**Intergovernmental Oceanographic Commission**
*Reports of Governing and Major Subsidiary Bodies*

# IOC-UNEP-IMO Committee for the Global Investigation of Pollution in the Marine Environment

## Eighth Session

San José, Costa Rica, 18-22 April 1994

**UNESCO**

In this Series — *Languages*

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

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| 21. | Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean | E, F |
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| 28. | Third Session of the Sub-Commission for the Caribbean and Adjacent Regions | E, S |
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## Eighth Session

San José, Costa Rica, 18-22 April 1994

**UNESCO**

IOC-UNEP-IMO/GIPME-VIII/3
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## 1. OPENING

1 The Chairman of the Committee for GIPME, Dr. Neil Andersen, called the meeting to order at 9:30 a.m. on 18 April 1994 in the Conference Center of the Herradura Hotel, San Jose, Costa Rica, in the presence of the Costa Rican Minister of Science and Technology who is also in charge of Natural Resources, Dr. Orlando Morales. A list of participants is attached as Annex III.

2 The IOC Chairman and Chief host Prof. Manuel Murillo welcomed the delegates to Costa Rica. He stated that GIPME is a core programme of IOC in view of its principal objective of ensuring the health of the oceans which constitute approximately two-thirds of the earth's surface and on which humanity is increasingly dependent for food, energy, and mineral resources. In this respect he was pleased with the level of collaboration between the U.N. Agencies on marine environmental protection as manifested in the cosponsorship of GIPME by UNEP and IMO and at the Expert Groups level also by IAEA. He highlighted several activities of GIPME that have contributed to the protection of the coastal and marine environments in various regions, citing, as an example, the assistance given to the ROPME Sea Area in the aftermath of the Gulf war which formed the basis for ongoing reconstruction and rehabilitation of the coastal and marine environment of the region.

3 The IOC Senior Assistant Secretary, Dr. Chidi Ibe, conveyed to the meeting fraternal greetings from the IOC Secretary Dr. Kullenberg who was unavoidably absent. He expressed the deep appreciation of the IOC Secretariat for the kind offer of the Government of Costa Rica to host this meeting, adding that the presence of the Costa Rican Minister of Science and Technology and Natural Resources, Dr. Orlando Morales, was added proof to the unflinching support that IOC has always received from Costa Rica. Dr. Ibe paid tribute to the IOC Chairman, Prof. Manuel Murillo, for his resourcefulness and devotion to the affairs of the Commission and renewed the assurances of loyalty of the IOC Secretariat to his leadership.

4 Dr. Bent Nielsen, Senior Programme Officer in UNEP's OCA/PAC, welcomed the members of the GIPME Committee to the Eighth Session of GIPME on behalf of the Executive Director of UNEP, Ms. Elizabeth Dowdeswell.

5 Dr. Nielsen emphasized that UNEP was undergoing transformation under the new leadership of Ms. Dowdeswell. The whole of 1994 is expected to be a year of transition and the new UNEP which will emerge will experience much closer integration of activities between Units in UNEP, such as OCA/PAC, Law, Earth Watch, water, Terrestrial ecosystem, etc.

6 He stated that much more emphasis will be placed on regional delivery and transparency in the flow of support to various activities. Within OCA/PAC the Executive Director of UNEP has allocated resources to deal with four broad environmental issues in 1994/1995. These are: (i) Integrated Coastal Areas Management (ICAM); (ii) Protection of the marine and coastal environment from land-based activities; (iii) Sea Level Rise; and (iv) living marine resources.

7 The OCA/PAC budget allocation for 1994/95 has been divided over 14 regions. No allocations have been earmarked for global activities such as GIPME, GOOS, GESAMP, etc.

8 Dr. Nielsen added that, in developing the GIPME Action Plan for 1994-97, it is important for planned activities to respond to perceived regional needs and issues approved for development in 1994-95 in order to gain support from UNEP.

9 One issue of particular importance to UNEP where GIPME could play a significant role, would be in the follow-up to Governing Council decision 17/20 of 21 May 1993 on development of an action programme for protection of the marine environment from land-based activities to be adopted in Washington DC, in November 1995. The second meeting which is part of the preparatory process focusing on the 1985 Montreal Guidelines is to take place from 6-10 June 1994 in Montreal, Canada, the first having been convened in Nairobi, 6-10 December 1993.

10 The representative of UNEP concluded by expressing the hope for a fruitful meeting.

11 The Representative of the IMO Secretary General and IMO's Regional Representative for Ports and Harbors in the Caribbean Region, Mr. Jerry Barnett, stated that IMO's decision, in November 1992, to co-sponsor GIPME represented an important milestone in the regional and global efforts in pollution prevention, abatement and control. He stated that IMO, within its budgetary constraints, would endeavour to live up to its commitments to GIPME.

12 The Honourable Minister for Science and Technology and Natural Resources of Costa Rica, who declared the meeting open, conveyed to the delegates and co-sponsoring Agencies, the delight of his Government in hosting the Eighth Session of GIPME. He stated that as a country that takes pride in the conservation and rational exploitation of its natural resources, Costa Rica deeply appreciates the relevance and importance of a programme like GIPME. He announced that only the previous week, the State had set up a Committee on Sustainable Development to guide its actions in this regard. He expressed the hope that this Committee as well as other relevant national agencies will benefit from the interaction with and advice from GIPME. Dr. Morales called on industrialised and developed countries who, by implication, generate much of the pollution, to provide additional resources for global environmental management and protection. He stressed that the Government of Costa Rica is eager to learn of the decisions and recommendations that would emerge from this Meeting and wished the delegates fruitful deliberations.

## 2. ADMINISTRATIVE ARRANGEMENTS

### 2.1. ADOPTION OF THE AGENDA

13 The Committee adopted the Provisional Agenda which had been circulated prior to the meeting as the Agenda for the meeting without amendments (Annex 1).

### 2.2 DESIGNATION OF RAPPORTEURS

14 Dr. Trevor Ward (Australia) and Dr. M.E Jacinto (Peru) were designated as the English and Spanish speaking rapporteurs, respectively.

### 2.3 CONDUCT OF THE SESSION, TIME TABLE AND DOCUMENTATION

15 The Joint Secretariat introduced the Provisional Timetable and announced that the Session would work mainly in plenary but that Drafting Groups would be set up as and when deemed necessary to assist with draft resolutions and recommendations for the consideration of the Meeting.

## 3. REPORT ON INTERSESSIONAL ACTIVITIES

16 The Joint Secretariat introduced this agenda item by referring to Document IOC-UNEP-IMO/GIPME-VIII/6 entitled "Report of International Activities 1991-1993", which covers the Second GIPME Action Plan period.

17 It pointed to two important policy level developments during the intersessional period. One was that UNEP, which had previously co-sponsored the three GIPME Groups of Experts became a co-sponsor of the full GIPME Programme by Decision 16/26A of UNEP Governing Council (Nairobi, May 1991), in response to Resolution XXV/5 of the IOC Assembly (Paris, July 1989). The other was the decision of the 69th Session of the IMO Council (London, 16-20 November 1992), for IMO, which had previously co-sponsored GEEP, one of the GIPME Groups of Experts, to become a full co-sponsor of the full GIPME programme.

18 The Secretariat noted that already the co-sponsorship had yielded dividends in bringing additional administrative and financial capacity to GIPME and the ability of the programme to meaningfully pursue the goals and objectives for which GIPME was established. He stressed that for the member states of the co-sponsoring agencies, this signals concerted action rather than competition as well as indicating a more productive use of dwindling financial resources.

19 The implementation of the Second GIPME Action Plan was a two tier undertaking:

(i) At the global level, the activities of the GIPME Groups of Experts - GEMSI, GEEP and GESREM provided the main thrust of GIPME actions. These Groups concern themselves with development, testing and refinement of methodologies, intercalibration and intercomparison exercises, training and the promotion of production and use of standards and reference materials. Giant strides were taken in fulfillment of these objectives, the details of which will be given under Agenda Item 4.2.

(ii) At the regional level, the operational Marine Pollution Monitoring System (MARPOLMON) has provided the hub of GIPME activities. The concentration has been on monitoring activities carried out in concert with IOC and UNEP Regional Subsidiary Bodies and designed in such a way as to lead logically to assessments of the state of the marine environment in regional seas areas. GIPME has been active in 11 UNEP Regional Seas Areas, more so in some than in others, as well as in the current development of the Action Plans for the Black Sea, North West Pacific and South West Atlantic regions.

Details of these activities will be examined under Agenda Item 4.3.

*20* The Secretariat then informed the meeting that the Principal Officers of GIPME Meeting in London, 30-June - 2 July 1993, in conjunction with the IOC-UNEP-IMO Intersecretariat Consultation on GIPME, 29 June 1993, had concluded that nearly all of the objectives and targets under the second GIPME Action Plan (1991-93) had been achieved and, in many cases, exceeded. That meeting also agreed that the marine pollution assessment and control related Resolutions and Recommendations made by the Governing Bodies of IOC and UNEP and, in some measure IMO, had been implemented to a very large extent. This success provided the confidence for the proposal to design and formulate a Third GIPME Action Plan (1994-97) to be considered during the meeting.

*21* During the intersessional period GIPME, maintained and in some cases expanded its collaboration with several UN organizations like IAEA, FAO, WMO, and non UN Organizations like ROPME, IUCN, ICES, etc, as well as with many programmes like JGOFS, LOICZ, GLOBEC, etc, Details of these collaborations are given under appropriate Agenda Items.

*22* Finally, the Secretariat pointed out that whereas most of the projects and activities undertaken within GIPME are planned and therefore of a more routine nature, the programme demonstrated over the intersessional period its ability to react appropriately to emergency situations.

*23* One was in the case of the ROPME Sea Area where GIPME's timely reaction to the Gulf War related oil spill and general contamination in that region resulted in the formulation of the Integrated Project Plan, a joint ROPME-IOC Project executed in co-operation with UNEP and which still forms the basis of efforts in the region for the rehabilitation and reconstruction of the war battered Sea Area. Specifics of this Plan which have included three large scale cruises, will be given in a planned presentation by H. E. the Executive Secretary of ROPME.

*24* Another was the case of the KATINA P. Oil Spill off the coast of Mozambique in Eastern Africa where GIPME's rapid assessment following the oil spill led to advice for quick remedial actions as well as to ongoing long term actions to ameliorate the impact of the oil spill on the fragile ecosystems of the Mozambique coast and to build institutional structures to sustain such efforts.

*25* Finally, the Secretariat thanked Member States of the sponsoring organizations for their support of the GIPME Programme but even more so, the individual scientists who have given of their time and effort in ensuring the successful implementation of the intersessional activities and in particular the Second GIPME Action Plan.

## 4. PROGRAMME MATTERS

### 4.1 GIPME GROUPS OF EXPERTS

#### 4.1.1. GEMSI (Groups of Experts on Methods, Standards and Intercalibration).

26 The Vice-Chairman of GEMSI, Dr. J. Michael Bewers summarized the activities of GEMSI since GIPME-VII emphasizing the conclusions of the most recent meeting of GEMSI Core Group members held in Bermuda in 1993 (Document IOC/INF-955). He referred to GEMSI's previous evaluations of training workshops on sampling and analytical methodologies and its desire to improve both communication with regional activities and the focussing of workshops on specific regional requirements. Steps have been taken to ensure more direct liaison with the various Regional Seas and MARPOLMON regional activities.

27 At the most recent GEMSI core group meeting, a wide variety of topics were discussed in relation to the needs for further GEMSI activities. He stressed the trend towards increased focus on the needs of the various regional activities within the GIPME/MARPOLMON Programmes. It was noted in this connection that several activities of GEMSI involved cooperation with either GEEP or GESREM and only where the proposed GEMSI activities were sole or primary GEMSI initiatives was specific reference made. The cooperative activities with GEEP and GESREM would be covered by presentations on these Experts Groups activities. Furthermore, the involvement of GEMSI in the deep-ocean baseline study of the Atlantic would be dealt with under a separate agenda item (4.2).

28 Topics discussed at the last GEMSI Core Group Meeting in 1993 included: preparation, revision and review of reference manuals; the publication of JGOFS methods protocols by IOC and associated training workshops; potential interactions with the LOICZ Programme as a medium for improving knowledge of river discharges of contaminants and mass-balance construction; the design of the Strategic Plan for the Health of the Ocean (HOTO) Module of GOOS; progress in the implementation of the International Mussel Watch Programme; the urgent need for standardized approaches to the establishment of sediment quality criteria; eutrophication and its linkages to nutrient fluxes and harmful algal blooms; regional programmes and activities with particular reference to the Black Sea Region; requirements for intercalibration; the need for the preparation of regional marine assessments; the Open-Ocean Baseline Study; and requirements for analytical methodology development, testing, dissemination and training. The deliberations of GEMSI on all these topics are reflected in the Bermuda Core Group meeting report. The only change to the proposals made by GEMSI in this report is that the study of the Sea of Marmara has been deferred as communication with the NATO Black Sea Programme has established that flux studies in the Sea of Marmara will be undertaken under this programme.

29 The US Delegate drew the attention of the meeting to the recently issued IOC Manual and Guides no. 28 which apparently had been published outside the review process established within GIPME. He pointed out that there was a strong potential for serious problems to arise if such actions were allowed to proceed unchecked. Namely, it could be that a manual would in fact be at odds with procedures developed, reviewed and published within GIPME. If this should occur, the credibility of not only GIPME, but IOC, would be seriously damaged. The Committee agreed with this concern and the Secretariat was requested to bring this to the attention of the Secretary IOC for appropriate corrective action.

#### 4.1.2. GEEP (Group of Experts on Effects of Pollutants)

30 The Chairman, Dr. John Gray, reported that in the intersessional period GEEP had first reviewed its past activities. GEEP has organised 3 international workshops (Oslo, Bermuda, and Bremerhaven) where biological effects techniques have been tested and intercalibrated. The results are published in the primary literature as workshop volumes and thus quality has been assured. In addition, GEEP has undertaken many teaching workshops and produced manuals of methods.

31 In introducing the new workplan for 1994-1997, Dr. Gray emphasized that the new role for GEEP was designed to achieve a better integration with and to be more responsive to regional issues.

32 Membership would be of 5-6 core members with up to 6 non core members drawn from the regions. The regional members of GEEP would have the responsibility of bringing regional issues to the attention of GEEP and informing the regions of GEEP's ongoing activities.

33 GEEP recognized that science was rarely properly integrated in management plans. GEEP hopes, as its primary aim, to demonstrate how science can be integrated into management plans at all levels. GEEP requests that regional problems related to biological effects issues be brought to their attention. Selection criteria for projects have been derived.

34 GEEP will keep under review new developments in biological effects monitoring techniques and periodic intercalibration workshops will be needed.

35 A key issue of relevance to collaboration with GEMSI is the need to address sediment quality criteria. Since harbour development is a priority of the World Bank, increasing attention is being focussed on contaminated harbour assessments and how to assess their potential effects.

36 GEEP has played an important role in development of the Strategic Plan of the HOTO Module of GOOS and will continue to do so.

37 Likewise GEEP's expertise is available to help in making regional assessments in relation to the follow-up to UNCED.

38 The GEEP workplan is ambitious and GEEP is aware that it would need to seek funds outside its sponsoring agencies if it is to complete it workplan.

4.1.3. Group of Experts on Standards and Reference Materials (GESREM)

39 Dr. Alan Walton, Vice-Chairman of GESREM, said that GESREM represents the IOC-UNEP-IAEA international mechanism through which relevant standards and reference materials (largely of a marine chemical nature) can be supplied to those international programmes which have a continuous need for such materials. The Group held its first meeting in 1987, its second in 1990 and its third in 1992, the latter in Brussels, Belgium. Its membership is composed of representatives of the world's major producers of reference materials located in Europe, North America and Asia and experts drawn from participants in major national and international oceanographic programmes such as the Regional Seas Programme of UNEP, IOC/MARPOLMON activities and the IAEA's Marine Environmental Studies Laboratory activities. From time to time the Group has benefitted from the contributions of the ISO, the European Community Bureau of Common Reference, the U.S. E.P.A and members of the private sector such as Ocean Scientific International Limited. Dr. Walton mentioned in particular the work of the National Institute of Standards and Technology (US), Canada's National Research Council and US NOAA as major contributors to any progress the Group may have made over the past few years.

40 Dr. Walton noted that the major achievements of the Group are cited in the report of the Third Session of GESREM, but went on to highlight the production, under the aegis of GESREM of two important Reference Materials, GESREM 1 and GESREM 2.

41 In the case of GESREM 1 some 2000 X 25 gm samples of freeze dried mussels will be available in due course with a suite of certified TM concentrations and some information on several organic pollutants. Overall responsibility for the processing and certification of this material is in the hands of NIST, NRC, IAEA with help from CBNM (Belgium) and NIES (Japan).

42 GESREM 2, unfortunately did not attain the same degree of success as GESREM 1. It is primarily designed as a reference material for trace organics, chlorinated hydrocarbon pesticides and PCBS at relatively high levels, but preliminary analytical results suggest that the pesticide levels are somewhat lower than hoped for. Some 50 samples (approx. 7g each) have been

used in the IMW programme and some 5 kg remain to be certified and bottled by national laboratories. The same organisations are again involved in these activities. Plans have been made to secure a tissue sample in much larger quantities than GESREM 2 for such a tissue material for organics remains a high priority.

43 He added that the majority of these samples are destined to be used in the laboratories of those developing countries participating in international programmes - laboratories which may not have the means to purchase such materials on the open market.

44 Dr. Walton also mentioned the catalogue "Standard and Reference Materials for Marine Science" edited by Dr. Adriana Cantillo and a second book entitled "Use of Standards and Reference Materials in the measurement of chlorinated hydrocarbon residues", written and edited by Dr. Jerry L. Wade of Texas A.& M. University and Dr. Adriana Y. Cantillo of NOAA, as additional products of GESREM Members. The Committee requested the Chairman of GIPME to send a letter of appreciation to Ms. Cantillo for her valuable contributions to the GESREM activities.

45 Since the 1992 meeting of GESREM significant progress has been made in another issue recognized by marine scientists as being of critical importance, namely nutrients. For many years the community has sought the development of genuine reference materials for the nutrients-silicate, phosphate, nitrate/nitrite and ammonia but has had to be satisfied with aqueous solutions of the first four (prepared by CSK in Japan). IFREMER and Ocean Scientific International have in the past couple of years pushed back the frontiers somewhat with some new marine materials of considerable use. At the last meeting of a limited group of GESREM members held in Miami in December 1993 the Group learned that a stable sea water material suitable for NO3/NO2, SiO3 and PO4 has been successfully prepared by NRC scientists in Ottawa. To date (approximately 1/2 years) the material has been shown to be stable and barring any unforeseen developments, a new standard is likely to be on the market early 1995.

46 In addition, the Group has identified the need for pigment reference materials as well as materials for various biotoxins - a need which grows in importance almost daily as more and more incidences of algal toxin poisoning are reported.

47 Finally, Dr. Walton cited the QUASIMEME Programme of the European Community emphasizing that this particular Quality Control project amongst European Laboratories is a feature that GESREM would repeatedly advocate for inclusion in all regional and international marine pollution programmes.

4.2 OTHER GLOBAL ACTIVITIES

4.2.1 International Mussel Watch Project

48 The Secretariat referred to Document IOC-UNEP-IMO GIPME-VIII/ Inf. 4 and traced the genesis of the International Mussel Watch Project from 1986 when it was officially launched by IOC and UNEP as a UN approved project aimed primarily at the tropics and Southern Hemisphere to complement work along similar lines begun in the 1960's and 1970's in the U.S.A. and some European countries.

49 It was, however, realised from the onset that the simultaneous implementation of a worldwide full programme was not a practical proposition. Thus a phased approach was adopted and the Wider Caribbean region was chosen for the implementation of the First Phase with financial and logistic support from US NOAA. Following a preparatory meeting and training workshop for scientists from participating laboratories held in Costa Rica in 1991, the field sampling phase started. All participating laboratories received split samples and samples from all sites were analysed at two reference laboratories, the IAEA Laboratory in Monaco and the Geochemical Laboratory at Texas A & M University.

50 A meeting was organized in Sao Paulo, Brazil, 5-9 April 1993 which

50 A meeting was organized in Sao Paulo, Brazil, 5-9 April 1993 which brought together regional scientists and members of the International Mussel Watch Project Secretariat based at the Woods Hole Oceanographic Institution, USA, to consider the results achieved and to plan further work. The preliminary report prepared by that meeting will be finalised by the Project Secretariat and submitted to IOC by mid 1994 for publication.

51 A meeting of the International Mussel Watch Committee with IOC and UNEP Technical Secretaries for GIPME was held at the Bermuda Biological Station for Research, 9-11 September 1993 to consider the status of implementation of the First Phase and to adopt strategies for the formulation of the subsequent phases of the Project based on the lessons learned from this initial phase. Satisfied with the achievements of the first phase, the meeting decided on three follow-up phases which would hopefully, but not necessarily, run concurrently within a 1994-1997 time frame. These are the Asia- Pacific, Indian Ocean and Eastern Atlantic Phases. In addition, a fourth retrospective (Global) phase would focus on results from the various phases and determine the need to return to specific sites as necessary as well as to continue capacity building/regional technical support as appropriate.

52 The representative of Egypt asked if there was a recognition that species of mussels sampled would differ between regions. The IOC Technical Secretary replied in the affirmative, adding that a certain flexibility was built into the programme to take account of different species as well as differing suite of pollutants from region to region.

53 The representatives of Peru and Brazil indicated intention to have continuous participation in the South American Scientific Network of the International Mussel Watch and expressed great interest in studies being pursued.

54 Dr. Makram Gerges (UNEP) noted the need to include ROPME and the Red Sea Regions in the Indian Ocean Phase.

55 The representative of ROPME stated that due to the tremendous oil pollution in the ROPME Sea Area and the possibility of utilising the Mussel Watch techniques as an indicator of the extent of pollution by hydrocarbons, it was suggested that GIPME might undertake a joint GIPME-ROPME Pilot Project to initiate a monitoring system that can help to establish an early warning system for any deterioration of the ROPME Sea Area.

56 The representative from Norway asked for details of the review mechanisms that were in place as one proceeded from one phase to the next. He stressed that it is essential that in addition to reviewing the quality control and quality assurance of the body of data, it was also important to assess the validity and representativity of the field measurements in a spatial and temporal context. GEEP has expertise in this area and may be used in the review process.

57 The IOC Technical Secretary assured the representative of Norway that GEEP's expertise in these fields was acknowledged and GEEP would indeed be used in the review process.

**4.2.2 Open Ocean Baseline Survey**

58 The representative of Germany, Dr. Schmidt, briefly summarized the results of leg 1 referring to his more detailed presentations at the GEMS-GEEP Meeting in Moscow in October 1990, GIPME-VII, (Paris, January 1991) and Joint GIPME Panel (Paris, March 92). RV METEOR ship time was donated by Germany. The cruise, 13 March to 15 April 1990, started in Cape Town, South Africa, and finished in Funchal, Madeira. Stations #4, 5, 7, and 9 of the original plan were sampled, to obtain data on the different deep water oceanic basins. 13 scientists from several countries participated, representing approximately 10 well advanced laboratories; 10 additional laboratories received samples.

59 Results were first discussed at a meeting in Jekyll Island, Georgia, USA, April 1991 and the first series of scientific papers was presented in a special session of the Ocean Sciences Meeting of the American Geophysical Union, January 1992. The first series of scientific papers will

be published in a special issue of the Journal Marine Chemistry (P. Yeats, Canada, serving as Guest Editor).

60 A large array of trace heavy metals and some metalloids and non-metallic elements have been successfully determined at (generally) extremely low levels, taking advantage of the availability in participating laboratories of the most advanced analytical methods.

61 Dr. Michael Bewers (Canada) who was responsible for the overall arrangements for the second cruise informed the Committee that the cruise was undertaken on board the Canadian Survey Ship RV HUDSON during 1993 in the Northwest Atlantic with Dr. P.A. Yeats as chief scientist. A meeting is planned in conjunction with the Fall American Geophysical Union meeting in late 1994 to evaluate progress in obtaining results from this cruise. During this meeting, plans for the publication of the results of this cruise will be made and progress in obtaining ship time for the third, and possibly final cruise in the Atlantic will be discussed. If ship time is available in 1995, initial planning for this third cruise will be undertaken. Final planning for the cruise will need to be completed at a dedicated meeting among cruise participants in early 1995.

62 This would also appear to be an appropriate time to consider the design and conduct of similar baseline studies in other ocean basins. If sufficient interest exists in a baseline study of the Pacific, GEMSI would be prepared to ensure the formulation of a study design for this ocean. The Pacific baseline could be implemented following the completion of the Atlantic baseline, hopefully in 1995 or 1996. The IOC Secretariat was asked to inquire with Member States of their interest in having a Pacific Ocean Baseline Survey and reporting the results of this next IOC Executive Council Meeting.

63 The Committee recognized the value of preparing a data report, to be issued as an IOC report, of all data from the first cruise in this series.

64 Dr. Schmidt proposed that this data report should preferably be in the form of a volume of referred scientific papers by the authors/groups of authors presenting the final comprehensive compilation and evaluation of their data from leg 1, rather than a mere anonymous computer-printout of tabulated data.

65 He offered to investigate the possibilities of such a volume to be published by IOC (and/or the other sponsoring agencies) in consultation with the Chairman of GIPME and its Groups of Experts and the IOC Secretariat.

## 4.3 REGIONAL ACTIVITIES

### 4.3.1. IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE/CEPPOL)

66 Mrs. Beverly Miller, Deputy Co-ordinator of UNEP's Co-ordinating Unit for the Caribbean Environment Programme (CAR/RCU) stated that the Programme is a component of the Regional Seas Programme of UNEP. Thirty-three States and Territories participate. Presently, there are nineteen Contracting Parties of a possible twenty-eight.

67 The Action Plan of the Caribbean Environment Programme consists of five Regional Programmes namely:

(i) Specially Protected Area and Wildlife (SPAW),

(ii) Assessment and Control of Marine Pollution (CEPPOL),

(iii) Integrated Planning and Institutional Development (IPID),

(iv) Information Systems (CEPNET),

(v) Education, Training and Awareness (ETA).

68 She explained that UNEP and IOC convened the Second Meeting of the CEPPOL Group of Experts in San Jose, 11-13 April 1994, to review the CEPPOL

regional programme and to provide recommendations for the revised 1994-1995 workplan and budget of CEPPOL as well as the provision of inputs into the 1996-1997 workplan and budget of the CEPPOL Programme. It should be noted that atmospheric inputs into the marine environment will be included in the 1996-1997 workplan. Furthermore, UNEP and IOC convened the First CEPPOL Symposium, San Jose, 14-15 April 1994 which presented the results of the CEPPOL Programme as well as a number of relevant papers from PAHO, NOAA, USEPA and IMO.

*69* Additionally, through the CEPPOL Regional Programme a Regional Overview on land-based sources of marine pollution which pointed out that by controlling the pollutant loads from the following six industries, BOD would be reduced by 85%:

(i) oil refineries,

(ii) paper production,

(iii) food processing,

(iv) alcohol and sugar distilleries,

(v) beer and soft drink breweries,

(vi) chemical industries in general.

*70* She stressed that GIPME collaboration is needed regarding the development of methodologies to assess:

(i) pollutants in the marine environment (water, sediments and organisms),

(ii) non-point sources of marine pollution,

(iii) eutrophication processes.

*71* It was recommended by CEPPOL that GIPME utilize the CEPPOL Regional Programme as model for the assessment and control of marine pollution in other regions. It is important that the development strategy used by UNEP and IOC be adopted by other regions in light of the success of this programme.

*72* Finally, she noted that it is important to point out that the Integrated Action Plan of the Caribbean Environment Programme would benefit from GIPME's input and stressed the fact that GIPME and the CEP should form a relationship that goes beyond CEPPOL.

*73* The representatives of Costa Rica and the United States introduced a proposal considered by the Group of Experts on CEPPOL at its meeting in San Jose, 11-13 April 1994, to develop and implement an intercomparison exercise for marine debris in the Wider Caribbean Region. The exercise will test methodologies contained in the Marine Debris Survey Manual recently adopted by the Committee on GIPME and presently being published by the IOC through IAEA. The Committee on GIPME expressed its full support and endorsement of the recommendations by the CEPPOL Group of Experts to include support for the proposed intercomparison in the proposed Budget and Workplan for the 1994-1995 Biennium and the proposed Budget and Work Plan for the 1996-97 Biennium of the CEPPOL Programme.

*74* Mr. Fred Barry, Acting Secretary IOCARIBE, informed the Meeting that he had been recruited to serve the Subcommission for one to two years until a permanent Secretary is appointed. He noted that with firm goals and directions and guidance from the IOC Secretariat, Paris, IOC's activities in the region will be advanced and stimulated. Focus will be on the IOC input to the CEPPOL Program with special emphasis on continuation of studies of Marine Debris, Waste Management, and oil and pesticide pollution aspects of the programmes. Activities will be coordinated with other organizations in the region, especially the Caribbean Environment Program at Kingston. Finally, he said that the IOC/OSLR programme in the region will be strengthened as far as possible.

4.3.2 MEDITERRANEAN

75 This report was introduced by the representative of Egypt. He referred to the last meeting of the contracting parties of the Barcelona Convention which approved the programmes and budget for the MEDPOL Programme. The MEDPOL Programme is a UNEP Regional Seas Programme executed in co-operation with IOC/UNESCO, FAO, WHO and WMO with occasional contributions from non UN agencies. GIPME contributions to the region are through input to the MEDPOL Programme.

76 The IOC Secretariat informed the Committee that several contracts were concluded with national laboratories for the execution of research and monitoring projects under the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL). An Inter-Agency Consultation on MED POL, held in Athens at the UNEP Mediterranean Action Plan (MAP) Secretariat on 5 May 1992, paved the way for the Meeting of the MED POL National Co-ordinators (Athens, 6-9 May 1992) which reviewed progress of MED POL and discussed the status of pollution monitoring in the Mediterranean. Problems identified with metholodogies, data reporting, etc, will be addressed in the development of a new monitoring plan to be implemented from 1995. Earlier, IOC had attended a MED POL Consultation on Eutrophication and Plankton Bloom Research (Athens, 19-20 March 1992) which defined a detailed regional programme. This meeting recommended that IOC initiate projects on hydrodynamic modelling of selected case study areas: Alexandria Bay (Egypt), Therrmaikos Gulf (Greece), Emilia Romagna Coast (Italy) and possibly the Gulf of Trieste (Italy). IFREMER (France) would continue similar existing projects in Etang de Prevost (France) and Gulf of Gabes (Tunisia).

77 A joint FAO-IOC-UNEP training workshop on the statistical treatment and interpretation of Marine Community Data was organised in Nice, France, October 1991 and again in Trieste, Italy, in September 1992, this time in collaboration with the Laboratorio di Biologia Marina (LMB) of Trieste.

4.3.3. IOC Sub-Commission for the Western Pacific (WESTPAC)

78 The IOC Technical Secretary informed the Committee that the majority of marine pollution research and monitoring activities in the region were focussed on river inputs of pollutants to the marine environment. The Report of the IOC/WESTPAC Workshop on River Inputs of Nutrients to the Marine Environment in the Western Pacific held in late 1991 in Penang, Malaysia, was finalised and distributed in 1992. A follow-up workshop planned for 1993 in Vietnam was deferred to the 1994-1997 Plan period. A GEEP Training Workshop focussing on statistical analysis of benthic communities, was held in Xiamen, China, 7-23 October 1992, and included participants from the Philippines, North Korea, Malaysia, Thailand, Indonesia and China.

79 An International Symposium on Ocean Pollution was held in Beijing, 4-8 October 1993 partly as a GIPME-WESTPAC activity and another International Symposium being co-sponsored by IOC, UNEP and the Polytechnic of Hong Kong, focussing on marine pollution control technologies is planned for January 1995 in Hong Kong.

80 A planning meeting to initiate the Asia-Pacific Phase of the International Musselwatch Project was held in Tokyo, Japan, January 1993. Another meeting aimed at defining details of this phase is to be organized in the region in September 1994 in co-operation with the United Nations University, Tokyo.

81 An intercalibration exercise of nutrient measurements was conducted by correspondence and the report has been published.

82 Most, if not all, the WESTPAC activities mentioned above are perceived as part of the preparatory process for the on-going development of the North West Pacific Action Plan. It is understood that GIPME will play a lead role in guiding the execution of the marine pollution elements of the Action Plan when it comes into being.

83 Arrangements have been concluded with the Government of Thailand to establish a Secretariat for the Sub-Commission in Bangkok.

84 In reaction to the last point, Dr. Makram Gerges (UNEP) pointed out the existence of a UNEP Co-ordinating Unit for East Asian Seas Action Plan in Bangkok, noting that in view of existing interagency co-operation, it would be useful not to duplicate facilities that exist already but to take advantage of such facilities.

85 The representative of UNEP brought to the attention of the Committee that the UNDP-IMO-GEF Project for East Asian Seas mentioned under this agenda item in the Annotated Agenda will not have the support of UNEP until it has been properly endorsed by the governments of the region at a forthcoming meeting of the Coordinating Body of the Seas of East Asia (COBSEA).

**4.3.4. IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean (IOCINCWIO)**

86 The Secretariat explained that geographically this area is equivalent to UNEP's Eastern African Regional Seas Area. He stated that GIPME's involvement within the region has been mainly in the context of Joint UNEP-FAO-IOC-IAEA-WHO programme on Assessment and Control of Pollution in the Coastal and Marine Environment of the Eastern African (EAF/6) Region, the Joint UNEP-FAO-IOC-UNESCO-IUCN Project on Coastal Zone Management in the Eastern African Region (EAF/5), and also within the Joint IOC-Swedish SAREC Capacity Building Programme for Eastern Africa.

87 An inter-regional (IOCINCWIO-IOCINDIO) workshop on marine pollution monitoring and analytical techniques was organised (Goa, India, 30 March-10 April 1992) with participants from Kenya, Mauritius, Comoros and Mozambique in attendance. Another Training Workshop in Mombassa (25 May-13 June 1992) focussed on the handling and maintenance of equipment used in marine pollution studies.

88 At the request of the Government of Mozambique, following the oil spill by the Maltese registered Tanker, KATINA-P in Mozambique's territorial waters, IOC sent an Advisory Mission to the country (8-20 August 1992) to carry out a preliminary assessment of the extent and impact of the oil spill on the coastal and near shore environment. The mission advised the Government on initial precautionary measures to protect coastal populations from possible effects of the spilled oil through the food chain, and designed, in collaboration with local scientists, a detailed pollution monitoring programme to determine any long term effects of the spilled oil. Support is also being given to efforts to build institutional structures for effecting marine pollution prevention and control measures in the region.

89 A consultant visited countries in the region (except Somalia) in January-February 1994, to undertake on site training in physical oceanographic measurements relevant to marine pollution studies and to help set up equipment for this purpose.

90 As part of a Workshop on Integrated Coastal Zone Management (Mombasa, 5-23 July 1993) IOC organised a two-day Training Course on Oceanographic Survey Techniques including living resources assessment techniques for acquisition to data relevant to coastal zone management.

91 A survey on land-based sources of pollution in the region has been completed. It concluded that the most insidious source of pollution is nutrient loading and IAEA and IOC have been requested to design a nutrient monitoring programme for the region.

92 Mr. Wamusse (Mozambique) called for intensification of capacity building initiatives in the region.

**4.3.5. IOC Regional Committee for the Central Eastern Atlantic (IOCEA)**

93 The Secretariat informed the Committee that a Joint UNEP-IOC-FAO-IAEA-WHO Project on Assessment and Control of Pollution in the West and

Central African Region (which conforms with the geographical delimitation of IOCEA) is currently in its second phase. The programme focuses on pollution from hydrocarbons, pesticides and PCB's, heavy metals and pathogens.

*94* A major hindrance to project implementation in this region is the frequent breakdown of equipment due partly to harsh climatic conditions in the region and a dearth of skilled technicians. A technician from IAEA made a few rounds of the participating laboratories as part of the effort to remedy the situation.

*95* A training workshop was organised by MESL (MEL, MONACO) in 1992 to sharpen the analytical skills of the principal investigators under the projects and more are planned for the near future depending on availability of funds.

*96* On-site training workshops have been organised in 1993/94 in several countries on data acquisition on physical oceanographic factors that affect the transport and distribution of pollutants within the region.

*97* A training workshop on Risk Assessment planned for 1993 was postponed to June 1994. A survey of Land Based Sources of pollution has been completed in about five countries and the conclusion is much the same as for the Eastern African Region; that is, that nutrient loading appeared to be the most worrisome source of pollution in the coastal and marine environment. IAEA and IOC have been requested to produce a monitoring scheme for nutrients for the region.

*98* Mr. James Coe (USA/NOAA) expressed some concern that the survey had not identified solid waste management or the lack of it as an issue worthy of attention. The IOC Technical Secretary also shared this concern stating that as one of a team that wrote the State of the Marine Environment Report for the Region, he was surprised that the solid wastes issue which was identified in that report as an intractable problem did not merit the same mention in the LBS survey report.

### 4.3.6 Regional Organization for the Protection of the Marine Environment (ROPME)

*99* The Executive Secretary of ROPME made a special presentation and circulated a background paper on the activities of his organisation. He recalled that the Kuwait Action Plan was launched in 1978 with a Convention and its Protocol to protect and manage the coastal and marine environment of the region.

*100* The Regional Organisation for the Protection of the Marine Environment (ROPME) was established on 1 July 1979 as the implementing body. The major project areas of ROPME includes Environmental Assessment and Management. Under this broad umbrella specific programmes such as pollution monitoring, surveys of land based sources of pollution, oceanographic cruises, development of guidelines for coastal zone and marine resources management, oil spill contingency plans, reception facilities and data management are undertaken with assistance from specialised UN and non UN Agencies.

*101* With regard to Marine Monitoring Programmes, the ROPME Executive Secretary stated that ecological monitoring of selected ecosystems that are unique, sensitive or endangered formed part of the efforts. In order to achieve compatibility of data and improve the reproducibility of and accuracy of data, a Manual of Oceanographic Observations and Pollutant Analysis Methods (MOOPAM) was prepared and updated in 1989. Additionally, a Quality Assurance Programme involving intercalibration exercise and training workshops has been carried out over the last decade.

*102* He stated that ROPME was beginning to consolidate its achievements in terms of the objectives and targets for which it was established including responding appropriately to incidents such as the Noruz oil spill of 1983 etc. when the Gulf War ensued.

*103* The extent of pollution occurring after the environmental crisis due to the Gulf War has been widely investigated by many UN and other

international organizations under an Inter-agency Plan of Action led by UNEP, assisted considerably by IOC and co-ordinated by ROPME. Much scientific data are available and require to be further developed. GIPME through its scientific capabilities is invited to undertake appropriate actions to further interpret the extensive scientific data available. A continuous GIPME-ROPME co-operation can enhance the activities taking place in the field of marine pollution. Immediate action is needed as most of the information available may become out of date if not further developed and verified.

4.3.7. Programme for the Red Sea and the Gulf of Aden (PERSGA)

*104* Dr. Makram Gerges, Deputy Director UNEP OCA/PAC, stated that several actions are being undertaken to revitalize the Programme for the Environment of the Red Sea and Gulf of Aden (PERSGA). The major initiatives in this regard are:

(i) strengthening national capabilities for marine pollution monitoring and research in four countries of the Red Sea region, namely Egypt, Jordan, Sudan and Yemen. Necessary funds were made available by UNEP to IOC to undertake this task and contacts have been initiated by IOC with a number of institutions in these countries with a view to determining their needs.

(ii) two GEF funded projects in Egypt and Yemen dealing with various aspects related to the protection of marine resources, particularly Coral Reefs in the two countries. These two projects will be implemented under technical supervision of the World Bank and UNDP respectively. UNEP was entrusted with the co-ordination of the activities of the two projects and the organisation of specialised workshops and trainings relevant to the projects, to which national scientists from other Red Sea countries will be invited to participate. The PERSGA Secretariat was requested by UNEP and UNDP to undertake the day-to-day responsibility of co-ordination, whereby PERSGA would be reactivated. To this end, considerable progress has, so far, been achieved in the finalisation of the financial and administrative arrangements, with regard to the establishment of a Project Co-ordinating Unit (PCU) at PERSGA Secretariat in Jeddah, Saudi Arabia; and

(iii) A recent UNEP-FINIDA initiative for Eritrea to assist the newly established government in creating national capabilities for marine sciences and in capacity building for marine environmental monitoring and protection.

*105* A Joint UNEP-PERSGA International Conference on the Red Sea is being planned with the main objective to review the Red Sea and Gulf of Aden Action Plan in the light of the rapid pace of development and the newly emerging environmental problems and concerns in the region.

*106* The IOC Technical Secretary announced that Eritrea had become a Member of the IOC in 1993 and that, following a request of the new Government of Eritrea, an IOC-UNESCO mission visited Eritrea in February/March 1994 to advise the government on marine environmental protection measures to be adopted for the protection of the war-ravaged coastal and marine environment of the country and to determine procedures for setting up a marine science institute. When established, this institute will focus on marine pollution monitoring and research and will provide an important hub for GIPME activities, not only in the country but in the region.

*107* The representative of ROPME noted the slow pace of development of environmental management measures in the PERSGA Region due to political and technical difficulties. He informed the Committee that ROPME as a contiguous area to PERGSA is anxious to assist the region and as a first step in this regard, a joint scientific conference is planned for January 1995 in co-operation with ACOPS, IOC, UNEP and other international organisations to focus on common environmental problems and to define joint strategies.

*108* The representative of Australia observed that the dates of the conference seemed to coincide with those for the WESTPAC Marine Pollution

Conference in Hong Kong and requested the IOC Secretariat to consult with ROPME to resolve the apparent conflict.

*109* The representative of Egypt enquired about the status of the State of the Marine Environment Report for the Region prepared by him and other colleagues some five years ago.

*110* Dr. Gerges (UNEP) responded that the manuscript was being currently updated and edited and would be published in due course.

**4.3.8 IOC Regional Committee for the Central Indian Ocean (IOCINDIO)**

*111* The IOC Secretariat explained that political differences in this region had hindered the forging of concerted marine pollution research and monitoring programmes in the region.

*112* A Training Workshop on Marine Pollution Monitoring Techniques organised in Goa, India, in the first quarter of 1992 attracted participants from Pakistan, Maldives, Sri Lanka, Bangladesh, India and Iran.

*113* Ongoing discussions between IOC and DANIDA of Denmark give hope of the emergence of a regional pollution monitoring programme in due course. Also, discussions have almost been concluded with Pakistan on the organization in 1994 of a JGOFS related workshop first at the national level with support from the US-Pakistan Corporative Programme and then extended to a regional level.

*114* Due to a lack of ongoing regional programme, GIPME has tried to compensate the region by awarding several fellowships to individual scientists from the region to participate in international conferences on marine pollution and to undertake short term training courses including laboratory apprenticeships outside the region.

**4.3.9 Comision Permanente del Pacifico Sur (CPPS)**

*115* Dr. Ulyses Munaylla Alarcon, Advisor for the Action Plan, CPPS/PMUMA, informed the Committee that the Action Plan for the Protection of the Sea and Coastal Areas of the South East Pacific, approved in 1981 with the Convention for the protection of the Seas and Coastal Areas of the South East Pacific (Convention of Lima) and other complementary agreements form the basis for the conservation of marine resources and that the Permanent Commission for the South Pacific, created in 1952, is entrusted with its regional coordination.

*116* He outlined the seven principal areas of activities of the Commission the first of which is "Marine Pollution Research and Monitoring". Under this area, activities taken include evaluation of petroleum hydrocarbons and inventory of terrestrial polluting sources in critical selected areas, studies of microbial pollution and effects of pollution.

*117* Dr. Munaylla stated that the Commission has organised national seminars on analytical methods as well as regional courses on treatment and final disposition of liquid wastes and basic improvement of coastal seas. He also recalled the Latin American Seminar on "Security and Prevention of Marine Pollution from Fishing Vessels and Terminals" and also on port installations for the reception of garbage from vessels.

*118* He announced that as a part of the effort to strengthen the COMPACSE programme, gas chromatographs have been given to institutions in Colombia, Chile, Ecuador, Panama and Peru in order to establish the regional network of surveillance of pesticides.

*119* He further announced that Protocols on responsibility for industrial pollution in the South-east Pacific and on the transboundary movements of hazardous wastes and their disposal are under discussion.

*120* Likewise, he announced that the new orientations derived from UNCED have permitted the Action Plan to rapidly adapt to these new realities by giving priority to its activities in the following areas:

(i) Integrated Management of the Coastal Areas,

(ii) climate changes,

(iii) surveillance of marine environment pollution (analytical quality control, surveillance of pesticides, creation of data base, microbiological pollution),

(iv) protection of the marine biodiversity (regional network of protected coastal and marine areas),

(v) diffusion of information and public awareness.

*121* Finally, he remarked that the level of interaction between GIPME and the relevant programmes in CPPS is not satisfactory and called for a remedy to the situation.

*122* Dr. Gray (GEEP) stated that GEEP had contributed to the implementation of biological effects studies in the CPPS region and announced GEEP's interest in investigating the effects of mariculture.

*123* The CPPS welcomed the expression of interest by GEEP to assist in the above mentioned studies and made particular reference to the problem of continued depletion of mangrove areas to make them available for shrimp farming.

**4.3.10 Southern Ocean**

*124* The representative of the United States informed the Committee that, as a result of preliminary contacts about 1989 with the Scientific Committee on Antarctic Research (SCAR), GIPME's GEMSI submitted in 1990 a proposal to assess marine pollution in the Southern Ocean but regretted that there had been no tangible response ever since.

*125* The IOC Technical Secretary stated that GIPME had contributed in 1993 with a document on strategy for marine pollution monitoring to a comprehensive environmental protection project document prepared by Germany and sought to know from the delegate of Germany the status of that project.

*126* The representative of Germany said he was aware of an initiative by the German IOC National Committee and the Alfred Wegener Institute for Marine and Polar Research in Bremerhaven to formulate a marine environmental protection project for the Antarctic but was unsure of the progress in this regard. He promised to verify this on his return to Germany and to communicate his findings to the IOC Secretariat.

*127* The representative of Chile stated that the Austral Ocean is of great importance to Chile and regretted the absence of any concrete project within the GIPME Programme to monitor pollution in this sensitive area. Therefore, he noted that Chile is ready to support any initiatives that will establish long term pollution monitoring programmes in this area. He informed the meeting that Chile had developed a systematic monitoring programme for hydrocarbons and in particular polycyclic aromatic hydrocarbons in the area around the South Shetland Islands as a part of this programme designed to establish the levels and distributions of these contaminants in the coastal waters of Chile that would be of interest to GIPME.

*128* The Chairman expressed satisfaction at this offer and assured Chile that this and similar projects would be included in the 1994-1997 Third Action Plan for GIPME.

**4.3.11 South Pacific Regional Environment Programme (SPREP)**

*129* The Secretariat informed the meeting of the near lack of collaboration between GIPME and SPREP. He said that SPREP seemed comfortable with its own abilities and capacities and have, with very minimal outside assistance made considerable progress in their principal programme, the "National Environmental Management Strategies". He said that despite several exchanges of letters and expressions of goodwill and willingness to co-operate

with GIPME, no tangible joint programmes had been agreed upon. He reiterated that IOC and in particular GIPME stand ready to assist SPREP in anyway it may deem fit within the mandate of GIPME.

*130* Dr. Gerges (UNEP) stated that UNEP offers funds to SPREP in support of pollution management in the SPREP region and that from reports received at UNEP OCA/PAC, this project is progressing very well.

*131* Dr. Neilsen, UNEP's representative, suggested that the seeming lack of interest on the part of SPREP might derive more from lack of appreciation of the potential contributions of GIPME to SPREP's pollution management programmes rather than a lack of interest. Both he and Dr. Gerges stressed the need for GIPME to interact more actively with regional organizations with a view to making such bodies understand GIPME's relevance to their regional programmes on marine pollution prevention, abatement and control.

*132* The Chairman agreed with this viewpoint.

**4.3.12 Black Sea**

*133* Dr. Andersen (GIPME) described the development of various programmes in the Black Sea and noted that the Bucharest Convention and the Odessa Declaration were the two instruments under which many of the activities were operating. He specifically noted the GEF Programme, whose coordinating office was recently established in Istanbul, Turkey; the NATO-Turkey Black Sea Project being supported through the Science for Stability Program of NATO; ComsBlack, an effort co-sponsored by IOC; EC interests; EROS-2000; and other independent activities such as those of the State University of New York. The efforts of UNEP in establishing a Regional Seas Action Plan for the Black Sea were also noted. It was pointed out that all these programmes are being coordinated for obvious mutual benefits and that GIPME is actively involved in their implementation, particularly with regard to the GEF, NATO and ComsBlack Programmes. The Committee welcomed the information on the coordination and stressed the need for it to continue,, particularly with regard to the GEF Programme, which involved a MOU between IOC and UNDP calling for assistance from GIPME.

*134* Dr. Gerges (UNEP OCA/PAC) confirmed that UNEP has been active in promoting concerted regional action for the protection of the Black Sea. He stressed that the activities either undertaken or proposed should be seen as part of the preparatory process for the Black Sea Action Plan being developed by UNEP in response to the Odessa Declaration and not in competition with it.

*135* Dr. A. Wagener (IAEA) informed the meeting that IAEA had concluded a Memorandum of Understanding with the Black Sea Project Coordinating Unit that embodied responsibility for the purchase, installation and maintenance of equipment and training of regional scientists. She added that already some scientists from the region had been trained at the MESL, Monaco.

*136* The representative of Germany supported the view that a lot of interest had ben focused on the Black Sea. He noted that a bilateral symposium organised by Germany and the State of Georgia had resulted in an agreement to develop, *inter alia*, a marine pollution monitoring system for the Black Sea. He mentioned that the Helsinki Convention has served as an example for a recently established Convention for the Protection of the Black Sea (Bucharest Convention).

*137* The IOC Technical Secretary informed the Session that even before the Bucharest Convention and Odessa Declaration on the Black Sea, the scientists and institutions in the region had organised themselves under an umbrella known as Cooperative Marine Science Programme for the Black Sea (COMSBLACK) for collaborative research on the Black Sea and said that this kind of initiative was worthy of emulation by other regions. He congratulated COMSBLACK for their achievements this far. He also informed the meeting that under contract from UNEP, IOC was in the process of preparing a State of the Marine Environment of the Black Sea Report under the aegis of GIPME.

### 4.3.13 South West Atlantic

*138* Dr. L.F. Niencheski (Brazil) informed the Committee that in the South West Region, progress was made towards the establishment of a sub-regional coordination mechanism for oceanography and ocean affairs. In a meeting, held in Rio Grande, at Fundacao Universidade do Rio Grande, Brazil (26-28 October 1993), governmental representatives from Argentina, Brazil, and Uruguay, took steps towards the establishment of a Sub-regional Programme of Co-ordination of National Experts from the three countries for the Upper Southwest Atlantic, on the basis of the already existing cooperation between the parallel of Cabo Frio in Brazil and the 45 degrees South parallel. Its mission will be to coordinate the oceanographic research activities of the experts belonging to the three countries and the implementation of joint scientific initiatives among them.

*139* Preparations are under way to organize a meeting with delegates and scientists from Argentina, Brazil and Uruguay in Montevideo, Uruguay, in August 1994. Through this initiative, the three countries will co-ordinate their common efforts in order to strengthen their relations with IOC.

*140* Mr. Andersson (IOC) informed the meeting that under an MOU with UNEP, the proposed meeting will be organized jointly with UNEP, and will be regarded as part of the preparatory process in UNEP's pursuit of an Action Plan for the South West Atlantic Region.

*141* The IOC Technical Secretary stated that IOC, with assistance from MESL (IAEA), organised a Regional Meeting on "Intercomparison of Analytical Techniques Utilized in Quantifying Pollutants in Marine Samples" (Sao Paulo, Brazil, 11-14 August 1992) and that as a follow-up to this exercise, assistance was provided in 1993 to participating laboratories to complete the analysis of reference materials supplied earlier to them, as well as in the interpretation of the results. A report of this exercise has since been issued.

*142* Collection of samples from the three countries in the region under the International Musselwatch Project was successful and regional laboratories participated in the analyses of split samples. Brazil hosted a meeting in Sao Paulo, 5-9 April 1993, convened to consider the results achieved in the First Phase of the IMW Project and to plan further work.

*143* A regional marine pollution data base set up in 1991 at the UNESCO Regional Office (ROSTLAC) in Montevideo, has been recently updated and upgraded. The design of the project on Ecotoxicological studies of Montevideo Bay was completed in 1992 by Swedish experts from the University of Goteborg (Sweden) in collaboration with local scientists.

### 4.3.14 Regional needs

*144* At the end of presentations and discussions on the 13 regions, the Chairperson of the Sessional Working Group that was set up to consider the general and specific needs of the regions, Dr. A. Wagener (IAEA) summarized the Group's findings and recommendations to the Committee. The Committee adopted the recommendations. The full report of this Working Group is attached as Annex IV (Part 1).

## 4.4 REGIONAL ASSESSMENTS

*145* Dr. J. M. Bewers (GEMSI) informed the Meeting that GESAMP produces periodic State of the Marine Environment reports based on inputs from the regions. In the last review published in 1990, *ad hoc* mechanisms were used in obtaining the regional inputs resulting in disparities in both the formats used as well as quality of the data included in these reports.

*146* In reaction to this, GESAMP at its twenty-third session in London in 1991 set up a Working Group to develop guidelines that would apply globally.

*147* In response to a question from the representative of Australia on geographical delimitations of regions, Dr. Gray (GEEP) pointed out that one

problem in producing regional assessments of the State of the Marine Environment is the lack of common boundaries limits as adopted by UNEP and IOC in their definitions of regions.

148 Dr. Raul Mederos, CEPPOL Co-ordinator, said that the cause-effect relationships in the reports are not well developed and that GIPME could provide a framework for adequate evaluation of such relationships.

149 The representative of Germany noted that the Helsinki Commission had produced a very good assessment of the Baltic Sea and that a Quality Status Report exists on the North Sea both of which could serve as models.

150 The representative of Egypt stated that the Joint Panel for GIPME could serve as a mechanism to co-ordinate the inputs from the regions.

151 **The Committee decided** that the experience of GIPME from undertaking regional monitoring activities place it in good stead to deliver the regional components of the State of the Marine Environment Report. The Committee further agreed that should GESAMP receive an invitation on time from the U.N. Committee on Sustainable Development, the regional inputs through GIPME could be delivered to GESAMP in time to permit GESAMP to prepare a global assessment for the 1996 meeting of the Committee for Sustainable Development. A paper on Regional Assessments prepared by a sessional Drafting Group is attached as Annex V.

4.5. ORGANIZATIONAL AND CO-ORDINATIONAL ASPECTS

152 Many Delegates emphasized the need to have a credible co-ordination mechanism in the light of the decisions by UNEP and IMO to co-sponsor GIPME noting that the ultimate objective of such a mechanism should be the harmonization of the marine pollution research, monitoring, assessment, abatement and control programmes of IOC, UNEP, and IMO particularly at the regional level for the mutual benefit of the three organizations and their member states.

153 Dr. Gerges (UNEP) informed the Delegates that in the case of UNEP co-sponsorship, an effective mechanism exists in the form of the Joint IOC-UNEP Intergovernmental Panel for GIPME and that what was needed was some form of a tripartite Memorandum of Understanding to formalise IMO co-sponsorship.

154 The Chairman deferred further discussions on this topic noting that agenda item 7 is solely devoted to it.

## 5. GIPME RESPONSE TO UNCED

### 5.1 LAND-BASED SOURCES

155 Dr. J.M. Bewers (Canada) stated that UNCED follow-up activities include the development of enhanced protection of the marine environment from land-based activities. A series of meetings are taking place under the auspices of UNEP, the second of which will be an Intergovernmental Meeting on a possible revision of the Montreal Guidelines to take place in Montreal, 6-10 June 1994. The GIPME Secretariat is intending to submit a paper to this meeting emphasising alignments between provisions of the Montreal Guidelines and the provisions and activities of the GIPME Programme. The draft of this paper prepared in October 1993 has been included in the background documents for this meeting.

156 A sessional working group was established to undertake this task. It was stressed, in the presentation made by this Working Group, that national representatives should contact their national nominees to the Montreal Meeting and ensure that the latter are well-briefed on the GIPME paper and on the benefits that the GIPME Programme can offer to enhance prevention of marine pollution from land-based sources.

157 **The Committee commended the Secretariat** for the initiative with respect to the GIPME paper and decided that GIPME Programme should be

represented through its co-sponsoring agencies in the forthcoming meetings on Land Based Sources of Pollution.

5.2 INTEGRATED COASTAL AREAS MANAGEMENT (ICAM)

*158* Dr. John Gray (Norway) who is Co-Chairman of a newly established GESAMP Working Group on ICAM (GESAMP XXIV, New York, 21-25 March 1994) defined the scope of Integrated coastal areas management as determined by the Sessional Working Group on ICAM (see Annex VI) and explained that GIPME's expertise and strength lay in the ability to contribute practical advice and capacity building based on first-hand field experience. In their new workplans, both GEMSI and GEEP wish to be more responsive to regional problems and ICAM is foremost among these.

*159* GEMSI, through its evaluation of previous training activities in support of regional activities, has already emphasized the need to enhance cooperation and liaison with regions in tailoring its activities to their needs. Both GEMSI and GEEP have proposed a structure that has individual members assigned to maintain direct contact with specific regions to enable a more complete picture of regional aspirations and associated technological and training requirements. In this context, the Expert Groups stand ready to assist regions in the furtherance of their development and implementation of ICAM.

*160* GEEP has specifically stated that it wishes to be involved in management of coastal developments which are likely to affect coastal ecosystems. If it is possible to identify appropriate problems then GEEP would be involved at all phases from initiation to completion. Suggested issues which may be appropriate are new tourism projects or coastal aquaculture that impinge on mangrove and/or coral systems or plans to erect marine protected areas.

*161* Finally, Dr. Gray informed the Committee that the GESAMP Working Group on ICAM would review the UN Agencies approaches to ICAM and would produce guidelines as to how nations can develop a logical and scientifically based mechanism for ICAM. The report of the working group is expected in 1996.

*162* **The Committee requested** the Secretariat to liaise closely with GESAMP on developments in this regard.

5.3 GLOBAL OBSERVING SYSTEM (GOOS) - HEALTH OF THE OCEAN (HOOP) MODULE

*163* Dr. Andersen briefly described developments of the Global Ocean Observing System. He noted that prior to about a year ago, most, if not all developments, were in the area of climate considerations dealing with physical variables. However, over the past year an *ad hoc* panel on the Health of the Oceans was formed to develop a strategic plan for this module of GOOS. He pointed out that the regional assessments within the GIPME Programme were an important element and pointed out that this was yet another reason for having the planned assessment carried out as soon as possible. It was also pointed out that the most recent draft of the Strategic Plan for HOTO was among the documentation for GIPME-VIII and comments on it would be welcomed.

*164* Dr. Gerges (UNEP) indicated that UNEP has been involved from the early stage of GOOS in the development of its modules, particularly the Coastal Zone Module and the Health of the Ocean Module. Moreover, UNEP representative to the Seventeenth Session of the IOC Assembly confirmed his organization's interest in co-sponsoring GOOS. In due course, UNEP honoured its commitment toward the further development of GOOS. However, UNEP was omitted from the Memorandum of Understanding between IOC, WMO, and ICSU concerning the establishment and co-sponsorship of GOOS. UNEP, therefore, wishes to express its concern and would like to bring this matter to the attention of the IOC Secretariat, through the GIPME Committee, which dealt specifically with the development of the Health of the Ocean Module with UNEP's input and support.

*165* The representative of Australia said that the current plans for the Australian GOOS do not reflect the proposed composition of I-GOOS, and this could be counterproductive. Australia offers its support to the GIPME

generated plan for HOTO and seeks a mechanism to globally address the issue of ensuring that national programmes appropriately reflect the international programme of GOOS.

*166* **The Committee endorsed the present approaches to the development of the Health of the Ocean Module of GOOS.**

5.4 CAPACITY BUILDING

*167* This agenda item was introduced by Dr.Angela Wagener (IAEA, MESL). The Committee was informed on MESL efforts in the context of GIPME programme. MESL is working in association with GEMSI on the development and testing of reference methods and in association with GESREM on intercalibration exercise and production of reference materials. Major training activities have taken place during the last years and as an example of this she said that during 1993, 40 scientists from 35 countries had received training.

*168* Dr. Alan Walton (GESREM) explained that ILMR was established 30 years ago to address expressed public concern on marine contamination derived from nuclear weapon testing. Since then, IMLR has increasingly been involved in the field of pollution monitoring studies. Since IMLR is the only UN laboratory dealing with marine science, its interaction with other agencies grew and MSL was created in 1986 to address non-nuclear marine contaminants.

*169* However, it was stressed that MESL is suffering both financial and mandate problems. Dr. Angela Wagener requested assistance from the GIPME Secretariat as well as from participating member states in solving these problems.

*170* A Working Group established to outline the strategies for capacity building presented its report to the Committee. The report is part of Annex IV (Part II). **The Committee formulated** a Draft Resolution based on comments made in this agenda item. The Draft Resolution would be submitted to the IOC Executive Council (Paris, 5 - 13 July 1994) for adoption (Annex II).

*171* Dr. J. Gray (GEEP) highlighted the success of capacity building within the GIPME framework. He pointed out, however, that a mechanism for constant updating and reviewing is necessary.

*172* The representative of Egypt stated the need for taking into account socio-economic backgrounds of the regions when planning for capacity building. Moreover, the human resources base at UNESCO, and in particular in the former Marine Sciences Division, should be consulted when planning for training.

*173* Dr. A. Walton, also member of the Canadian Delegation and the former Director of the Marine Environmental Studies Laboratory, Monaco, recalled the earlier developments relating to the creation of non-nuclear projects in the Monaco Laboratory. He cited the Laboratory's participation in earlier MEDPOL studies and the continuing fruitful tripartite co-operation between the IAEA, IOC and UNEP. Within the context of UNCED, GIPME and the UN Agencies's objectives the Marine Environmental Studies Laboratory had an extremely important and unique role to play in a variety of aspects of capacity building. Financial difficulties are not unique in the history of the Laboratory and current difficulties can be overcome. He emphasized that Member States Delegations to the appropriate UN bodies hold the key to ensuring the Laboratory's continued support to this important activity.

*174* **The Committee accepted the recommendations of the Working Group on Capacity Building (see Annex IV, Part II).**

5.5. PUBLIC AWARENESS/ENVIRONMENTAL EDUCATION

*175* This agenda item was introduced by the Secretariat referring to key recommendations from the UNCED Conference, especially Chapter 17 of Agenda 21. To this end, the GIPME Programme would emphasize more on public awareness and environmental education than it had done in the past.

*176* The Committee was informed that a pilot project, developed jointly by GIPME and the Environmental Education Unit of the Education Sector of UNESCO, would be initiated in the ROPME area in due course.

*177* This pilot project will serve as a model for similar actions in different regions. For this purpose, a popular document on GIPME and its activities will be finalized this year. The Committee was also informed about the major marine debris outreach campaigns taking place in the Caribbean.

*178* The Committee stated its satisfaction with the evolving public awareness component within GIPME.

*179* The Committee asked the IOC Secretariat to continue to produce both formal and informal educational documents for the regions.

*180* At the GIPME Officers Meeting held in London in June-July 1993, the preparation of a public information document describing the GIPME Programme was discussed. Following a description of actions taken by the IOC Secretariat on this topic, a commitment was made by the IOC to make available a final draft of the public information document at the GIPME Bureau Meeting to be held in Paris in June 1994.

*181* Dr. M. Gerges (UNEP OCA/PAC) emphasized the importance of such material and the urgent need for it to be distributed at intergovernmental and other expert meetings of the UNEP Regional Seas Actions Plans.

*182* Mr. J. Coe (US NOAA) warned of the pitfalls in extrapolating success in environmental awareness campaigns from one region to the other noting that differing socio-economic backgrounds dictate that changes in approaches adopted be made from region to region.

## 6 GIPME AND OTHER GLOBAL PROGRAMMES AND BODIES

### 6.1 SCIENTIFIC COMMITTEE ON OCEANIC RESEARCH (SCOR); INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES); NORTH PACIFIC MARINE SCIENCE ORGANIZATION (PICES); MARINE STUDIES ENVIRONMENT LABORATORY (MESL)/INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA-MONACO)

*183* The chairman briefly described the existing relationships between GIPME and SCOR, ICES, and PICES stating that the relationship between GIPME and MESL had already been addressed under agenda item 5.4 on Capacity Building.

*184* SCOR, a subsidiary body of ICSU, is working in close co-operation with IOC in a number of areas, such as GOOS and IGBP.

*185* The agreement on IOC's GIPME assistance in the J-GOFS programme was highlighted. The Committee stressed its appreciation of this continued collaboration and stressed the need to further strengthen it in the forthcoming intersessional period.

### 6.2 INTERNATIONAL GEOSPHERE-BIOSPHERE PROGRAMME (IGBP) OCEAN RELATED PROJECTS (INCLUDING JOINT GLOBAL OCEAN FLUX STUDY (JGOFS); LAND-OCEAN INTERACTION IN THE COASTAL ZONE (LOICZ)

*186* The JGOFS and LOICZ Programmes of IGBP were briefly described. The close interaction between GIPME and JGOFS was particularly noted within the areas of methodological development and training. It was pointed out by Dr. Andersen (GIPME) that the next field programme in JGOFS would be carried out in the Arabian Sea, starting later this year. A training workshop had already been conducted in Mombasa through the support of Germany and another one is being planned for later this year at National Institute of Oceanography in Karachi, through the support of United States of America.

*187* LOICZ was described as one of the IGBP Core Projects relevant to GIPME via the HOTO strategic plan. However, it was noted that this programme is still in the formulation phase, but it is clearly an activity with which GIPME should collaborate for mutual benefit. It was in this regard that the

Committee expressed its regrets that Dr. Pernetta of the LOICZ Secretariat was unable, due to last minute scheduling difficulties, to attend this meeting.

The Committee stressed its satisfaction with its ongoing interaction with JGOFS.

*188* It was considered to be very important to maintain this collaboration and every effort should be made to establish similar links with LOICZ.

6.3 OCEAN SCIENCE AND LIVING RESOURCES (OSLR) INCLUDING HARMFUL ALGAL BLOOMS (HAB)

*189* The Chairman remarked that there appeared to have been little development in the collaboration of the OSLR Programme and GIPME during this intersessional period, adding that the GIPME Groups of Experts could provide useful contributions to the OSLR programme in general and to the HAB programme in particular.

*190* The IOC Technical Secretary informed the Committee that indeed one representative each from GESREM and GEEP made useful input in the deliberations of the Meeting of the Joint IOC-FAO Intergovernmental Panel on Harmful Algal Blooms (Paris, 14-16 October 1993) and were co-opted into the Task Team on Aquatic Biotoxin Chemistry and Toxicology.

*191* The Committee re-stated that GIPME stands ready to lend assistance to OSLR in complementing its programme.

*192* The ROPME representative informed the Committee that on three occasions, fish have died due to algal blooms in ROPME area.

*193* IOC Secretariat pointed out that the HAB programme is currently working on the UVB impact on phytoplankton.

*194* One of the Canadian representatives informed the Committee that increased irradiance by U.V.B. caused partly by ozone depletion can penetrate depths of 30m. and the biological significance of these fluxes has yet to be determined.

6.4 INTERNATIONAL OCEANOGRAPHIC DATA AND EXCHANGE (IODE)

*195* The Chairman pointed out that there had been no significant progress in terms of the recommendations put forth during GIPME VII concerning matters dealing with IODE. He noted that this was not a new situation with regard to IODE, and indeed with all activities dealing with data management.

*196* The Committee expressed its regrets with this continued lack of development but recognized its reality.

*197* Thus, the Committee decided that it would depend on the GOOS programme to have its requirements concerning data met.

6.5 TRAINING EDUCATION AND MUTUAL ASSISTANCE IN THE MARINE SCIENCES (TEMA)

*198* The Chairman noted the importance of TEMA in achieving the objectives of the GIPME Programme. Many successful examples have already been referred to in previous agenda items. Dr. Andersen also pointed out that it was still important to state the obvious; that is, all TEMA activities need to be planned and carried out for the purpose of achieving specific programmatic goals. Several delegations intervened expressing their agreements with this philosophy.

6.6 GROUP OF EXPERTS ON SCIENTIFIC ASPECTS OF MARINE ENVIRONMENTAL PROTECTION (GESAMP)

*199* This agenda item was introduced by Dr. John Gray (GEEP and ex-Chairman, GESAMP). In 1993, IOC formally became a co-sponsor of GESAMP (with

IMO, UNEP UNESCO and others), in addition to its usual role of providing the GESAMP Technical Secretary for Unesco.

200 The change in the name of GESAMP from the "Group of Experts on the Scientific Aspects of Marine Pollution" to "Group of Experts on the Scientific Aspects of Marine Environmental Protection" reflects the shift of emphasize from marine pollution of marine environmental protection.

201 As an UNCED follow-up, GESAMP initiated a project on ICAM. The primary function is to find out how the UN System has handled ICAM matters in the past and from this to develop action plans for the future. **The Committee agreed** that the previous development of GIPME adequately meets the requirements for it to serve as a vehicle for co-ordinating contributions from regions on the health of the marine environment and channeling some to GESAMP as input to the periodic global assessments of the state of the marine environment undertaken by GESAMP.

202 **The Committee stressed** the need for GIPME to maintain and expand on collaboration with GESAMP.

## 7. JOINT IOC-UNEP INTERGOVERNMENTAL PANEL FOR GIPME

### 7.1 POLICY ISSUES INCLUDING IMO CO-SPONSORSHIP

203 The Secretariat informed the Committee that the Joint IOC-UNEP Intergovernmental Panel for GIPME was established following Decision 16/26A of the UNEP Governing Council (May 1991) in response to Resolutions XV-5 of the IOC Assembly (July 1989).

204 A primary objective of the Panel is to promote overall co-ordination and provide policy guidance to harmonize the implementation of the scientific and management components of IOC and UNEP Regional Seas Programme with a view of optimizing the use of available resources.

205 The First Session of the Panel was held in Paris, 4-7 March 1992. At the recommendation of that Meeting, the Bureau of the Panel met in Paris, 24-26 July 1992, to provide the necessary guidance to the Secretariat for the realization of the ideals and targets defined in the Panel's Terms of Reference.

206 The Secretariat stated that two of the principal recommendations made by the Bureau Meeting, namely a description of future strategic development of a harmonized GIPME Programme and an elaboration of the marine pollution module (Health of the Ocean Module) of GOOS, had been largely accomplished. Action on the third principal recommendation involving consultations with individual bodies and Member States of IOC and UNEP was initiated only in the last quarter of 1993 and then only by correspondence, due to scarcity of money and lack of secretariat time. Country and regional visits are planned for the second half of the 1994. A second meeting of the Bureau is scheduled for 28-30 June 1994.

207 At its 69th Session in London, 16-20 November 1992, the IMO Council decided that IMO should become a full co-sponsor of the GIPME Programme. A tripartite Memorandum of Understanding aimed at defining IMO's co-operation on GIPME will be signed in due course.

208 Dr. Gerges (UNEP OCA/PAC) regretted the absence of IMO at the meeting. He informed the Committee that UNEP supports the co-sponsorship of GIPME by IMO but would wish to be informed of details of this co-sponsorship particularly from point of view of availability of financial support for GIPME activities.

209 The IOC Technical Secretary explained that the IMO Technical Secretary for GIPME had made every plan including hotel reservations to be at this meeting but was forced to cancel at the last moment due to budgetary restrictions at IMO. The Technical Secretary explained that for the time being, IMO had committed itself to providing financial support for specific activities of GIPME and that any future contributions would be the subject of

negotiations between IOC, UNEP and IMO. He informed the Committee that an Intersecretariat Consultation has been scheduled in conjunction with IOC Executive Council Meeting in Paris, 5-13 July 1994.

7.2 WORKPLAN PLAN AND FINANCIAL CONSIDERATIONS

*210* The Secretariat informed the Committee that the Second Meeting of the Bureau of the Panel which had been planned for 16-18 February 1994 was to have dealt with this matter but since the meeting has now been fixed for 28-30 June 1994, the formulation of a costed workplan has to await the convening of this meeting.

## 8. THIRD GIPME ACTION PLAN

8.1 ACTIVITIES AND PRIORITIES

*211* The Working Group set up to rationalise the various inputs for the Third GIPME Action Plan presented its report which included a table of costed activities and a timetable. In presenting the report, the Chairman of the Working Group emphasized the point that the work of his Group did not involve any scientific expertise. He stated that the information in the table was lifted from the draft action plan distributed to the Committee before the meeting. A few activities had been dropped and some added based on views expressed during the plenary session and requests from individual Member States.

*212* The Delegate from Norway agreed with the Chairman of the Working Group that the work of this Committee was not one for the experts. He recommended that in future a tabulated list of the costing of priorities of the Draft Expert Groups Workplans (as done by the Working Group here) must be compiled by the Technical Secretaries and sent to GIPME at least four weeks prior to the meeting in order that proper consultations and feed-back from all regions can be obtained.

*213* The IOC Secretariat replied that many activities had been identified as needs in the regions by IOC consultants during the inter-sessional period.

*214* Dr. M. Gerges (UNEP OCA/PAC) emphasized the need for the 1994-1997 Workplan for GIPME to allow for the inclusion in due course of further activities to be proposed by IMO in view of its formal co-sponsorship of GIPME.

*215* Peru enquired whether a workshop on bioassay technique could be provided for under the CPPS request.

*216* Japan asked whether it could be possible to include the CSK nutrient standards in the intercalibration exercise. The answer was in the affirmative.

*217* Egypt requested that two additions be made to the section of the report on capacity building as follows: (i) capacity building should be linked always to on-going programmes; and (ii) capacity building should always include an assessment and evaluation component of the outcome.

*218* Following further discussions, the Committee adopted a Draft Third GIPME Action Plan (1994-97) (Annex VII) and would be submitted for approval to the Twenty-seventh Session of the IOC Executive Council.

8.2 RESOURCES REQUIREMENTS AND AVAILABILITY

*219* The UNEP representative explained that OCA-PAC Budget for 1994-95 had been approved finally, but emphasized that, as he had mentioned earlier, no earmarked GIPME contributions were made in the budget for UNEP to support GIPME activities in 1994/95, these must be clearly identified as regional priorities based on regional views. IOC informed the Committee that the contribution to GIPME in total would be in the order of US dollars 200,000 per year.

*220* The Australian representative and UNEP questioned IMO's contribution in view of its being a joint co-sponsor. In the absence of the IMO representative, the IOC Secretariat informed the Committee about IMO's general commitment to contribute to GIPME activities. He further stated that IMO had been represented at the Bermuda Workshop where the Draft Action Plan was drafted and that IMO nominated activities were included in GEEP and GEMSI's future work plans. The Secretariat was requested to clarify IMO's contributions (Paris, 5-13 July 1994).

*221* The following matter concerning the financing of GESREM activities arose from previous correspondence between GESREM and the IOC Secretariat. Under the auspices of GESREM, the preparation of international standards and reference materials has been undertaken in the case of national and private producers with only the minimum of external financial support. At the outset of this programme when the expert group was in an embryonic phase, such a situation was appropriate. As a continuing policy, however, it is not without difficulties. Two of the world's major producers of reference materials, N.I.S.T. (U.S.A.) and N.R.C. (Canada), have expressed the notion that an improved financial approach will be necessary to ensure the continued availability and development of reference materials on an international level. Such an approach would initially cover development costs for the preparation and certification of materials, but not their exploitation. The national institutions remain committed to donating these materials to international programmes sponsored by IOC, UNEP, IMO and GEF and would not be commercializing the products of these endeavours. Having noted the growing number of international programmes involving numerous agencies in various regions - dealing with, for example, marine contamination, global climate change, and more recently, algal toxins - the group was convinced that there is a growing and continuous need for appropriate reference materials. It recommends very strongly, therefore, that not only IOC and UNEP recognize this financial need, but also GEF, FAO and IMO. The Committee decided that interagency discussions at an appropriate level examine this matter.

## 9. OTHER MATTERS

### 9.1 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA

*222* The IOC Technical Secretary informed the Committee on his visit to the United Nations Law of the Sea Office (UNLOS) and on his discussions with the Head of the Office, Dr. Nee Odunton. He stated that the Convention on the Law of the Sea would come into force in November 1994. The three co-sponsoring agencies of GIPME, IOC, UNEP and IMO, form the bulk of only four organizations of the United Nations system recognized by Annex VIII, article 2 of the Convention to hold substantial responsibilities thereof.

*223* The IOC Technical Secretary noted that the GIPME Programme is specifically mentioned in a new document prepared in Kingston, Jamaica by the United Nations Law of the Sea Office and dated 7 March 1994, as *"providing already an intergovernmental mechanism for the assessment and monitoring of contamination and pollution of the marine environment"*. He said that in the same document, the three GIPME Groups of Experts were identified to have the capacity to *"provide an evaluation of the state of the marine environment, at regional and global levels in order to identify corrective measures for the protection of the marine environment"*.

*224* The Chairman, Dr. N. Andersen (GIPME), remarked that assessments of the global state of the marine environment should be done in concert with GESAMP.

*225* The Committee requested the IOC Secretariat to continue its liaison with UN/DOALOS with a view to ensuring the appropriate involvement of GIPME in the future activities/programmes of that office and the soon to be created International Sea Bed Authority (ISBA).

### 9.2 REGIONAL PROJECT SUBMITTED TO UNESCO-IOC BY EL SALVADOR

*226* The representative of El Salvador provided the Committee with details of a regional project between El Salvador, Nicaragua and Honduras entitled "Establecimento de un Centro Costero-Marino en la Isla de Meanguera

del Golfo de Fonseca" which in many aspects would require GIPME assistance. He stated that the project had been submitted to Unesco-IOC and that preliminary reactions had been favourable. He expressed special thanks to IOC for inviting El Salvador to attend the Session.

*227* The IOC Technical Secretary confirmed that indeed the joint project had been received at the Unesco IOC Secretariat and that there were good indications that it would receive technical support from GIPME in areas relevant to the GIPME mandate.

*228* **The Committee decided** that the project merited GIPME assistance and recommended its further elaboration by experts from the GIPME Groups of Experts.

9.3 CO-ORDINATION OF ACTIVITIES OF GIPME GROUPS OF EXPERTS

*229* The representative of Australia called on the three GIPME Groups of Experts (GEMSI, GEEP and GESREM) to ensure co-ordination of activities and to maximize the extent of possible collaborative and joint activities between them. He stressed that such co-ordination is critical to the success of GIPME in the area of environmental management of pollution, an aspect of GIPME's activities of critical importance in regional jurisdictions.

## 10. ELECTION OF OFFICERS

*230* The IOC Technical Secretary introduced this topic by paying tribute to the exemplary leadership of the Chairman and Vice-Chairman of GIPME during the intersessional period. He said that following prior consultations with the delegations, he was pleased to propose that Dr. Neil Andersen and Dr. J. Michael Bewers continue to serve as Chairman and Vice-Chairman, respectively for the next intersessional period. **The Committee acclaimed** this proposal and the two were thus re-elected.

*231* In response to their re-election, Dr. N. Andersen on behalf of himself and Dr. M. Bewers, thanked the Committee for their re-election and pledged that they will continue to devote time and effort in furtherance of the objectives of GIPME.

## 11. PLACE AND DATE OF NEXT MEETING

*232* The Secretariat informed the Committee that no offers have yet been received from Member States for hosting the Ninth Session of GIPME in approximately three years time. Member States were encouraged to make such offers to the Secretariat for the next IOC Assembly and UNEP Governing Council Session for due approval by the governing bodies of IOC and UNEP.

## 12. CONSIDERATION OF DRAFT SUMMARY REPORT

*233* The Draft Summary Report of the Session was approved with amendments following due consideration.

## 13. CLOSING

*234* The Chairman, Dr. Neil Andersen, thanked all the delegations for their contributions to the success of the Session and encouraged them to continue to maintain a high level of participation and involvement in GIPME activities during the intersessional period. He, again, congratulated the Chief Host, Professor Manuel Murillo, for the excellent facilities made available for the meeting.

*235* He closed the Session by 5.30 pm on Thursday 21 April 1994.

# ANNEX I

## AGENDA

1. OPENING

2. ADMINISTRATIVE ARRANGEMENTS

   2.1 ADOPTION OF THE AGENDA
   2.2 DESIGNATION OF RAPPORTEURS
   2.3 CONDUCT OF THE SESSION, TIME TABLE AND DOCUMENTATION

3. REPORT ON INTERSESSIONAL ACTIVITIES

4. PROGRAMME MATTERS

   4.1 GIPME GROUPS OF EXPERTS

      4.1.1 GEMSI (Groups of Experts on Methods, Standards and Intercalibration)
      4.1.2 GEEP (Group of Experts on Effects of Pollutants)
      4.1.3 GESREM (Groups of Experts on Standards and Reference Materials)

   4.2 OTHER GLOBAL ACTIVITIES

      4.2.1 International Mussel Watch Project
      4.2.2 Open Ocean Baseline Survey

   4.3 REGIONAL ACTIVITIES

      4.3.1 IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE/CEPPOL)
      4.3.2 Mediterranean
      4.3.3 IOC Sub-Commission for the Western Pacific (WESTPAC)
      4.3.4 IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean (IOCINCWIO)
      4.3.5 IOC Regional Committee for the Central Eastern Atlantic (IOCEA)
      4.3.6 Regional Organization for the Protection of the Marine Environment (ROPME)
      4.3.7 Programme for the Red Sea and the Gulf of Aden (PERSGA)
      4.3.8 IOC Regional Committee for the Central Indian Ocean (IOCINDIO)
      4.3.9 Comision Permanente del Pacifico Sur (CPPS)
      4.3.10 Southern Ocean
      4.3.11 South Pacific Regional Environment Programme (SPREP)
      4.3.12 Black Sea
      4.3.13 South West Atlantic
      4.3.14 Regional needs

   4.4 REGIONAL ASSESSMENTS

   4.5 ORGANIZATIONAL AND CO-ORDINATIONAL ASPECTS

5. GIPME RESPONSE TO UNCED

   5.1 LAND-BASED SOURCES
   5.2 INTEGRATED COASTAL AREAS MANAGEMENT (ICAM)
   5.3 GLOBAL OBSERVING SYSTEM (GOOS) - HEALTH OF THE OCEAN (HOOP) MODULE
   5.4 CAPACITY BUILDING
   5.5 PUBLIC AWARENESS/ENVIRONMENTAL EDUCATION

6. GIPME AND OTHER GLOBAL PROGRAMMES AND BODIES

6.1 SCIENTIFIC COMMITTEE ON OCEANIC RESEARCH (SCOR); INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES); NORTH PACIFIC MARINE SCIENCE ORGANIZATION (PICES); MARINE SCIENCE ENVIRONMENT LABORATORY (MESL)/INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA-MONACO)
6.2 INTERNATIONAL GEOSPHERE-BIOSPHERE PROGRAMME (IGBP) OCEAN RELATED PROJECTS (INCLUDING JOINT GLOBAL OCEAN FLUX STUDY (JGOFS); LAND-OCEAN INTERACTION IN THE COASTAL ZONE (LOICZ)
6.3 OCEAN SCIENCE AND LIVING RESOURCES (OSLR) INCLUDING HARMFUL ALGAL BLOOMS (HAB)
6.4 INTERNATIONAL OCEANOGRAPHIC DATA AND EXCHANGE (IODE)
6.5 TRAINING, EDUCATION AND MUTUAL ASSISTANCE IN THE MARINE SCIENCES (TEMA)
6.6 GROUP OF EXPERTS ON SCIENTIFIC ASPECTS OF MARINE ENVIRONMENTAL PROTECTION (GESAMP)

7. JOINT IOC-UNEP INTERGOVERNMENTAL PANEL FOR GIPME

7.1 POLICY ISSUES INCLUDING IMO CO-SPONSORSHIP
7.2 WORKPLAN AND FINANCIAL CONSIDERATIONS

8. THIRD GIPME ACTION PLAN

8.1 ACTIVITIES AND PRIORITIES
8.2 RESOURCES REQUIREMENTS AND AVAILABILITY

9. OTHER MATTERS

9.1 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA
9.2 REGIONAL PROJECT SUBMITTED TO UNESCO-IOC BY EL-SALVADOR
9.3 CO-ORDINATION OF ACTIVITIES OF GIPME GROUPS OF EXPERTS

10. ELECTION OF OFFICERS

11. PLACE AND DATE OF NEXT MEETING

12. CONSIDERATION OF DRAFT SUMMARY REPORT

13. CLOSING

# ANNEX II

## DRAFT RESOLUTION TO BE SUBMITTED TO EC-XXVII

## THE MARINE ENVIRONMENTAL STUDIES LABORATORY (MESL) OF THE IAEA MARINE ENVIRONMENT LABORATORY (MONACO)

The IOC-UNEP-IMO Committee for the Global Investigation of Pollution in the Marine Environment,

**Noting** the continuing need for a laboratory capability in the GIPME Programme and the OCA/PAC,

**Noting** the need to continue the preparation and use of reference materials in marine pollution monitoring programme,

**Noting also** the desire of developing countries to have access to established and proven reference methods,

**Being aware** of the uncertainties of funding and the internal management difficulties of MESL,

**Recognizing** the importance of the MESL for both IOC's and UNEP's marine pollution programmes and its capabilities in the area of standards, methodology and technical assistance,

**Considering** that a co-ordinated approach on the part of the U.N. Agencies involved represents the best formula for the functioning of the MESL,

**Recommends** that Member States make known their views to IAEA regarding the importance of MESL to the continuation of marine pollution investigations and the provision of assistance to developing countries.

# ANNEX III

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# ANNEX IV

## REPORT OF WORKING GROUP ON REGIONAL PROGRAMMES

The Working Group on Regional Programmes was charged with providing the Committee for GIPME with advice and recommendations on the needs of regional programmes (4.3: Part 1) and the strategies for building capacity to assess marine pollution and its effects (5.4: Part II).

### 1. PART I - REGIONAL NEEDS

Concerning a regional programme the working group suggests that GIPME should:

1. Promote, intensify and broaden access to its quality assurance programmes;

2. Provide assistance in the development of intercomparison and monitoring programme design for surveys of marine debris and its sources;

3. Provide assistance in the development of Marine Environmental Quality Standards suitable for each of the Regional Programmes;

4. Provide expertise to facilitate regional training programmes;

5. Consider mechanisms to further develop and utilize information on biological effects of pollution to improve pollution control and response measures;

6. Enhance the design and development of pilot monitoring programmes;

7. Assist in the design and development of regional programmes to estimate pollutant load from land-based sources and provide advice for the development and the implementation of control protocols;

8. Provide advice and assistance on the development of regional environmental impacts assessment;

9. Provide reference materials to regional programmes on a timely basis, free of charge and or at low cost.

### 2. REQUESTS FROM REGIONS FOR ADVICE AND ASSISTANCE AND THE RESPONSE OF THE COMMITTEE FOR GIPME

Noting that representatives from only CEPPOL, ROPME, East Asia, Eastern Africa and CPPS were present in the Working Group, requests made refer only to needs within these few regions. GIPME is concerned that this does not reflect the full range of likely requests from all IOC/MARPOLMON and UNEP Regional Seas areas. Neither are these requests, in all cases, clear as to the specific nature of the regional requirements. GIPME will adopt a procedure for obtaining complete and specific information regarding regional needs in all regions before finalizing its Expert Group workplans. Nevertheless, the requests made by CEPPOL, CPPS, Eastern Africa, East Asia and ROPME, are here responded to in the context of the workplan developed during GIPME-VIII.

#### 2.1 CEPPOL

Request 1: Support to the marine debris intercomparison and monitoring programme as proposed under agenda item 4.3.1, by Costa Rica and United States.

Response: GIPME endorses the intercomparison on marine debris and is ready to assist in intercomparison and monitoring programme design as required.

Request 2: Advice and assistance on the following topics: LBSP, eutrophication, pesticides studies and biological effects of pollution.

Response: Advice has already been given on pesticides and GEMSI is still working on methods, developments and testing for organophosphate pesticides including carbamates and endosulphans. A workshop is planned on this topic in a tropical location for 1996. Eutrophication is an area in which initial investigations are incorporated into the workplans of GEMSI and GEEP. Techniques for detecting and quantifying the biological effects of pollutants are the subject of ongoing investigations within GEEP. This may be a priority region for the conduct of GEEP's field testing of management issues relating to effects on living marine resources.

2.2. CPPS

Request 1: Provision of training support to enable the analysis of heavy metals, pesticides and PCB's in organisms and sediments.

Response: Training workshops on heavy metals and organochlorines in sediments and marine organisms in this region will be considered by GEMSI for inclusion in the activities covered by the latter part of the 1994-1997 Workplan.

Request 2: Provision of reference methods and standards including bioassay techniques.

Response: This is not a specific request and needs further contact with the region to determine the precise needs for reference methods and standards. Compilations of existing reference methods and reference materials and standards exist and the region should determine that its needs are not already addressed. If there exist needs for additional reference methods or standards, these needs will be examined by the relevant Expert Groups during the intersessional period.

Request 3: Provision of guidelines to monitor and control land-based sources of pollution.

Response: Reference methods manuals dealing with the measurement of contaminants from land-based sources have been produced and are available from MESL or the respective secretariats. These methods have been tested in southeast Asia and associated training in this region has been provided.

2.3 EASTERN AFRICA

Request 1: Consolidation of UNEP marine pollution data from all of Eastern Africa to enable a rational basis for programme development.

Request 2: Provision of assistance to the Region for the development of marine pollution assessment and monitoring programmes.

Response: These requirements are best addressed through the process of preparation of regional assessments and the Expert Groups are committed to encouraging and assisting the regions in undertaking such assessments. Such activities are already incorporated into the 1994-1997 workplan.

2.4 EAST ASIA

Request 1: Provision of advice and assistance for the acquisition and updating of analytical equipment.

Response: This request should be transmitted to the Mutual Assistance component of IOC-TEMA.

Request 2: Provision of quality standards for organisms and sediments and reference methods for marine pollution assessments.

Response: The development of sediment quality criteria is included in the 1994-1997 Workplan. This represents a first step in the preparation of environmental quality standards for all marine phases.

2.4 ROPME

Request 1: Interpretation and evaluation of data from tne ROPME Region and to prepare a consolidated report on the State of the Marine Environment.

Response: These requirements are best addressed through the process of preparation of regional assessments and the Experts Groups are committed to encouraging and assisting the regions in undertaking such assessments. Such activities are already incorporated into the 1994-1997 Workplan.

Request 2: Consideration of expanding the Mussel Watch Programme in the Indian Ocean Phase to include the ROPME Region or to start as a pilot project.

Response: The IOC Secretariat is instructed to submit this request on behalf of GIPME to the International Mussel Watch Programme.

## 3. PART II - DISCUSSION OF CAPACITY BUILDING STRATEGIES

Strategies should be drawn up to allow implementation of capacity building activities to the extent necessary to assure regional consolidation of the capability to assess marine pollution issues. Appendix 1 of Annex III is a Draft Pro-forma Questionnaire for obtaining information regarding capacity building requirements in individual regions.

Important components of a strategic action plan are:

- UN funding and sponsoring agencies should pursue raising the level of commitment of Member States to the activity;
- Implementation of capacity building activities should take into account the specific needs and characteristics of each region. To accomplish this, fact finding missions and consultation meetings are strongly suggested.
- Assistance to regions should be given according to priority criteria established by UN bodies in consultation with GIPME and the relevant regional organizations.
- The establishment of Regional Analytical Centers supported by regional Trust Funds or other regional arrangements should be strongly promoted. These centers should concur to the consolidation of capability and optimization of funds allocation.

GIPME urges that the regional centers satisfy the following minimal requirements:

a) to be equipped with functional and adequate instruments,

b) to maintain history of operation,

c) to maintain trained technical and professional staff at all time,

d) to demonstrate a proved efficiency as well as the ability to respond promptly to pollution incidents,

e) to be periodically certified through intercalibration exercises organized by specialized institutions (i.e., MESL).

The above described activities are dependent on the valuable assistance and services of MESL. The plenary recognized and is concerned about MESL financial and managerial problems which may jeopardize the functioning

of this laboratory and therefore the implementation of Regional Activities and Capacity Building programmes.

The Marine Environment Studies Laboratory (MESL), where all projects related to IOC-UNEP-FAO-GEF Programmes are centred, is institutionally a part of the IAEA's Marine Environment Laboratory in Monaco. In a managerial sense the overall responsibility for MESL rests with the IAEA, even though the majority of the financial support and the external guidance for MESL originates from UN agencies other than the IAEA.

Scientifically speaking, all project being pursued in Monaco by the IAEA, IOC, UNEP, etc. are concerned with marine environmental questions, and it would be expected, as was first proposed by MEDPOL in the 1970's, that having non-nuclear projects being pursued along side nuclear environmental projects would prove beneficial and stimulating to those involved. This has indeed proven to be the case for many years.

In times of changing, institutional priorities - particularly in the case of expanding or decreasing responsibilities - the split activities can create difficulties both financial and personnel. Which institutions assume ultimates responsibilities becomes somewhat delicate - and time delays in resolving these issues can prove detrimental to programme activities. With the recent developments in UNCED, increased participation by GEF in the MESL and the high priority accorded by GIPME to the laboratory's leadership responsibilities and crucial role in the non-nuclear marine projects, the working group stresses the need that Member States express their support to the activities carried out on their behalf by MESL in the appropriate form.

APPENDIX 1

DRAFT PRO-FORMA QUESTIONNAIRE FOR OBTAINING INFORMATION REGARDING NEEDS WITHIN REGIONAL GIPME PROGRAMME

This form should be used by Regional Programme Co-ordinators for providing information on current capacity-building requirements in individual regions (both IOC/MARPOLMON and UNEP Regional Seas Action Plan Areas). More expansive explanatory information providing greater specification of these requirements is welcomed and should be submitted along with this form.

Region: .....

Respondent: ..... Date: .....

| | | | |
|---|---|---|---|
| A. | If requirements involve: | Methodology | Please go to Section 1 |
| | | Training | Please go to Section 2 |
| | | Monitoring design | Please go to Section 3 |
| | | Assessment | Please go to Section 4 |
| | | Management | Please go to Section 5 |

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SECTION 1. METHODOLOGICAL REQUIREMENTS

It should be noted that there exists a comprehensive catalogue of marine reference materials and standards that is available from the National Oceanic and Atmospheric Administration or the IOC Secretariat. In addition, there exists a list of all Reference Methods manuals produced under the auspices of UNEP and the IAEA Marine Environmental Studies Laboratory, Monaco. This latter compilation is available from either the UNEP/OCA-PAC Secretariat or the Monaco Laboratory.

Do the regional requirements lie in the following areas?

A. **Contaminant measurements:**

If so, please specify requirement in detail (use additional sheets if necessary):

B. **Biological effects measurements:**

If so, please specify requirement in detail (use additional sheets if necessary):

C. **Quality assurance procedures:**

If so, please specify requirement in detail (use additional sheets if necessary):

SECTION 2. TRAINING

Do the regional requirements lie in the following areas?

A. Training in sampling methodology for contaminant measurement:

If so, please specify requirement in detail (use additional sheets if necessary):

B. Training in sampling methodology for biological effects measurements:

If so, please specify requirement in detail (use additional sheets if necessary):

C. Training in analytical chemistry methodology:

If so, please specify requirement in detail (use additional sheets if necessary):

D. Training in biological effects measurement methodology:

If so, please specify requirement in detail (use additional sheets if necessary):

E. Training in quality assurance procedures:

If so, please specify requirement in detail (use additional sheets if necessary):

F. Training in data management methodology:

If so, please specify requirement in detail (use additional sheets if necessary):

SECTION 3. MONITORING PROGRAMME DESIGN

If the regional requirements are in this field, please provide the following information.

A. Please define the overall objective of the intended monitoring application:

B. Please outline the nature of the regional requirement for assistance:

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SECTION 4. ASSESSMENTS

Guidelines for the conduct of assessments of regional marine areas have been prepared by GESAMP and can be made available by the IOC, UNEP and IMO.

Please outline the nature and specific purpose of the assistance required:

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SECTION 5. MANAGEMENT

Guidelines for the conduct of assessments of regional marine areas have been prepared by GESAMP and can be made available by the IOC, UNEP and IMO Secretariats. These guidelines include procedures for identifying needs for management action, evaluation of the effectiveness of previous management action, and the selection among options for management intervention.

Please outline below the specific nature of the assistance required in this category:

# ANNEX V

## REPORT OF DRAFTING GROUP ON REGIONAL ASSESSMENTS

Periodic regional assessments are a valuable means of determining the state of understanding of conditions, trends and adverse effects in a defined marine area. They enable the following:

1. Definition of the level of knowledge regarding processes, conditions, trends and the effects of human activities;

2. Identification of gaps in understanding that may be important in limiting the specification of the nature, extent, and causes of anthropogenic influences and effects in the area;

3. Evaluation of the consequences of previous management/regulatory action taken to prevent or correct adverse effects of human activities;

4. Specification of new management initiatives, or options for such initiatives, to correct existing deterioration of the marine environment, or to prevent future adverse effects.

Regional assessments have been widely used as status reports, or benchmarks, with which to identify and justify management action and additional scientific and/or socio-economic studies required to correct deficiencies in understanding. Such assessments have been made, with various levels of comprehensiveness and detail, for most regional marine areas. Such areas include those covered by the regional activities of GIPME/MARPOLMON and UNEP(OCA/PAC) and other areas including the Irish Sea, the North Sea, the Gulf of Maine and the Baltic Sea.

GESAMP (the United Nations Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection), in its terms of reference, is charged with the preparation of periodic assessments of the state of the global marine environment. The most recent of those assessments was published in 1991 and benefitted from the availability of a number of regional marine assessments. The draft strategic plan for the "Health of the Oceans" module of the GLobal Ocean Observing System also recognizes the need for periodic assessments of the state of the global marine environment prepared by GESAMP based on regional assessments prepared at appropriate intervals.

GESAMP has recently completed guidelines for the preparation of regional marine assessments extending beyond the earlier guidelines developed by the International Council for the Exploiration of the Sea (ICES). The GESAMP guidelines define regional assessments as both the preparative process and the product (the document). The guidelines will be published as GESAMP Reports and Studies No. 54 under the title "Assessment of the condition of the marine environment: Guidelines for Marine Environmental Assessments". This document describes both the content of regional environmental assessments and the procedures for evaluating and summarizing technical and socio-economic information, identifying required management intervention and specifying the requirements for additional studies to enable greater insight to be obtained. The document also suggests that the process of assessment should be divorced from the conduct of additional field measurement activities. In cases where assessments have been commissioned in concert with new monitoring ventures (e.g., in the North Sea) complications and delays have arisen to the detriment of the quality, coverage and specificity of the assessment. GESAMP advocates that this be avoided and that regional assessments be based wholly on existing information and data. Furthermore, such assessments should normally be completed within a period of 12 months and, at the latest, eighteen months.

Accordingly, it would be valuable, both to individual regions and to the international community, for each region involved in marine pollution prevention activities under the umbrella of GIPME, to periodically prepare assessments of the state of the marine environment. To this end, GIPME endorses the development of a timetable for the completion of such assessments and commits its Expert Groups, particularly GEMSI and GEEP, to co-operate with, and assist, regional agencies in these activities. The sponsoring

agencies, in consultation with the regions, should develop:

a) a timetable for the preparation of new regional assessments; and

b) mechanisms for the preparation of assessments in the context of those outlined in the GESAMP Guidelines.

Regional assessments prepared in this way, once finalized, should be submitted through the sponsoring agencies of GIPME to the GESAMP Secretariat as reference documents for the preparation of periodic global assessments.

A major impediment to the efficient preparation of regional assessments is the inadequate alignment of IOC-sponsored and UNEP-sponsored regional programmes. IOC and UNEP have differing definitions and organizational mechanisms for their regions. For GIPME, this entails unnecessary difficulties and duplication, *inter alia*, in the organization of regional assessments. Recognizing that there are legal issues involved in the UNEP Regional Action Plan area definitions, GIPME strongly recommends that, as a matter of urgency, IOC and UNEP take steps to resolve such legal difficulties in order to unify their respective regions and combine the associated secretarial functions accordingly.

# ANNEX VI

## REPORT OF WORKING GROUP ON INTEGRATED COASTAL AREAS MANAGEMENT

### The role of GIPME in Integrated Coastal Areas Management (ICAM)

Integrated coastal areas management (ICAM) also known as Integrated Coastal Zone Management (ICZM) involves comprehensive management of both marine and adjacent land environments and anthropogenic activities therein. Its primary objective is the achievement of an optimal balance among economic and social development and environmental protection in the interests of sustainable development of resources. Thus ICAM must be multisectorial. Likewise, ICAM involves a wide variety of scientific and other disciplines including sociology, socio-economics, economics, planning, and marine scientific disciplines such as physical, chemical and biological oceanography, marine ecology and toxicology.

At its recent meeting, GESAMP was asked by its sponsoring agencies to address ICAM. TO this end, it has set up a working group, comprising experts from many of the key disciplines, with the aims of reviewing the UN agencies' approaches to ICAM and to produce guidelines as to how nations can develop a logical and scientifically-based mechanism for ICAM. This working group is expected to finalise its report in 1996.

The traditional framework of managing coastal environmental issues proceeds from the identification of a problem, through specification and implementation of management action, to an assessment of whether or not the action has cured the problem. Science is used in the initial phase whereby the results of research are used to identify and develop procedures for remedying problems. Monitoring is often used to determine whether or not a problem was rectified. This traditional approach ignores the fact that science can be used at all stages of the process not just at the beginning and at the end. Whether or not the problem itself was adequately defined is a central issue. For example, growth of shrimp in aquaculture lagoons may not be as good as predicted. The problem may be thought to be related to growth conditions, yet the wider issues of water and sediment quality, and the integrity of the coastal ecosystems themselves, may be the underlying causes and have not been adequately investigated. When arriving at managerial solutions, utilising a scientific approach, it is necessary to synthesise models (both conceptual and actual) for various solutions. Once a managerial solution is proposed, the scientific approach is to develop specific predictions and methods to test these predictions, through monitoring and the use of feedback loops so that the proposed management solution can be tested and corrective adjustments introduced where appropriate. Thus, scientific advice is needed at all phases of management; however, this is not routinely the case today. GIPME can give such advice through its expert groups GEMSI and GEEP.

Scientific uncertainty will limit the degree to which the benefits of ICAM can be achieved. This is because allowance for uncertainty, such as the adoption of conservatism, will reduce the ability to achieve the optimum balance between the sustainable exploitation of the system and the protection of its resources and amenities. A good example of the importance of uncertainties is provided by the Ministerial Declaration on the North Sea. Here, it was agreed to reduce the inputs of key chemical pollutants by 50% between 1985 and 1995. Science was not used to define the problem. It was assumed that the reductions in inputs were necessary and the selected 50% reduction was entirely arbitrary. Neither was consideration given to whether it would be possible to detect corresponding changes in inputs. Questions are now being asked as to whether or not the goal has been achieved. However, no reliable data were available on inputs to the North Sea in 1985 and, thus, it is impossible to assess whether or not the goal has been achieved. The Representative of Germany noted his reservation on including the discussion in this paragraph.

GIPME's expertise and strength is the ability to contribute practical advice and capacity building based on first-hand field experience. In their new work plans both GEMSI and GEEP wish to be more responsive to regional problems and ICAM is foremost among these.

GEMSI, through its evaluation of previous training activities in support of regional activities, has already emphasized the need to enhance co-operation and liaison with regions in tailoring its activities to their needs. Both GEMSI and GEEP have proposed a structure that has individual members assigned to maintain direct contact with specific regions to enable a more complete picture of regional aspirations and associated technological and training requirements. In this context, the Expert Groups stand ready to assist regions in the furtherance of its development and implementation of ICAM.

GEEP has specifically stated that it wishes to be involved in management of coastal developments which are likely to affect coastal ecosystems. If it is possible to identify appropriate problems then GEEP would be involved at all phases from initiation to completion. Suggested issues which may be appropriate are new tourism projects or coastal aquaculture that impinge on mangrove and/or coral systems or plans to erect marine protected areas. GEEP can give advice on how the total spatial and temporal effects can be properly assessed and help in design and implementation of the best practical monitoring programme with the necessary capacity building. In this context, it will be necessary, periodically, to review the capabilities and resources in the regions necessary to tackle ICZM problems.

Finally, due to manpower limitations, GIPME will not be able to undertake more than a few of such exercises, depending on their demands. GEEP has foreseen possible conflicts and has developed objective criteria for choice of projects to undertake.

ANNEX VII

DRAFT THIRD GIPME ACTION PLAN (1994-97)

TIMETABLE OF ACTIVITIES AND ASSOCIATED COSTS

| GROUP | TITLE | YEAR | COST |
|---|---|---|---|
| GEMSI | Full GEMSI Meeting. | 1994 | 40 |
| GEMSI | New JGOFS Manuals | 1994 | 25 |
| GEMSI | Baseline results evaluation | 1994 | 5 |
| GEMSI | Baseline data report prep | 1994 | 5 |
| GEMSI/GEEP | Sediment Qual. Crit. Wkshp | 1994 | 40 |
| GEMSI/GEEP | Attend Major Regional Mtgs | 1994 | 25 |
| GEEP | Full GEEP Meeting. | 1994 | 40 |
| GEEP | Training Wkshp - Black Sea | 1994 | 40 |
| GESREM | Nutrient SW RM Preparation | 1994 | 15 |
| GESREM | Prep. Dried Algae RM | 1994 | 17 |
| GESREM | Evaluate NIST Spinach | 1994 | 15 |
| GESREM | $CO_2$/Alk. RM Preparation | 1994 | 20 |
| GESREM | Full GESREM Meeting | 1994 | 20 |
| GESREM | Coordination (Officers) Mtg | 1994 | 8 |
| 1994 TOTAL | | | 315 |
| GEMSI | Planning 3rd Baseline Leg | 1995 | 25 |
| GEMSI | SQC Wkshp Bombay, Planning | 1995 | 15 |
| GEMSI | Eutroph. New Contaminants | 1995 | 15 |
| GEMSI | Conduct baseline 3rd leg. | 1995 | 25 |
| GEMSI | Design Pacific Baseline | 1995 | 15 |
| GEMSI/GEEP | Aquaculture Wrkshp Planning | 1995 | 15 |
| GEMSI/GEEP | Attend Major Regional Mtgs | 1995 | 25 |
| GEEP | GEEP Core Group Meeting | 1995 | 40 |
| GEEP | Regional Prog. Evaluation | 1995 | 50 |
| GEEP | Training Wrkshp | 1995 | 50 |
| GESREM | Nutrient SW RM Certificn | 1995 | 0 |
| GESREM | Nutrient Intercomparison | 1995 | 20 |
| GESREM | Prep of Algal Pigment RM | 1995 | 35 |
| GESREM | Prep. tissue organ-c RM | 1995 | 10 |
| GESREM | Plan dev. of algal toxin RM | 1995 | 16 |
| GESREM/GEMSI | Assess regional capacity for non-persistent pesticide measurement | 1995 | 24 |
| GESREM | Full GESREM Meeting | 1995 | 20 |
| 1995 TOTAL | | | 400 |
| GEMSI | Non-persistent pesticides intercomparison | 1996 | 20 |
| GEMSI | Eutrophication Wkshp Indonesia | 1996 | 50 |
| GEMSI | Participation in Black Sea Assessment | 1996 | 15 |
| GEMSI | Plan South. Ocean baseline | 1996 | 15 |
| GEMSI | GEMSI Core Grp Mtg SE Asia | 1996 | 25 |
| GEMSI/GEEP | SQC Wkshop, Bombay | 1996 | 65 |
| GEMSI/GEEP | Non-persistent pesticide workshop -Centroamerica | 1996 | 50 |
| GEMSI/GEEP | Attend Major Regional Mtgs | 1996 | 25 |

| | | | |
|---|---|---|---|
| GEEP | Full GEEP Meeting | 1996 | 40 |
| GEEP | Training Workshp (Regional) | 1996 | 50 |
| GEEP | Evaluation of new Biol. Eff. techniques | 1996 | 65 |
| GESREM | Nutrient intercomparison | 1996 | 20 |
| GESREM | Algal pigment RM | 1996 | 35 |
| 1996 TOTAL | | | 475 |
| GEMSI | Full GEMSI Meeting | 1997 | 40 |
| GEMSI | Baseline results eval. mtg | 1997 | 10 |
| GEMSI | Planning for Pac. baseline | 1997 | 20 |
| GEMSI/GEEP | Attend Major Regional Mtgs | 1997 | 25 |
| GEEP | GEEP Core Group Meeting | 1997 | 20 |
| GEEP | Impact analysis Eval. Mtg | 1997 | 40 |
| GEEP | Prep manual of new BET | 1997 | 6 |
| GESREM | GESREM Core Group Prog. Rev. | 1997 | 20 |
| GESREM | Training Workshop | 1997 | 20 |
| 1997 TOTAL | | | 201 |
| GRAND TOTAL | | | 1391 |