pollution monitoring programmes. To this end, we look forward to our consultation in this regard as suggested in paragraph 94 of the Draft Summary Report of this Assembly, and we shall discuss this matter further during our forthcoming GIPME Officers Meeting which will take place immediately after this Assembly.

With respect to the Global Programme of Action for the Protection of the Marine Environment from Land-Based activities which I referred to earlier, I am pleased to inform you Mr. Chairman that considerable progress has been achieved in this area with the active participation of IOC. Decisions 17/20 and 18/3 of the Governing Council of UNEP, which set-up this process, requested the Executive Director of UNEP to co-operate closely *inter alia* with the Intergovernmental Oceanographic Commission of UNESCO in preparation for the Intergovernmental Conference on Land-Based Activities, to be held in Washington D.C., 23 October to 3 November 1995, with a view to adopting the Global Programme of Action, and we look forward to co-operating with IOC in this important initiative.

Mr. Chairman, UNEP also co-sponsors and co-operates with IOC in the development and implementation of GOOS, particularly its two modules on the "Health of the Ocean" and on the "Coastal Zone". However, some of the pilot activities of the coastal zone module need a higher pace of implementation and, in particular, I refer to the pilot activities on Coastal Circulation and on Plankton Community.

We regard GOOS as an important contribution to our Global Environment Monitoring System (GEMS) and the United Nations System - Wide EARTHWATCH, and we look forward to a fruitful co-operation in this area.

Mr. Chairman, in the area of climate and climatic change, we have already suggested to IOC to work together on the role of the ocean as a carbon sink, but our consultation in this regard needs to be further expedited.

In Ocean Sciences and Living Resources (OSLR). I am pleased to inform you, Mr. Chairman, that UNEP intends to co-sponsor OSLR and to work closely with IOC on matters related to the protection of marine biodiversity and the management and sustainable utilization of the living marine and coastal resources under our Marine Living Resources Sub-Programme in the framework of the new integrated programme of UNEP.

Mr. Chairman, UNEP and IOC are partners in many other areas and work productively together in the framework of ICSPRO with its expanded membership which now includes UNEP and IAEA, and its revised role in addressing matters related to the United Nations Convention on the Law of the Sea (UNCLOS), the Convention on Biological Diversity and Climate Change, as well as other matters such as the International Year of the Ocean and Expo 1998.

With the same token, our work in the framework of the ACC Sub-Committee on Oceans and Coastal Areas, is progressing very well. In this context, we wish to express our appreciation to the IOC for providing an active secretariat for the Sub-Committee and a highly dedicated Secretary in the person of Mrs. Natalie Philippon-Tulloch. We feel, Mr. Chairman, that the excellent work carried out so far by this Sub-Committee is of vital importance for coherent and well co-ordinated reporting to the UN Commission on Sustainable Development on the implementation of Chapter 17 of Agenda 21 of UNCED.

At the regional and national levels we wish to work and co-ordinate more closely together in areas such as the South-West Atlantic, with the three countries involved, namely Argentina, Brazil and Uruguay, as well as in the Red Sea, the Black Sea and the Caspian Sea regions with their respective riparian states, using the successful model of CEPOL in the Wider Caribbean region.

Finally, Mr. Chairman, we wish to welcome wholeheartedly the initiative of the Director General of UNESCO to launch an interdisciplinary project on Coastal Zones and Small Islands as an experiment for the next Medium-Term period. This project fits very well with the new integrated approach, recently adopted by the Governing Council of UNEP at its 18th session, for the management of the marine and coastal areas and the associated watersheds and river basins. With this in view, we look forward to establishing an effective co-operation between this project and our work on Integrated Coastal Area Management (ICAM) and in the context of the Barbados Plan of Action for the Small Islands Developing States (SIDS).

In concluding, Mr. Chairman, I would like to say that it was an honor and pleasure to work with you as Chairman in furthering the objectives of our two organizations, and we hope to enjoy the same with the incoming Chairman of IOC, Mr. Geoffrey Holland, to whom we extend our sincerest congratulations for his election and we wish him all the best.

(iii) Representative of the World Meteorological Organization

Thank you, Mr. Chairman, for giving me the floor on this item, and my thanks also to the Executive Secretary for his introduction.

As you know, WMO has been a member and active supporter of ICSPRO since its inception, and this support continues. It is in the context of ICSPRO that WMO has seconded a professional officer to IOC since the mid-1970s, and paid for half of a secretarial post in IOC, and the just-concluded Twelfth World Meteorological Congress has agreed to the continuation of these arrangements for the next four years, until the end of 1999.

Mr. Chairman, WMO participated in both the recent ICSPRO consultations referred to in the introduction, and was pleased to be able to host the second of them. We therefore fully concur with the conclusions and recommendations reached at the consultations, and just presented by Dr. Kullenberg. WMO sees ICSPRO as having a role in the UN system which is complementary to that of the ACC Sub-Committee on Oceans and Coastal Areas, at the same time, more specialized and more wide-reaching. In addition, we believe that the present membership of ICSPRO, with the recent addition of UNEP and IAEA, is most appropriate to this role, combining as it does, the UN agencies with the most substantive ocean-related interests. If necessary, of course, participation in specific meetings or consultations can always be augmented by other agencies, as a function of the issues being addressed.

Mr. Chairman, it is clear that the future of ICSPRO should and will be reviewed in details after the CSD review of the ocean agenda in 1996. WMO nevertheless supports its continuing need and ever increasing importance as a co-ordinating and information exchange mechanism among major UN ocean-related agencies. As we have noted a number of times, the requirements for co-operation and co-ordination are probably greater now than ever before, and we must therefore make every effort to use well-established and successful mechanisms such as ICSPRO to the best effect.

Finally, Mr. Chairman, I would like to note here that the Twelfth Congress has just adopted a resolution supporting WMO's participation in activities to celebrate the International Year of the Ocean, 1998, and agreed that ICSPRO is the appropriate inter-agency mechanism to co-ordinate these activities. The Congress further urged all national meteorological services to participate in related activities at the national level.

ANNEX IV

MEMBER STATES OF THE COMMISSION AND ITS OFFICERS

A. List of Member States of the Commission (124)
(as of 28 June 1995)

AFGHANISTAN	LIBYAN ARAB JAMAHIRIYA
ALBANIA	MADAGASCAR
ALGERIA	MALAYSIA
ANGOLA	MALDIVES
*ARGENTINA	MALTA
*AUSTRALIA	MAURITANIA
AUSTRIA	MAURITIUS
BAHAMAS	*MEXICO
BANGLADESH	MONACO
BARBADOS	MOROCCO
BELGIUM	MOZAMBIQUE
BENIN	MYANMAR
*BRAZIL	NETHERLANDS
BULGARIA	NEW ZEALAND
CAMEROON	NICARAGUA
*CANADA	*NIGERIA
CAPE VERDE	*NORWAY
*CHILE	OMAN
*CHINA	PAKISTAN
*COLOMBIA	PANAMA
CONGO	*PERU
*COSTA RICA	*PHILIPPINES
COTE D'IVOIRE	POLAND
CROATIA	*PORTUGAL
*CUBA	QATAR
CYPRUS	*REPUBLIC OF KOREA
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA	REPUBLIC OF YEMEN
DENMARK	ROMANIA
DOMINICAN REPUBLIC	*RUSSIAN FEDERATION
ECUADOR	SAMOA
*EGYPT	SAINT LUCIA
EL SALVADOR	SAUDI ARABIA
ERITREA	SENEGAL
ESTONIA	SEYCHELLES
ETHIOPIA	SIERRA LEONE
FIJI	SINGAPORE
FINLAND	SLOVENIA
*FRANCE	SOLOMON ISLANDS
GABON	SOMALIA
GAMBIA	*SOUTH AFRICA
GEORGIA	*SPAIN
*GERMANY	SRI LANKA
GHANA	SUDAN
*GREECE	SURINAM
GUATEMALA	SWEDEN
*GUINEA	SWITZERLAND
GUINEA-BISSAU	SYRIAN ARAB REPUBLIC
GUYANA	*THAILAND
HAITI	TOGO
ICELAND	TONGA
*INDIA	TRINIDAD & TOBAGO
*INDONESIA	TUNISIA
*IRAN, ISLAMIC REPUBLIC OF	*TURKEY
IRAQ	*UKRAINE
IRELAND	UNITED ARAB EMIRATES
ISRAEL	*UNITED KINGDOM OF GREAT
*ITALY	BRITAIN & NORTHERN IRELAND
JAMAICA	UNITED REPUBLIC OF TANZANIA
*JAPAN	*UNITED STATES OF AMERICA
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ANNEX V

BRUUN MEMORIAL LECTURES 1995**SOME RESULTS OF THE
TROPICAL OCEAN AND GLOBAL ATMOSPHERE (TOGA) EXPERIMENT****(Abstracts)****APPLICATION OF EL NINO PREDICTION TO FOOD PRODUCTION IN PERU**

Prof. Pablo Lagos
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The tremendous human and economic toll of the 1982-83 unusual intense climate variation known as the El Niño-Southern Oscillation (ENSO) prompted study of the tropical Pacific ocean-atmosphere interaction which has led to a decade of extraordinary progress in observing and modelling ocean and atmospheric conditions that make it possible to forecast an ENSO event a year in advance.

The present study addresses the issue of application of ENSO prediction to practical problems of economics significance, in several tropical countries that are affected by ENSO. Government agencies in Peru, Ecuador, Brazil, Australia, India, China and Ethiopia regularly monitor oceans and atmospheric conditions for signs of the evolution of an ENSO event and use this information to meet their particular social and economic needs.

The regularity of ENSO episodes, together with advances made in prediction has made it possible to offer decision makers a unique opportunity to plan for anticipated climate variations in the process of using land and ocean resources for improving economic development. In Peru, an assessment of the likelihood of a warm or cold phase of the tropical Pacific Ocean guides government and end-user decisions on fishery and agricultural activities. Specifically, in the fishery sector effort is to use prediction of sea surface temperature anomalies to increase fish landing with minimum cost by establishing a strategy for alternative prediction of air temperature and precipitation to improve the productivity by selecting the crop type appropriate to the new environmental condition. These examples will be presented after a brief introduction on the relationship between the SST anomalies in the equatorial Pacific Ocean and SST anomalies along the coast of Peru, precipitation anomalies in the northern coast of Peru and in the Lake Titicaca region.

**NEW APPLIED KNOWLEDGE RESULTING FROM THE TOGA PROGRAMME
IN ALL THREE OCEANS**

Prof. James J. O'Brien
Distinguished Research Professor
The Florida State University
Meteorology & Oceanography
Tallahassee, USA

The TOGA programme advanced knowledge of the ocean and atmosphere in many ways. The intense observation and modelling programme has revealed very interesting facts about all 3 oceans. In the Pacific, we have the ENSO and Indonesia throughflow events. In the Atlantic, we have the Gulf of Guinea upwelling, Brazil retroflection, etc. In the Indian Ocean, we have the monsoon and the Bay of Bengal new knowledge. I will use a new computer projector to demonstrate the new understanding.

ANNEX VI

IOC MEDIUM-TERM STRATEGY

1. INTRODUCTION

The IOC was created in 1960 recognizing that (Report of Sixteenth Session of the Assembly, Document SC/MD/97, Annex VII):

"the oceans, covering some seventy percent of the Earth's surface, exert a profound influence on mankind and indeed upon all forms of life of the Earth... In order properly to interpret the full value of the oceans to mankind, they must be studied from many points of view. While pioneering research and new ideas usually come from individuals and small groups, many aspects of oceanic investigations present far too formidable a task to be undertaken by any one nation or even a few nations".

These prophetic thoughts have been given new meaning with the recognition that the Earth and its environment are changing dramatically on previously unanticipated time and spatial scales at a time when many nations are seeking new opportunities for social and economic development. The international community is taking unprecedented actions to address the economic and social implications of global environmental change and of sustainable development which, as a result, have become a core agenda for international affairs. In regard to the ocean, attention is increasingly being focussed on the coastal zones. A basic element of this strategy is an issue-oriented approach.

2. MAJOR ISSUES

Demographic analysis suggests that the global population will only begin to level off in the middle of the next century and that before then another two to four billion, beyond the present six billion, will need to be provided for. At the same time, FAO statistics - even ten years ago - indicated that the total world food production could support a population of five to six billion, if evenly distributed.

Since then, world food production has not kept pace with population growth and is not more evenly distributed than before. The consequences are those that we already see today and which are not likely to decrease in magnitude and geographical extension. Not the least of these are major starvation and mass migration with ensuing political instability and pressure on societal structures.

Patterns of energy consumption follow that of the population curve. Consumption in developing countries can be expected to increase relatively rapidly. Taking a global population of ten billion, with an average per capita energy consumption equal to just 25% of the present consumption in the United States, world energy consumption in 50 years would require 2.7 times the resources used today. This demand may not be met by utilization of oil and gas alone, nor through the other readily available resources of coal and oil shale.

Observations over several decades show an undeniable trend of increasing atmospheric CO₂. A coupling between atmospheric CO₂ levels and temperature on earth is demonstrated from historical and geological records beyond any doubt. Patterns of energy consumption, as well as those of food production, will may well have to change over the next five decades.

How the global life-supporting system will change is a major question. Forecasting of the size and timing of these changes can only be achieved through the use of models which must take into account the role of the oceans as a major governing force of life on our planet.

It should be emphasized that much of the present population lives, and a majority of the future population of the earth may live and work within the coastal areas. This makes these areas of society very vulnerable to physical and other natural and human-induced disturbances and changes.

Basic trends point very clearly to the increasing importance of the oceans. In order for society to be able to use the ocean's resources rationally in the next century a major concerted effort must be initiated now in marine research, technology and systematic ocean observations development, and related global capacity development. The coastal zone is the region where effects of population growth, possible climate change, etc., will be felt most.

The potential impacts of climate variations and change, as well as the impact of many natural hazards (tsunami, storm surges), also hit the coastal zones.

The UN Convention on the Law of the Sea (UNCLOS) defined the "New Ocean Regime" and endorsed the Exclusive Economic Zones (EEZ). This implied the greatest transfer of natural resources in history. Ninety percent or more of traditional fishing areas that used to be in international waters are now under the jurisdiction of individual coastal and island states. Thus the instrument for a sustainable use and development of ocean resources is available.

A recent realization is the role of the interdependence of human action, societies and systems, and that we essentially have to manage interdependence taking into account uncertainties and prevention of effects of human actions. Our life-support system is not only the environment but also human components of systems and institutions, including relationships between nations. What are the effects of human systems and institutions on the human habitat? What are the effects of environmental resources on peace and security, and how are these effects measured? What are the indicators of sustainable development? The environmental resources include air, soil, water, terrestrial and marine ecosystems, climate, and their degree of disturbance and pollution. Their interdependence is demonstrated when analyzing the feedback mechanisms and their effects.

Four main factors seem to be at the root of present environmental problems (see e.g. Document IOC/EC-XXV/8 Annex 2, para 2.17, 1992):

- (i) limited attention to national and international economic policies and forms of development which do not adequately take into account the environmental consequences of these policies;
- (ii) weak regulatory mechanisms and administrative systems dealing with environmental issues;
- (iii) insufficient public awareness concerning the real causes and magnitude of environmental problems, and available remedial measures; and
- (iv) inadequate forecasting and anticipation of emerging environmental problems.

Remedies for these include (loc. cit): improved understanding of marine and coastal environmental processes and ecology; integrated management approaches; control of land-based sources of marine pollution; long-term systematic research and observation programmes; strengthening of national infra-structures and national and international institutions; financial assistance and capacity development. Several of these matters are addressed in Agenda 21, in particular in Chapter 17.

Society is presently in a transitional period, with emphasis on intersectoriality and interdisciplinarity. New partners and institutions are emerging. There is a need to reshape existing institutions to meet new challenges, including the development of new human resources able to understand and analyze the complex interplay between systems, organisms and institutions. A system-oriented, holistic approach, addressing issues is required. The discipline of economics must become involved and socio-economics is becoming a necessary element in our endeavours.

3. ELEMENTS OF THE STRATEGY

Major frameworks for IOC actions are provided by UNCLOS and UNCED follow-up. Co-operation with other UNESCO activities and with other organizations is an essential element. The Joint Statement of the chairpersons of IOC, MAB, IHP, and IGCP to Commission III of the 27th General Conference of UNESCO, November 1993, emphasized the need for more interdisciplinary co-operation and identified several areas for increased interaction: coastal zone management, small island environments, biological diversity, natural disaster reduction. Some of these are reflected in an interdisciplinary project on coastal zones and small islands proposed in the UNESCO Medium-term Strategy.

The shift of emphasis from the open-ocean to the coastal zone leads to a strong emphasis on regional or sub-regional co-operation and the use and strengthening of IOC regional subsidiary bodies as another essential part of the Strategy. This includes sharing of equipment and common use of infrastructure and existing institutions.

IOC has a role to play as the only dedicated mechanism for these matters, in relation to development, organization and co-ordination of long-term systematic observations on a well-founded scientific basis and adjusted to meet society's needs, with related capacity building. IOC can also act as a supporting scientific and technical body for other organizations and, on the other hand, IOC can identify related tasks which other organizations could assume.

The Strategy emphasizes the scientific basis and application of scientific results and systematic observations for the management and sustainable development in the framework of the follow-up to UNCED. Particular stress is put on the follow-up to the Small Island Developing States Conference.

These basic elements may have the following implications for the activities of IOC:

- (i) that emphasis must be put on ensuring that understanding and scientific knowledge of how the ocean works need to be transmitted and related to other parts of society and must be supplemented with an adequate, regularly updated and scientifically valid information basis, properly integrated, accessible, and transmissible to Governments, for use in their policy formulation and decision making;
- (ii) that education and awareness are major long-term factors which influence how society deals with environmental conditions and resources;
- (iii) that interdependence is presently reaching global scales making it imperative that knowledge, information (data) and technology are shared and that inter-regional co-operation is much further developed;
- (iv) that indicators and early warning systems need to be identified, interpreted and used in shaping common policies;
- (v) that institutional mechanisms must be strengthened so that institutions are able to provide the required, adequate information and so that they can implement agreed policies and instruments (cases at hand are UNCLOS; FCCC, and the Convention on Biological Diversity);
- (vi) that the pressure on the terrestrial environment will inevitably lead to increasing pressure on the use of marine resources including coastal areas;
- (vii) that pressure on the coastal zone will continue to increase over the coming decades; and as a consequence, the vulnerability of society to ocean-driven disasters, as well as gradual destruction, will continue to increase;
- (viii) that inter-dependence may lead to an increasing gap between developed and developing countries if preventive policies are not identified and implemented.

The creation of more increased public awareness concerning the role of the ocean and of IOC must be an important effort in the Medium-term period. This should *inter alia* be associated with the Ocean Year 1998 and EXPO98.

4. INSTITUTIONAL FACTORS

The entry into force of the United Nations Convention on the Law of the Sea (UNCLOS) in November 1994 provides a potential factor of influence on the IOC in its evolving role as a competent international organization in marine scientific research and related activities. The expansion in marine scientific research is presently being followed by an increasing need for ocean services and capacity development, including training and education. Societies' priorities on research programmes concern the scientific basis for development and management of the marine environment, its living and non-living resources and the coastal zone. IOC has major responsibilities to provide technical assistance to coastal States to carry out marine research and systematic observations, and to disseminate marine scientific data and information, as well as in its advisory roles.

Another major factor influencing the work of IOC is the follow-up to UNCED, including the Convention on Biological Diversity, the Framework Convention on Climate Change and Agenda 21; the IOC, in this context, needs to co-operate with the Commission on Sustainable Development, the ACC Sub-Committee on Oceans and Coastal Areas, the UN Department on Policy, Co-ordination and Sustainable Development, as well as the Secretariats established to serve the Conventions, and ICSPRO.

A third factor presently influencing IOC science programmes is the establishment of global change research programmes in the two main streams of WCRP and IGBP. The IOC is a co-sponsor of WCRP, with WMO and ICSU, and is co-operating with several IGBP projects, notably JGOFS and LOICZ. The Global Ocean Ecosystem Dynamics project (GLOBEC), which IOC co-sponsors together with SCOR, ICES and PICES is also becoming an IGBP project.

Involvement in these large-scale global change research programmes puts great demands on the IOC which must be fulfilled. Major reasons for the co-sponsorship are the need to ensure that the global marine research community, as a resource, participates actively in these research programmes; that the required capacity in human resources can be established and sustained; and that the results can be shared globally. IOC has an important role to play in this context.

In view of the limited resources available generally, and to the IOC in particular, the involvement of IOC in these global research programmes should essentially be seen as the fulfillment of IOC's role in promoting marine scientific investigations *"with a view to learning more about the nature and resources of the oceans through the concerted action of its members"* (part of Article 2 of the IOC Statutes). There are certain scientific aspects not covered through the global change research programmes, in particular those related to OSNLR and GIPME. These programmes are major contributions in the context of UNCLOS and UNCED.

Finally, a significant factor influencing IOC is the increasing demand for ocean services, articulated in the agreements on the development of the global observing systems GOOS and GCOS. IOC is a partner in the development of both, with a leading role in GOOS. It is clear that this must be seen as the major contribution of IOC to the development of ocean services. It encompasses practically all ocean services and ocean observation programmes of the IOC. An exception is the marine information management programme, which should turn into an important contributor to the implementation of UNCLOS and follow-up of UNCED.

Ultimately, all efforts will vanish, however, if the capacity development is not maintained, and if the involvement of Member States in all the activities is not secured. The IOC contribution to this capacity development will continue through the TEMA programmes, with a new strategy adjusted to meet the needs of UNCLOS and UNCED. Hence TEMA must be of the highest priority.

5. OVERALL OBJECTIVES

The principal goal of the IOC is defined in its Statutes, Article 2, as being *"to promote marine scientific investigation and related ocean services, with a view to learning more about the nature and resources of the oceans"*, also referred to above.

IOC has identified four major themes to focus on to meet the challenges identified here:

- (i) develop, promote and facilitate international oceanographic research programmes to improve our understanding of critical global and regional ocean processes and their relationship to the stewardship of ocean resources and their exploitation;
- (ii) ensure effective planning for the establishment, and subsequently the co-ordination, of an operational global ocean observing system which will provide the information needed for oceanic and atmospheric forecasting, and for ocean management by coastal nations, and also serve the needs of international global environmental change research;
- (iii) provide international leadership for the development of education and training programmes and technical assistance essential to global ocean monitoring and associated oceanographic research; and
- (iv) ensure that ocean data and information obtained through research, observation and monitoring are efficiently husbanded and made widely available.

The following major thrusts should meet the challenges and address the major issues:

- (i) Global climate research programmes and the associated large-scale oceanographic experiments to observe and understand air-sea interaction, the impact of the ocean on climate, and the impact of changing climate on the ocean.
- (ii) Research, baseline studies, and monitoring of marine pollution to measure and assess the effects of human activity, notably those resulting in degradation and contamination, especially in the coastal interface zones; studies and observations in the coastal zone aimed at assessing vulnerability.
- (iii) Study of the marine environment as a whole - both coastal and open-ocean - its physical and biological parameters and processes, with emphasis upon its role as a residence for living resources, its geological and geophysical properties, including non-living resources in shallow and deep-ocean areas, and the interfaces between the ocean, its floor, and the atmosphere.
- (iv) Accelerated development of ocean observing and monitoring systems leading to an adequate Global Ocean Observing System in support of marine research and ocean uses, as a common service to Governments and their marine user communities for the common good. This should also ensure that information on the world's oceans is collected to uniform standards.

Within these thrusts the major uncertainties and issues are addressed through the following programmatic actions:

- (i) Capacity building through TEMA and regional programmes;
- (ii) Systematic Ocean Observations through GOOS, and IODE, with the support of others;
- (iii) Oceans and climate, through WCRP, GOOS and GCOS; and IGBP(JGOFS); related to FCCC, Small islands, biodiversity, Chapter 17;
- (iv) Living Marine Resources and food production, through OSLR, GOOS, Ocean Mapping (OM), and GIPME, related to Chapter 17 and biodiversity;
- (v) State of the marine environment and the health of the coastal zone, through GIPME and GOOS, and IGBP(LOICZ), related to Chapter 17 (land-based sources);
- (vi) Integrated Coastal Area Management and coastal zone vulnerability, through OSNLR, OSLR, OM, GIPME, IODE, GLOSS, GOOS, and IGBP(LOICZ), and participation in CSI, related to Chapter 17 and FCCC;
- (vii) Coastal zone protection, warning and natural disaster reductions through the tsunami warning system (ITSU), sea-level observations (GLOSS), OM, IODE and storm surge predictions, related to Chapter 17;

- (viii) Small Island Developing States through vulnerability studies and observations (GLOSS, GOOS), GIPME, OSLR, OSNLR, OM, IODE, and participation in CSI;
- (ix) Data and information Exchange through GOOS and related programmes (GLOSS, IGOSS, Mussel Watch, etc.) and IODE and MIM;
- (x) Public awareness creation through various actions, including publication of newsletters and exhibitions.

Most of these activities also fall within the framework of UNCLOS. One of IOC's major goals should be to serve as an intermediary between ocean and coastal research and systematic observations on the one hand, and policy formulation and decision-making by Member States on the other. IOC should help ensure that the required knowledge and scientific results are obtained, and that they are interpreted and provided to all Member States for use and application.

The programme actions are both global and regional. The latter address the regional priorities as identified by the regional subsidiary bodies, and are therefore not merely mirrors of the global ones.

6. MECHANISMS AND EVALUATION

The implementation of the IOC programmes will use global and regional mechanisms. The global ones concern the major co-operative efforts for which groups of experts and intergovernmental mechanisms are in place.

The adequacy and need for these mechanisms need to be evaluated successively, and in order to establish a proper evaluation mechanism various approaches are being analyzed.

IOC has, over a number of years, used the *ad hoc* study group mechanism to analyze major questions concerning the IOC. It is proposed that such a mechanism be used intersessionally to analyze and propose ways and means for IOC to adequately implement its functional autonomy and new arrangements within UNESCO. This should include consideration of evaluation and review processes.

The meetings of the IOC Governing Bodies continue according to the Statutes. The *ad hoc* study group mechanism may be used to analyze the statutes in the light of new arrangements for the IOC within UNESCO, including the functioning of the Governing Bodies and representation.

The regional programmes will be developed and implemented through IOC's regional Subsidiary Bodies. The decentralization mechanism should be used to ensure proper regional commitments and functions. Consideration to establish further Sub-Commissions may be appropriate during the medium-term period.

ICSPRO is expected to continue as a major inter-agency co-operation mechanism. IOC may consider becoming a member of ICSPRO in view of the new arrangements for IOC within UNESCO. The terms of reference for ICSPRO may need to be analyzed and possibly revised. ICSPRO is expected to play a major co-ordinating role with respect to the Ocean Year 1998.

The ACC Sub-Committee on Oceans and Coastal Areas may continue as a major inter-agency mechanism for implementation of Chapter 17 of Agenda 21.

IOC will need to maintain links with the Secretariats for the FCCC and the Convention on Biological Diversity, and with the various bodies established within UNCLOS, including the Sea-bed Authority and the Secretariat of the United Nations (UN/DOALOS). This liaison may require use of mechanisms such as secondment or out-posting of staff or consultants.

The resource requirements of the IOC Secretariat will have to be properly evaluated, possibly using the issue-related approach as adopted in this strategy proposal. A key issue in this context is the commitment of Member States to the IOC mechanism. The awareness of the IOC in the Member States must be increased and adequate national mechanisms to act as counterparts need to be put in place.

7. EXPECTED RESULTS

(i) Addressing the uncertainties

Provision of improved forecasting tools for use in the context of coastal area management, response strategies, adaptation to climate change, management of marine living resources, effects of changes of UV radiation, and assessing the health of the ocean. These results are expected from the on-going large-scale research programmes and the gradual (phased) establishment of GOOS. They respond to Chapter 17 of Agenda 21 and the Conventions.

(ii) GOOS development

Established regional observation networks as part of GOOS, providing on a regular basis data on the conditions in the marine environment, sea level, marine-living resources and health of coastal zones, including agreed networks on coastal base-line stations, committed to be maintained by participating nations, and building on the on-going experiments, such as European Seawatch.

(iii) Land-based sources of marine pollution

Global coverage of the International Mussel Watch in accordance with the Master plan, and published results and assessments of the results, inter alia for use in connection with the land-based sources of the marine pollution problem.

(iv) Role of the oceans in greenhouse gas balances

Improved assessment of the role of the oceans and regional seas in the CO₂ balance and budgets of other anthropogenically influenced green house gases.

(v) Public awareness

Improved public awareness concerning the causes and magnitudes of environmental problems, and related possible adaptation and remedial measures, with respect to marine environment.

(vi) Capacity development

Established networks of capacity development centers building on national institutions, committed by participating nations, with competent staff and gradually developed adequate infrastructures, capable to respond to socio-economic requirements for reliable information on management of coastal areas, marine-living resources, adaptation measures, forecasting and analysis, including regulatory purposes.

ANNEX VII

1998 INTERNATIONAL YEAR OF THE OCEAN

A. THE OCEANS CHARTER

Draft prepared by the First Vice-Chairman IOC

The undersigned agree:

- (i) The oceans and their resources are a necessary element of life on this planet.
- (ii) The health of the oceans and the sustainability of the renewable resources, together with the wise and safe uses of its other bounties, must be an axiom for all governments to accept and honour for the long-term benefit and existence of their respective and collective peoples.
- (iii) The acquisition of the knowledge necessary for the understanding and stewardship of the oceans and their adjacent seas and for the adoption of policies, standards and regulations to protect the ocean environment and to husband its resources, are goals to be pursued both nationally and internationally.
- (iv) There must be mutual assistance and the will to work together to achieve common goals for the oceans - adjacent and regional coastal states should co-operate in the adoption of local policies and actions - countries with knowledge and resources should assist less fortunate neighbours - data and information for global and regional problems should be readily available - States should make use of international and intergovernmental organizations to generate global programmes and agreements.

Acting on behalf of our governments, we recognize the wisdom of acting in unison to protect the oceans and to use its resources in a sustainable manner and accept this Ocean Charter as a basis for future action.

Signed in the Year of the Oceans, 1998

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B. FRAMEWORK FOR IOC PLANNING AND ACTIVITIES WITH RESPECT TO 1998 INTERNATIONAL YEAR OF THE OCEAN

1. BACKGROUND

The Assembly, through its Resolution XVII-17 "1998 - The International Year of the Ocean" invited the Director-General of UNESCO to present a proposal to the 27th Session of the General Conference of the Organization, that 1998 be declared the International Year of the Ocean. This was subsequently effected and the General Conference adopted the proposal by Resolution 2.5. The Director-General transmitted this to the United Nations through ECOSOC. ECOSOC likewise endorsed the proposal in July 1994, and passed the Resolution to the General Assembly.

Through its Resolution A/RES/49/131: Question of Declaring 1998 International Year of the Ocean,

"The General Assembly,

Recalling Economic and Social Council Resolution 1994/48 of 29 July 1994,

Proclaims 1998 International Year of the Ocean" (92nd Plenary Meeting, 19 December 1994)

The Secretary IOC subsequently prepared relevant information for the 146th Session of the Executive Board of UNESCO (May-June 1995) with a draft proposed decision of the Executive Board.

The Twenty-seventh session of the IOC Executive Council requested the Secretary to report to the Assembly on this matter and propose further relevant action. This is hereby done, taking into account *"the understanding that such a declaration will imply no cost to UNESCO, IOC or .."* (Resolution XVII-17 last paragraph). The forthcoming international exhibition in 1998 entitled "Oceans: Heritage for the Future", to be hosted by Portugal, is also recalled (Document SC/MD/101 para.461).

2. POSSIBLE INSTITUTIONAL MECHANISMS

The Ocean Year and EXPO '98 related activities of IOC should be seen in the context of our response to UNCLOS and follow-up to UNCED. In order to properly organize the contributions of IOC to the Ocean Year, as well as to EXPO '98, an IOC mechanism must be established. It is proposed that this mechanism be the IOC Officers, supplemented by some experts selected so as to achieve a geographical and scientific coverage, together with one *ex officio* member from Portugal in view of that country's hosting of EXPO '98. There should also possibly be associated with this mechanism media- and policy-related personalities.

These persons could constitute an IOC 1998 Preparatory Task Team. It is suggested that the additional experts be the chairpersons or vice-chairs of IOCEA, IOCINCWIO, IOCARIBE, WESTPAC and IOCINDIO. In order to ensure proper linkage with the scientific community at large, and help ensure their involvement, it is proposed that ICSU be invited to provide an expert to the Task Team. This group would work mainly by correspondence. The intersessional meetings of the IOC Officers would be used to specifically consider this item. Draft Terms of Reference for the group are given in the Appendix. The Task Team would complete its work by the Nineteenth Session of the Assembly in 1997.

It is also proposed that an adequate corresponding mechanism be established at the national level. This could be in the form of a focal point, perhaps associated with existing national committees. The focal point mechanism will facilitate proper correspondence between Member States and the specific IOC Preparatory Task Team.

Recent consultations of ICSPRO (Rome, 22 April 1994; Geneva, 26 January 1995) have confirmed the interest and readiness of the member organizations to use ICSPRO as a suitable inter-agency mechanism for co-operation and co-ordination of actions in relation to 1998 International Year of the Ocean. It has been agreed that this message be conveyed to the respective governing bodies. Furthermore, specifics of joint action and co-ordination will be considered at the forthcoming ICSPRO meeting (UNESCO, Paris, end of August 1995). This mechanism will likewise be used for the related co-ordination and co-operation of contributions to EXPO '98.

3. POSSIBLE BASIC APPROACH FOR IOC ACTION AND INTERFACE WITH THE PROGRAMME IN SUPPORT OF THE INTERNATIONAL YEAR OF THE OCEAN

The Seventeenth Session of the Assembly emphasized that the oceans play a decisive role in shaping the life of this planet, that the oceans and all seas and adjacent coastal areas form an integral whole, which is a necessary component of the global life-support system with enormous economic value and a very significant source of food, potential energy and raw materials. The majority of the world population is located in the coastal area, including most mega-cities, with an increasingly heavy impact and pressure on marine resources, the quality of the marine environment, and production of food. Many natural and man-made hazards are transmitted to the coastal zone and inland through and from the ocean, including tropical cyclones, storm surges, drought, sea-level rise, salt water inundations.

Integral management of the coastal and ocean space, and of the multiple uses and resources of the marine environment, depends on access to information, and a substantial efforts need to be made towards 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, Brazil, June 1992. The United Nations Convention on the Law of the Sea entered into force in November 1994, and reinforces a number of ocean-related actions. This calls for new levels of international co-operation by governmental and non-governmental organizations. New mechanisms of exchange and dialogue between the different components of society dealing with ocean affairs will be required. The follow-up to UNCED likewise requires new partnerships, and an appropriate development of the marine environment necessitates a better understanding of the complex natural processes and interaction between the ocean and mankind.

In the light of this situation it appears appropriate to agree on a basic philosophy for IOC actions and a programme specifically dedicated to the 1998 International Year of the Ocean. It is proposed that the approach to achieve this be based on the Declaration of Copenhagen 1960, leading to the establishment of IOC, IOC Resolution XVII-17, and the results of deliberations at the Lisbon Conference, 1994, reproduced in the IOC Annual Report, 1994.

The Strategy of the IOC adopted at the Sixteenth Session of the Assembly (Paris, March 1991; Document SC/MD/97 Annex VII) presents succinctly the major themes of IOC. The Strategy has been used in preparation of the IOC Comprehensive Action Plan and Draft IOC Medium-Term Strategy (Documents IOC-XVIII/2 Annex 1 and 3 respectively). These must also be taken into account in the formulation and preparation of the IOC contributions to the 1998 International Year of the Ocean and EXPO '98, as appropriate after their consideration by the Assembly. Both the Plan and the Strategy are closely linked to the responsibilities of IOC in relation to UNCLOS and UNCED.

The Declaration of Lisbon, *inter alia*, calls upon Member States of and institutions within the UN System to take urgent action to ensure that:

- "(i) *national institutions dedicated to ocean and coastal research, systematic observations and services are strengthened or established;*
- (ii) *commitment to capacity building is reflected in greater effectiveness of bilateral and international assistance, so that the resources are commensurate with the political and socio-economic challenges associated with the use and wise management of ocean and coastal areas, and, in particular, new arrangements for the North-South support, South-South collaboration and the increased use of the capacity created in the South;*
- (iii) *a cohesive and co-operative approach to ocean science, ocean services and related capacity building is applied within the UN System using the IOC as an appropriate institution for facilitating this".*

It is proposed that IOC action focuses on the need to bring these requirements to the attention of Governments and the populations at large, and create an increased awareness of these at decision and policy-making levels. In this context IOC may consider its further role in providing a basis for marine science policy and management developments.

The roles and possibilities of science, technology, systematic observations, concerted actions and capacity building, should be emphasized.

Some ideas are presented for consideration:

- (i) It is proposed that results and implications of a few recent large-scale international research programmes be brought out, e.g., TOGA, ODP, WOCE, ocean floor ecology, Polar ocean research, land-ocean interaction studies, effects of marine contamination, living resources (SARP). Emphasis should be put on the provision of interpretations of what the results imply for society. This could be brought out in a special volume based on a seminar which involves marine scientists, economists, managers, policy makers and journalists.
- (ii) It is proposed that recent technological developments be presented in a similar vein. This should cover ocean modelling and observations relating to GOOS development, and others such as communication and computer technologies. The interactions between these technologies to generate the important beneficial results should be stressed. The role of data exchange and IODE should also be emphasized here. Results of a GOOS pilot experiment could perhaps be presented, if available.
- (iii) The need for sharing of knowledge, capacity and solidarity through a reinforced TEMA programme, as part of all IOC activities, could be highlighted through a series of regional actions which should emphasize the benefits of having a capable marine science and observations community with related adequate institutions for national and regional sustainable development. A special conference on TEMA, capacity building and public awareness could perhaps be organized at a high-level, taking advantage of EXPO '98 during that period in Lisbon.
- (iv) Public awareness can be created through several actions including the possible use of major efforts such as the Smithsonian Exhibition "Ocean Planet"; through visits of research vessels related to specific international projects such as WOCE; recalling historic actions such as Vasco da Gama's expedition; through a cruise or special voyage; open lectures at national events. A Conference on The History of Oceanography could be organized.
- (v) As a major awareness creation action, IOC could prepare an Ocean Charter, as a follow-up to UNCLOS and UNCED, building on earlier statements including the Copenhagen and Lisbon Declarations. IOC Officers, at their intersessional meeting, February 1995, agreed on this, and the First Vice-Chair is preparing an initial draft.
- (vi) The IOC regional bodies should be used as major mechanisms for awareness creation and preparation of related activities, hence the need to have representations of these bodies on the IOC 1998 Preparatory Task Team.
- (vii) Intersectoral co-operation could be highlighted through joint activities; e.g., a joint seminar between the IAEA Marine Environment Laboratory, IOC and UNEP at the laboratory in Monaco, demonstrating inter-agency co-operation; joint publications; perhaps agreement on a joint coverage of ocean-related publications during 1998. These activities should aim at illustrating the need for inter-sectorial dialogue and co-operation with respect to most ocean matters.
- (viii) EXPO '98 provides special possibilities for public awareness creation and specific actions in this context. IOC should consider the possibility of contributing to a pavilion, possibly having one in co-operation with its major partners, including ICSU.

A TEMA-dedicated conference could be considered also emphasizing the theme of Ocean and Society on the Threshold of the Third Millennium. Possibilities of visits of research vessels should be investigated and international programmes could be invited to consider this. If possible, a special research programme could be initiated to contribute to EXPO '98, e.g., related to UNCLOS by emphasizing studies of the deep ocean floor. A dedicated WOCE Symposium could perhaps be organized. Inter-agency co-operation could prepare a special brochure of ICSPRO agencies, including IOC, to illustrate ocean activities in the UN system. This may also relate to the implementation of UNCLOS. A special effort could be devoted to stimulate the implementation of the TEMA-related resolution adopted at the closure of the preparatory conference for UNCLOS.

Further public awareness actions could involve presentations in various widely used services, e.g., airlines, airports, tourism bureaux, broadcasting and television networks. All this, however, will require considerable work for the proper preparation of materials. Special video films may be prepared focussing perhaps on UNCLOS. In this

context one could involve and refer to the underwater heritage as part of our cultural heritage, which also requires oceanography for proper management.

4. FINANCIAL CONSIDERATIONS

In order to achieve maximum cost-benefit, the Ocean Year action should be part of the IOC normal programme actions, as far as possible. However, some additional and specific funds will be required, and these should be mainly extrabudgetary contributions from Member States or donor foundations. Member States should also use the UNESCO Participation Programme to the fullest extent possible, as a vehicle for obtaining support. Inter-agency co-operation and a commitment to EXPO '98 will require that funds are secured and are available. Hence, it is necessary for the Assembly to solicit support from various sources, and provide an indication of the size of the financial effort that IOC should make as an instruction and guidance to the Secretary. It is noted that a certain amount is being proposed in the draft Programme and Budget (Document IOC-XVIII/2 Annex 7).

5. ACTION REQUESTED OF THE ASSEMBLY

The Assembly is requested to review the framework mechanisms and proposals or suggestions made above, with a view to approving or amending them as required, provide further ideas and proposals, advise Member States and instruct the Executive Secretary accordingly.

APPENDIX

DRAFT TERMS OF REFERENCE FOR AN IOC 1998 PREPARATORY TASK TEAM

The Preparatory Task Team under the Chairperson of IOC should:

- (i) evaluate the benefits of contributions of IOC to the Ocean Year for IOC goals and mandate in relation to the aims of the Ocean Year, and propose, or identify actions of IOC programmes accordingly;
- (ii) identify specific actions for the Ocean Year and propose the means for their organization, including identification of the required resources;
- (iii) prepare and provide to the Twenty-ninth Session of the Executive Council (1996) a plan with specific activities and budget, for IOC contributions to Ocean Year and EXPO '98;
- (iv) help organize relevant implementation in 1997;
- (v) present an up-dated plan with specific activities and related resource requirements for IOC contributions to Ocean Year and EXPO '98 to the Nineteenth Session of the Assembly, 1997.

ANNEX VIII

LIST OF DOCUMENTS *

Document Code	Title
IOC-XVIII/1	Agenda
IOC-XVIII/1 Add. prov. rev. 2	Revised Provisional Timetable
IOC-XVIII/2	Annotated Provisional Agenda (Expanded)
IOC-XVIII/2 Annex 1	IOC Comprehensive Action Plan and Arguments for 3% Subvention Level Revised Rules of Procedure
IOC-XVIII/2 Annex 2	
IOC-XVIII/2 Annex 3	Draft IOC Medium-term Strategy
IOC-XVIII/2 Annex 4	Proposed Framework for IOC Planning and Activities with respect to 1998 International Year of the Ocean
IOC-XVIII/2 Annex 5	Report on Climate-related Issues with respect to IOC in relation to WCP, UN-FCCC and IPCC
IOC-XVIII/2 Annex 6	Draft TEMA Strategy in response to UNCLOS and UNCED
IOC-XVIII/2 Annex 7	Proposal on the Draft Programme and Budget 1996-1997 and the related General Conference Draft Resolution
IOC-XVIII/2 Annex 8	Report on Implementation of Points 1-3 and 5 of Part II of Annex to Resolution XVII-20
IOC-XVIII/2 Annex 9	Executive Summary of the IOC-NOAA ad hoc Consultation on Marine Biodiversity
IOC-XVIII/2 Appendix 1	Support of the Joint IOC-IHO Ocean Mapping Programme
IOC-XVIII/3	Summary Report (published in the UNESCO Main Series Documents, as SC/MD/106)
IOC-XVIII/4	List of Documents
IOC-XVIII/5	List of Participants
IOC-XVIII/6	Draft Biennial Report of the Commission, 1993-1994
IOC-XVIII/7	Status Report on the IOC Programme and Budget

**NB. This list is for reference only. No stocks of these documents are maintained,
except for the Summary Report.**

REPORTS OF IOC SUBSIDIARY BODIES REQUIRING ACTION

IOC/STECCO-II/3	Report on the Second Meeting of Scientific and Technical Experts on Oceans and Climate
IOC-WMO/IWP-III/3S	Executive Summary of the Third Session of the IOC-WMO Intergovernmental WOCE Panel
IOC-FAO/IPHAB-III/3S	Executive Summary of the Third Session of the Joint IOC-FAO Panel on Harmful Algal Blooms
IOC-WMO-UNEP/I-GOOS-II/3S	Executive Summary of the Second Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System
IOC/GE-GLOSS-IV/3	Summary Report of the Fourth Session of the IOC Group of Experts on the Global Sea-level Observing System
IOCEA-IV/3S	Executive Summary of the Fourth Session of the IOC Regional Committee for the Central Eastern Atlantic
IOC/IGM-BS/3S	Executive Summary of the Intergovernmental Meeting on Co-operation in Marine Sciences and Services in the Black Sea

INFORMATION AND OTHER REFERENCE DOCUMENTS

SC/MD/101	Summary Report of the Seventeenth Session of the IOC Assembly
IOC/EC-XXVII/3	Summary Report of the Twenty-seventh Session of the IOC Executive Council
IOC Annual Report No.1	IOC Annual Report, 1994
IOC/INF-567 rev.15	List of IOC Depository Centres for Publications and ASFIS Centres
IOC/INF-620 rev. 3	Technical Arrangements for the Elections of Officers of the Commission and Other Members of the Executive Council
IOC/INF-700 rev.9	List of IOC Publications in stock
IOC/INF-985	Summaries of the Bruun Memorial Lectures given at the Eighteenth Session of the Assembly
IOC/INF-986	Information and Guidelines for Participants in the Eighteenth Session of the IOC Assembly
IOC/INF-987	Report on Coastal Zone Studies and Co-ordination on Coastal Zone Activities
IOC/INF-987 Add.	Training, Education and Mutual Assistance: Proposal for an Integrated Coastal Management Training Programme of the IOC
IOC/INF-988	Report of the IOC Consultative Group on Ocean Mapping to the Eighteenth Session of the IOC Assembly
IOC/INF-989	Report of the Second Session of the ACC Sub-Committee on Oceans and Coastal Areas
IOC/INF-990	Report of the <i>ad hoc</i> Working Group on IOC Responsibilities and Actions in Relation to UNCLOS

IOC/INF-991	Report of the <i>ad hoc</i> Consultation of Experts on OSNLR
IOC/INF-992	GOOS Status Report for 1994
IOC/INF-993	Draft Evaluation Report on IOCARIBE
IOC/INF-999	Summary Report of the TEMA Strategy <i>ad hoc</i> meeting
IOC/INF-1007	Summary Report of the IOC/OSNLR <i>ad hoc</i> Consultation on UNCLOS
146 EX/20 & Add	New Arrangements for the Intergovernmental Oceanographic Commission
146 EX/Decisions (Extracts)	Decisions adopted by the Executive Board at its 146th Session 5.3.1: New Arrangements for the IOC
IOC Workshop Report No.105	BORDOMER 95 - Report of the Conference on Coastal Change
----	DBCP Annual Report 1994
IOC-XVIII/Inf.1	The Climate Agenda
IOC-XVIII/Inf.2	Observations and Experiences of Selected TEMA Activities during 1984-1994
IOC-XVIII/Inf.3	Draft Summary Report of the Second International Conference on Oceanography - Lisbon'94 - Towards Sustainable Use of Oceans and Coastal Seas

**ANNEX IX/ANNEXE IX/ANEXO IX/
ПРИЛОЖЕНИЕ IX**

**LIST OF PARTICIPANTS/LISTE DES PARTICIPANTS/
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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.

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ANNEX X

LIST OF ACRONYMS

ACC	Administrative Committee on Co-ordination
ACOPS	Advisory Committee on the Protection of the Sea
ACSYS	Arctic Climate System Study
AOSB	Arctic Ocean Science Board
AOSIS	Association of Small Island States
ASFA	Aquatic Sciences and Fisheries Abstracts
ASOS	Automated Seismological Observation System
BATHY	Bathymograph Report
BT	Bathymograph
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCOP	Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas
CD-ROM	Compact Disc with a Read-Only Memory
CEA	Central Eastern Atlantic
CEC	Commission of the European Communities
CEOS	Committee on Earth Observing Satellites
CEPPOL	Joint IOC-UNEP Marine Pollution Assessment and Control Programme for the Wider Caribbean Region
CIDA	Canadian International Development Agency
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLCS	Commission on the Limits of the Continental Shelf
CLIVAR	Climate Variability and Predictability
CMM	Centre météorologique mondial
COASTS	Programme on Coastal Ocean Advanced Science and Technology Study
COMARAF	Regional Project for Research and Training on Coastal Marine Systems in Africa
COMSBLACK	Co-operative Marine Science Programme for the Black Sea
COP	Conference of Parties
CPPS	Permanent Commission for the South Pacific
CSD	Commission on Sustainable Development
CTBT	Comprehensive Test-Ban Treaty
CZSI	Coastal Zones and Small Islands
DAC	Data Assembly Centre
DANIDA	Danish Agency for International Development
DBCP	Data Buoy Co-operation Panel
DOALOS	Division for Ocean Affairs and the Law of the Sea (UN)
DOSS	<i>Ad hoc</i> Study Group on IOC Development, Operations, Structure and Statutes
ECOR	Engineering Committee on Oceanic Resources
EEZ	Exclusive Economic Zone
EGOS	European Group on Ocean Stations
EL NIÑO	Meteorological and Oceanographic Phenomenon off the West Coast of South America
ENSO	El Niño and the Southern Oscillation (An Ocean/Atmosphere Interaction Study) (USA)
EROS-2000	European River-Ocean Systems Programme
ETI	Expert-center for Taxonomic Identification (The Netherlands)
EuroGLOSS	European Programme for the Global Sea-Level Observing System
EuroGOOS	European Programme for the Global Ocean Observing System
EUROMED.NET	European-Mediterranean Network
FAO	Food and Agriculture Organization of the United Nations
FCCC	Framework Convention on Climate Change
FTP	(see Peter P)
GAPA	International Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
GCOS	Global Climate Observing System
GEBCO	General Bathymetric Chart of the Oceans
GEEP	Group of Experts on Effects of Pollution
GEF	Global Environment Facility

GE-MIM	Group of Experts on Marine Information Management
GESAMP	IMO-FAO-UNESCO-WMO-WHO-IAEA-UN-UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GIPME	Global Investigation of Pollution in the Marine Environment
GIS	Geographic Information System
GLOBEC	Global Ocean Ecosystem Dynamics
GLOSS	Global Sea Level Observing System
GODAR	Global Oceanographic Data Archaeology and Rescue Project
GOOS	Global Ocean Observing System
GPS	Global Positioning System
GTOS	Global Terrestrial Observing System
GTS	Guinean Trawling Survey
GTSP	Global Temperature-Salinity Pilot Project
HAB	Harmful Algal Blooms
HOTO	Health of the Oceans
IABP	International Arctic Buoy Programme
IACSD	Inter-Agency Committee on Sustainable Development
IAEA	International Atomic Energy Agency
IAPSO	International Association for the Physical Sciences of the Ocean
IAPP	International Arctic Polynia Programme
IAPSO	International Association for the Physical Sciences of the Ocean
IBCM	International Bathymetric Chart of the Mediterranean and its Geological/Geophysical Series
ICAM	Integrated Coastal Areas Management (IOC/GIPME)
ICG	International Co-ordination Group
ICES	International Council for the Exploration of the Sea
ICRI	International Coral Reef Initiative
ICSEM	International Commission for the Scientific Exploration of the Mediterranean Sea
ICSPRO	Intersecretariat Committee on Scientific Programmes Related to Oceanography
ICSU	International Council of Scientific Unions
IDNDR	International Decade for Natural Disaster Reduction (1990-1999)
IGBP	International Geosphere-Biosphere Programme - A Study of Global Change
IGCP	International Correlation Programme
I-GOOS	IOC-WMO-UNEP Committee for the Global Ocean Observing System
IGOSS	Integrated Global Ocean Services System
IGS	International GPS Service
IHO	International Hydrographic Organization
IHP	International Hydrological Programme
IIEP	International Institute of Educational Planning
IMO	International Maritime Organization
IMS	International Marine Science Newsletter
IOC	Intergovernmental Oceanographic Commission (of UNESCO)
IOCARIBE	IOC Sub-Commission for the Caribbean and Adjacent Regions
IOCEA	IOC Regional Committee for the Central Eastern Atlantic
IOCINCWIO	IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean
IOCINDIO	IOC Regional Committee for the Central Indian Ocean
IOCSOC	IOC Regional Committee for the Southern Ocean
IODE	International Oceanographic Data and Information Exchange
IOI	International Ocean Institute
IOMAC	Organization for Indian Ocean Marine Affairs Co-operation
IOMC	IGOSS Operations Management Committee
IPAB	International Programme for Antarctic Buoys
IPB	IGOSS Products Bulletin
IPCC	Intergovernmental Panel on Climate Change
IPHAB	Intergovernmental Panel on Harmful Algal Blooms
IPMAR-DID	Portuguese Institute of Marine Research - Division of Information and Documentation
ISABP	International South Atlantic Buoy Programme

ITIC	International Tsunami Information Centre
ITSU	<i>See:</i> International Co-ordination Group for the Tsunami Warning System in the Pacific
IUBS	International Union of Biological Sciences
IUMS	International Union of Microbiological Societies
IWC	International Whaling Commission
IWP	IOC-WMO Intergovernmental WOCE Panel
JGOFS	Joint Global Ocean Flux Study
J-GOOS	Joint Scientific and Technical Committee for the Global Ocean Observing System
JSTC	Joint Scientific and Technical Committee
LBS	Land Based Sources
LME	Large Marine Ecosystems
LOICZ	Land-Ocean Interaction in the Coastal Zone
MAB	Programme on Man and the Biosphere
MAP	Mediterranean Action Plan
MARPOL73/78	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 relating thereto
MARPOLMON	Marine Pollution Monitoring System
MAST	Specific Research and Technological Development Programme in the field of Marine Science and Technology
MCBs	Marine Catchment Basins
MedGLOSS	Mediterranean Programme for the Global Sea-Level Sea-Level Observing System
MedGOOS	Mediterranean Programme for the Global Ocean Observing System
MEDS	Marine Environmental Data Service (Canada)
MEDI	Marine Environmental Data Information Referral System
MEL	Marine Environmental Laboratory
MESL	Marine Environmental Studies Laboratory
MIM	Group of Experts on Marine Information Management
MOST	Management of Social Transformations
MOU	Memorandum of Understanding
MRI	Marine Science Related Issues (UNESCO)
NATO	North Atlantic Treaty Organization
NearGOOS	North-East Asian Regional GOOS
NGO	Non Governmental Organization
NOAA	National Oceanic and Atmospheric Administration (USA)
NODC	National Ocean Data Centre
NRCT	National Research Council of Thailand
OECD	Organization for Economic Co-operation and Development
OM	Ocean Mapping
OOPC	Oceans Observations Panel for Climate
OOSDP	Ocean Observing System Development Panel
ORSTOM	Institut français de recherche scientifique pour le développement en coopération
OSLR	Ocean Science and Living Resources
OSNLR	Ocean Science and Non-Living Resources
QCAS	Quality Control of Automated Systems
PERSGA	Red Sea and Gulf of Aden Environment Programme
PICES	North Pacific Marine Science Organization
PIPICO	Panel on International Programs and International Co-operation in Ocean Affairs (USA)
POEM-BC	Physical Oceanography of the Eastern Mediterranean
PRIMO	International Research Programme in the Western Mediterranean (France)
PTWC	Pacific Tsunami Warning Center (USA)
RECOSCIX-WIO	Regional Co-operation in Scientific Information Exchange in the Western Indian Ocean
ROPME	Regional Organization for the Protection of the Marine Environment
RNODC	Responsible National Oceanographic Data Centre
SAREC	Swedish Agency for Research Co-operation with Developing Countries
SBSTA	Subsidiary Body for Science and Technical Advice
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCAR	Scientific Committee on Antarctic Research

SCOR	Scientific Committee on Oceanic Research
SEFC	Southeast Fisheries Centre
SEM	South and Eastern Mediterranean
SIDS	Small Island Developing States
SOC	Specialized Oceanographic Centre
SOOP	Ship-of-Opportunity Programme
SOOPIP	Ship-of-Opportunity Programme Implementation Programme
SOPAC	South Pacific Applied Geoscience Commission
SSC	Strategy Sub-Committee
START	Global Change System for Analysis, Research and Training
SVP	WOCE Surface Velocity Programme
TEMA	Training, Education and Mutual Assistance programme
TIME	Tsunami Inundation Modelling Exchange Project
TOGA	Tropical Atmosphere and Global Atmosphere
TREDMAR	Marine Science Training and Education Programme
TREMORS	Tsunami Risk Evaluation through Seismic Movement from Real-time System
TT/QCAS	Task Team on Quality Control of Automated Systems
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UN/DOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UK-EDMED	United Kingdom contribution to the European Directory of Marine Environmental Data
UNIDO	United Nations Industrial Development Organization
UNU	United Nations University
WCP	World Climate Programme
WCRP	World Climate Research Programme
WESTPAC	IOC Sub-Commission for the Western Pacific
WHP	WOCE Hydrographic Programme
WIO	Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment
WWW	World-Wide Web
XBT	Expendable Bathythermographs

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