

Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies

**Joint IOC-UNEP
Intergovernmental Panel
for the Global Investigation
of Pollution in the
Marine Environment**

First Session
Paris, 4-7 March 1992

UNESCO

IOC-UNEP/IGP-GIPME-I/3
Paris, 2 July 1992
Original: English

In this Series	Languages
Reports of Governing and Major Subsidiary Bodies, which was initiated at the beginning of 1984, the reports of the following meetings have already been issued:	
1. Eleventh Session of the Working Committee on International Oceanographic Data Exchange	E, F, S, R
2. Seventeenth Session of the Executive Council	E, F, S, R, Ar
3. Fourth Session of the Working Committee for Training, Education and Mutual Assistance	E, F, S, R
4. Fifth Session of the Working Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
5. First Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions	E, F, S
6. Third Session of the <i>ad hoc</i> Task Team to Study the Implications, for the Commission, of the UN Convention on the Law of the Sea and the New Ocean Regime	E, F, S, R
7. First Session of the Programme Group on Ocean Processes and Climate	E, F, S, R
8. Eighteenth Session of the Executive Council	E, F, S, R, Ar
9. Thirteenth Session of the Assembly	E, F, S, R, Ar
10. Tenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
11. Nineteenth Session of the Executive Council	E, F, S, R, Ar
12. Sixth Session of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S
13. Twelfth Session of the IOC Working Committee on International Oceanographic Data Exchange	E, F, S, R
14. Second Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions	E, F, S
15. First Session of the IOC Regional Committee for the Central Eastern Atlantic	E, F, S
16. Second Session of the IOC Programme Group on Ocean Processes and Climate	E, F, S
17. Twentieth Session of the Executive Council	E, F, S, R, Ar
18. Fourteenth Session of the Assembly	E, F, S, R, Ar
19. Fifth Session of the IOC Regional Committee for the Southern Ocean	E, F, S, R
20. Eleventh Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
21. Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean	E, F
22. Fourth Session of the IOC Regional Committee for the Western Pacific	E only
23. Twenty-first Session of the Executive Council	E, F, S, R
24. Twenty-second Session of the Executive Council	E, F, S, R
25. Fifteenth Session of the Assembly	E, F, S, R
26. Third Session of the IOC Committee on Ocean Processes and Climate	E, F, S, R
27. Twelfth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
28. Third Session of the Sub-Commission for the Caribbean and Adjacent Regions	E, S
29. First Session of the IOC Sub-Commission for the Western Pacific	E only
30. Fifth Session of the IOC Regional Committee for the Western Pacific	E only
31. Twenty-third Session of the Executive Council	E, F, S, R
32. Thirteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	E only
33. Seventh Session of the IOC Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
34. Fifth Session of the IOC Committee for Training, Education and Mutual Assistance in Marine Sciences	E, F, S, R
35. Fourth Session of the IOC Committee on Ocean Processes and Climate	E, F, S, R
36. Twenty-fourth Session of the Executive Council	E, F, S, R
37. Sixteenth Session of the Assembly	E, F, S, R, Ar
38. Thirteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	E, F, S, R
39. Second Session of the IOC-WMO Intergovernmental WOCE Panel	E only
40. Twenty-fifth Session of the Executive Council	E, F, S, R
41. Fifth Session of the IOC Committee on Ocean Processes and Climate	E, F, S, R
42. Second Session of the IOC Regional Committee for the Central Eastern Atlantic	E, F
43. First Session of the Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment	E, F, S, R

TABLE OF CONTENTS

SUMMARY REPORT

	page
1. OPENING	1
2. ADMINISTRATIVE ARRANGEMENTS	2
2.1 ADOPTION OF THE AGENDA	2
2.2 ELECTION OF CHAIRMAN, VICE-CHAIRMEN AND RAPPORTEUR	2
2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION	2
3. UNEP REGIONAL SEAS PROGRAMME (URSP) - HISTORY, PRESENT STATE AND COLLABORATION	3
4. GLOBAL INVESTIGATION OF POLLUTION IN THE MARINE ENVIRONMENT (GIPME) - HISTORY, PRESENT STATE AND COLLABORATION	4
5. FUTURE DIRECTIONS OF GIPME TO RESPOND TO MARPOLMON AND REGIONAL SEAS PROGRAMME REQUIREMENTS: THE SECOND GIPME ACTION PLAN (1991-1993) AND PRIORITIES	5
5.1 GLOBAL ACTIVITIES	5
5.1.1 GIPME Groups of Experts	5
5.1.2 International Mussel Watch	6
5.1.3 Open Ocean Baseline Study	7
5.1.4 Harmful Algal Blooms	8
5.1.5 Mass Balances and Land-based Sources	9
5.2 REGIONAL ACTIVITIES	9
5.3 CO-OPERATION WITH OTHER BODIES	10
6. GIPME INTERACTIONS WITH OTHER IOC AND UNEP PROGRAMMES	10
6.1 TRAINING, EDUCATION AND MUTUAL ASSISTANCE (TEMA)	10
6.2 INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE)	11
6.3 COASTAL ZONE MANAGEMENT	11
7. GIPME AND GLOBAL CHANGE PROGRAMMES	11
8. ROLE OF THE INTERGOVERNMENTAL PANEL FOR GIPME: ANALYSIS OF CROSS-LINKAGES AND AGREEMENTS WITH OTHER ORGANIZATION	12
9. RESOURCE IDENTIFICATION - INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA), INTERNATIONAL MARITIME ORGANIZATION (IMO), SUPPORTING AGENCIES	12
10. THE PANEL AND THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED)	13
11. OTHER MATTERS	13
12. ELECTION OF OFFICERS	13

13.	DATE AND PLACE OF NEXT SESSION	14
14.	ADOPTION OF THE SUMMARY REPORT	14
15.	CLOSURE	14

ANNEXES

I	Agenda
II	Adopted Resolutions
III	List of Participants

1. OPENING

1 The First Session of the Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment (GIPME) Programme was opened by the Secretary IOC, Dr. Gunnar Kullenberg, and Dr. Makram Gerges, Acting Deputy Director of the Oceans and Coastal Areas Programme Activity Centre, UNEP (OCA/PAC), representing the Executive Director of UNEP, at 10 a.m. on Wednesday 4 March 1992 at the UNESCO Headquarters, Paris.

2 Dr. Kullenberg traced the history of the Panel, highlighting the various Resolutions of the IOC Assembly and Executive Council and the Decisions of the UNEP Governing Council that constitute the legislative basis for the establishment of the Joint Intergovernmental Panel of GIPME. He said the Session marked a new phase in the development of GIPME and the co-operation between IOC and UNEP. UNEP has co-sponsored the GIPME Groups of Experts for a number of years. Such co-operation has broadened over the last years and is now also concerned with ocean and coastal zone observations including the development of the Global Ocean Observing System; climate related matters in the UNEP-IOC regional task teams on climate impact assessment; the preparation of several documents for UNCED including the Strategy document on protection and management; in the International Musselwatch Project which in its field sampling phase is on-going in the Caribbean and Latin America; in the ROPME region through the United Nations Interagency Plan of Action. He remarked that regional co-operation is evident but that the activities of both UNEP and IOC need to be harmonized especially in planned Regional Seas Areas like the Black Sea and North-west Pacific.

3 One major objective of the Panel, he pointed out, is provided in the Annex to Resolution EC-XXIII.2, item (iii), namely that *"the Panel should provide overall guidance to IOC and UNEP to harmonize regional and global programmes and actions, and serve as a new instrument for ensuring that scientific advancements in the Programme are made available for action in environmental management, protection and assessment"*. He requested the Panel to focus attention on the strategies to achieve this objective.

4 He stressed the need for solidarity in present circumstances for the benefit of all Member States - between nations, on a global scale, and between organizations, pointing out that no single nation or organization can alone tackle our present day problems.

5 Finally, Dr. Kullenberg said that as one who has been involved in the development of GIPME both from outside and within the Secretariat, he was delighted to welcome participants to this First Session and he wished them successful deliberations.

6 Dr. Makram Gerges welcomed the Delegates on behalf of UNEP Executive Director, Dr. Mostafa Tolba, noting the importance of the occasion as a landmark in the co-operation between UNEP and IOC which has been in existence for many years. He pointed out the active participation of IOC in the Regional Seas Programme as an implementing agency for several projects in many of the Action Plans developed for different Regional Seas and that UNEP is presently co-sponsoring the three Expert Groups of GIPME. This co-operation has already yielded positive results in terms of harmonizing methods used in marine pollution monitoring and research and in the development of joint mechanisms to ensure quality control of data, intercalibration of methods and data management. The successful merging of the UNEP and IOC Regional Pollution Monitoring and Research Programme in the Caribbean and South-East Pacific regions is another example of effective co-operation. The early response of both organizations to the war-related environmental degradation in the ROPME

Region and the subsequent development of the Integrated Project Plan (IPP) for the Coastal and Marine Environment of the ROPME Region which has led to the on-going multi-disciplinary research cruise on board the Research Vessel of the United States National Oceanic and Atmospheric Administration (NOAA) is a source of pride to all involved.

7 In closing, Dr. Gerges congratulated members of the Panel for their nomination, wishing them success in their task of providing co-ordination and guidance on the harmonization and implementation of the scientific and management components of the activities of IOC and UNEP with a view to optimizing the use of available and future resources.

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

8 The Panel adopted the Provisional Agenda as the Agenda for the Session (Annex I) with the following addition:

9 Agenda Item 5.3 - Co-operation with other Bodies.

2.2 ELECTION OF CHAIRMAN, VICE-CHAIRMEN AND RAPPORTEUR

10 Dr. Neil Andersen, Chairman of the Scientific Committee for GIPME, was proposed as Chairman of the Session and elected by acclamation.

11 Dr. Dieter Schmidt of Germany and Prof. Youssef Halim of Egypt, representing the Red Sea Action Plan Region, were elected as Vice-Chairmen while Dr. Mahmood Youssef Abdulraheem representing the Kuwait Action Plan Region, was elected as Rapporteur. The List of Participants is given in Annex III.

2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

12 The IOC Technical Secretary, Dr. Chidi Iba, introduced the Provisional Timetable and announced that the Session would work in plenary but that it would be necessary at the appropriate times to set up Drafting Groups in the course of the Session to assist in drafting Resolutions and Recommendations.

13 The Documentation for the meeting was explained by the Technical Secretaries, Drs. Makram Gerges and Chidi Iba.

14 The Chairman, Dr. Andersen, provided comments which were meant to serve as guidelines and boundaries for the deliberations of the meeting.

15 He saw the basic objective of this first session, as that of creating a framework within which the regional activities of IOC and UNEP in the field of marine pollution research and monitoring, could achieve the degree of collaboration and co-operation which presently exists between the parent agencies. The aim is to consolidate what is going on, not create new programmes, and he emphasized that the process should be an interactive and iterative one. Specifically, he noted that to achieve such harmonization, two questions were before the Panel: how to effectively accomplish this in regions where it was not happening already; and how to monitor the progress. In this respect, Dr. Andersen pointed out that two considerations should be borne in mind when seeking answers to these questions. First, in some cases there exists already a reasonable degree of co-operation, for example, in the Caribbean. These should be further nurtured and used as examples when

addressing other regions. Second, the regional activities of IOC and UNEP do not always cover the same geographic area. This should not be an obstacle in moving forward. Accommodation can be made where necessary; for example, the possible creation in future of sub-regional groups to cater to this reality.

16 He noted that there was a further consideration that gave additional importance to the Panel being successful in reaching its goals; namely, as the global research initiatives addressing global climate change issues wound down in the late 1990s, it was imperative that a structure and mechanism be in place to allow for the continued monitoring of the variables presently being measured in these programmes. MARPOLMON and the Regional Seas Programme activities in Marine Pollution have the necessary characteristics for allowing this to be achieved as long as their activities are sufficiently harmonized. If they did not exist, something similar would have to be created for this purpose. He noted the on-going development of the Global Ocean Observing System in this context and emphasized the need for adequate co-ordination with that development.

17 Finally, Dr. Andersen said that although the Panel was created to serve the interests of IOC and UNEP, other appropriate organizations should also be kept in mind. Dr. Andersen pointed out that his remarks were essentially the substance of Agenda Items 5 and 8, which constitute the heart of the Session and upon which resolutions should be developed and adopted, with Agenda Items 3 and 4 providing the necessary background information.

3. UNEP REGIONAL SEAS PROGRAMME (URSP) - HISTORY, PRESENT STATE AND COLLABORATION

18 The Technical Secretary of UNEP, Dr. Makram Gerges, introduced Document IOC-UNEP/IGP-GIPME-I/9 and gave a presentation on the history of the Regional Seas Programme of UNEP, tracing the development of the various Regional Seas Conventions and Action Plans for the existing ten Regional Seas Programmes as well as the evolution of their activities. He also gave the state of development of two additional Regional Seas Programmes. It was indicated that the Regional Seas Action Plans are conceived as action-oriented programmes designed to respond to the needs of the respective regions as identified by the Governments concerned and aim to link assessment of the quality of the marine environment and the causes of its deterioration with activities for the management and development of the marine and coastal environment.

19 Dr. Gerges referred to the areas of mutual interest for both UNEP's Regional Seas Programme and IOC's MARPOLMON and to the areas of collaboration between the two organizations. In most of the Regional Seas Programme areas, IOC has been actively involved in the implementation of specific activities of the Action Plans, particularly in the assessment component and the relevant marine pollution monitoring programmes.

20 It was further highlighted that UNEP, in all its Regional Seas areas, has adopted a comprehensive approach to marine pollution monitoring, assessment and control, whereby the ultimate goal of any regional monitoring programme would be to provide the Governments of the region with concrete recommendations for pollution control. This could also be seen as the scientific basis of the national/regional coastal zone management plans being developed by these Governments, and as a contribution to the Global Environment Monitoring System (GEMS).

21 The technical support of GIPME, through its Groups of Experts GEMSI, GESREM and GEEP, was emphasized as an important input toward the development and harmonization of common methodologies and reference materials for marine pollution studies. The efforts in this area would now be further strengthened by the establishment of this Joint Intergovernmental Panel.

4. GLOBAL INVESTIGATION OF POLLUTION IN THE MARINE ENVIRONMENT (GIPME) - HISTORY, PRESENT STATE AND COLLABORATION

22 The IOC Technical Secretary, Dr. Chidi Ibe, introduced Document IOC-UNEP/IGP-GIPME-I/10. He said the GIPME Programme was adopted in response to recommendations of the United Nations Conference on the Human Environment (Stockholm, 1972) and thus owes its development to the same event as the UNEP Regional Seas Programme. The first Comprehensive Plan for GIPME was issued in 1976 (IOC Technical Series No. 14), the same year in which the first meeting of the Working Committee for GIPME was held. Six other meetings of this Committee have since been organized, the last one in Paris, 24-25 January 1991.

23 A 1984 review (IOC Technical Series No. 25) of the Comprehensive Plan for GIPME found no need to change either the scientific and philosophical basis or the larger strategies for implementation. However, a recurring debate has been on how to achieve the right balance between regional and global activities. At the last Session of the Committee for GIPME, it was agreed that GIPME could be conceptually viewed as bi-modal, that is regional activities being implemented under the umbrella of MARPOLMON, which, in concert, would comprise a global picture, and the other components of the Programme which constituted the research and global elements of the programme.

24 At that meeting also, the Second Action Plan for GIPME (1991-93) (Document IOC-GIPME-VII/3, Annex IV) and a document entitled "Future Development of MARPOLMON (Document IOC/GIPME-VIII/3, Annex V) were produced and endorsed.

25 Implementation of the Second Action Plan for GIPME is well on its way after approval by the IOC Assembly at its Sixteenth Session (7-22 March 1991). The *Ad hoc* meeting of GEMSI (Bermuda, 15-20 July 1991) improved the MARPOLMON document but deferred further work on it pending the outcome of the First Session of this Panel. GEMSI felt that in view of the recent decision of UNEP to co-sponsor the GIPME Programme with IOC it was timely and appropriate to include in the MARPOLMON review process, relevant UNEP Regional Seas (Ocean and Coastal Areas) Programme activities. The Regional Seas Areas, in many cases, overlap with IOC MARPOLMON areas and it is therefore sensible to deal with all regional marine pollution programmes of both IOC and UNEP contemporaneously. The ultimate intention is to prepare an assessment of regional issues and activities in a holistic context. This will open the way for the preparation of an update to IOC Technical Series no. 25 about mid 1994.

26 On the issue of collaboration, the IOC Technical Secretary expressed the hope that the co-sponsorship of GIPME by UNEP will be so successful as to provide the trigger mechanism for similar co-operation with other relevant Agencies, particularly those that do not presently have such collaboration in one form or another. This hope was, indeed, expressed in the report of the First Session of the Working Committee on GIPME in 1976.

5. **FUTURE DIRECTIONS OF GIPME TO RESPOND TO MARPOLMON AND REGIONAL SEAS PROGRAMME REQUIREMENTS: THE SECOND GIPME ACTION PLAN (1991-1993) AND PRIORITIES**

27 The UNEP Technical Secretary introduced Document IOC-UNEP/IGP-GIPME-I/9 which describes programmes of UNEP's Ocean and Coastal Areas Programme Activity Center. He referred to the existing co-operation at the global level between UNEP and IOC and expressed the hope that, with the co-sponsorship of GIPME, UNEP's involvement in all the GIPME related programmes will be more complete.

28 The IOC Technical Secretary referred to the Second GIPME Action Plan (1991-1993), as contained in Document IOC/GIPME-VII/3, for details of planned actions within the programme in the near future. He requested delegates to make brief presentations of IOC Programmes with reference to the current GIPME Action Plan.

5.1 **GLOBAL ACTIVITIES**

5.1.1 **GIPME Groups of Experts**

Group of Experts on Methods, Standards and Intercalibration (GEMSI)

29 Dr. A. Knap, Chairman of GEMSI, provided a brief overview of past and recent activities in the Group regarding method development, intercomparison exercises and training. He also referred to work to improve mass balance considerations, especially exercises designed to improve knowledge of land/sea fluxes as well as atmospheric fluxes. He recalled the need to include trace organics as well as trace inorganics in measurements in the open-ocean baseline study. He also mentioned that the Group continues to review IOC Manuals and Guides and UNEP's Reference Methods.

30 Intersessional activities led to a review of all training courses and workshops carried out by the Group and led to the production of a guide for future exercises. Plans for GEMSI future work include a major review of needs of regional areas and integration of these needs into method development, training, etc. The Group is also involved in overseeing the current International Mussel Watch Project as well as its expansion. The Group will continue Quality Assurance/Quality Control development for regional areas, expand the open-ocean baseline study and help with methodological aspects for the regions to get involved in the Joint Global Ocean Flux Study (JGOFS).

31 The Group plans to include more regional representation and plans to continue its work on mass balances. It will also be working with GEEP in joint training exercises and workshops.

Group of Experts on Effects of Pollutants (GEEP)

32 The Chairman of GEEP, Dr. Brian Bayne, reported that during its first eight years, GEEP had successfully completed an intensive series of evaluations, training and intercalibration exercises. Methods for measuring the effects of pollutants were evaluated in three workshops and successful techniques packaged into a number of training activities such as benthic community analyses, biochemical and physiological indices of impact and biological response.

- 33 New techniques for measuring biological responses are continuously being proposed and GEEP will continue to evaluate these in planned workshops. Two examples were a new generation of molecular techniques, and the duplication of "expert system" technologies to the application of "effects techniques".
- 34 A new direction for GEEP concerned the measurement of the effects of biological impacts on the role of biota in biogeochemical processes in coastal seas. GEEP was also developing the means to establish indices of biodiversity in marine communities of organisms.
- 35 In future developments, and consistent with the objectives of this Intergovernmental Panel, GEEP would welcome closer involvement with the regional programmes of both UNEP and IOC and was actively considering the means of effecting this.
- 36 On behalf of the Regional Seas Programme, Dr. L.D. Mee congratulated Dr. Bayne on the relevance of GEEP's programme and approach to Regional Seas issues. He discussed the specific case of the Black Sea environment where recent reports have identified catastrophic losses of biodiversity and fisheries resources associated with land-based sources of pollution. The Global Environment Facility has recently approved a major initiative for the "Management and Rehabilitation of the Black Sea Marine Environment" and it would be appropriate for GEEP to be involved at an early stage in this project in order to investigate and link observed effects with causes and to assist governments and funding institutions to make appropriate investments in pollution control measures. The Panel endorsed this view.
- 37 The Delegate of Portugal, Dr. Mario Ruivo called for enhanced linkages with UNEP's Global Environment Monitoring System (GEMS) and the further development of GEEP as a system able to contribute to impact studies and the evaluation of biodiversity trends in coastal areas as well as in the establishment of marine parks and biosphere reserves.

Groups of Experts on Standards and Reference Materials (GESREM)

- 38 Dr. Andersen explained that the present Action Plan for GESREM called for the preparation of a manual describing the proper use of certified and working reference materials; status reports on the highest priority categories of reference materials needs; facilitate provision of reference materials to laboratories in developing countries; foster co-operative efforts toward developing new reference materials; and distribute a revised catalogue of reference materials. Preparation of two new reference materials, both based on mussel tissue, is underway. GESREM-1 will be certified for many trace metals and GESREM-2 for organic analytes including the organo-chlorine pesticides and chlorobiphenyls that are the focus of the IOC-UNEP International Musselwatch Programme. It was pointed out that problems had been encountered in the U.S. in preparing reference material for nutrients. The Canadian Delegate, Dr. Bowers, indicated that he would contact NRC-Canada in an attempt to resolve this problem. It was noted that the developing programme on Harmful Algal Blooms provides urgency to the need for such reference materials. The next session of GESREM is planned for late 1992 in Brussels.

5.1.2 International Mussel Watch

- 39 Dr. L. Mee described the present status of implementation of the International Mussel Watch Programme. The initial phase is taking place in the Americas.

40 A collector has been hired and samples from Costa Rica, Panama, Mexico and Argentina are in hand. The collector is presently involved in obtaining samples from Uruguay, Brazil and Chile; the U.S. and Canada are providing information from North America.

41 The International Laboratory for Marine Radioactivity (ILMR) of the International Atomic Energy Agency (IAEA) in Monaco, and the laboratory of Dr. James Brooks of the Texas A&M University in the U.S. have been identified as reference laboratories in the programme. All participating scientists will receive split samples to undertake their own analyses. It was pointed out that it was very important to secure data on production and use of pesticides being applied, so that complete interpretation of the data can be realized. Dr. Mee pointed out that although such data are not routinely published, much is available in the grey literature and in reports of various governmental organizations. GESREM reference material will be provided to all participating laboratories. It is anticipated that the analyses of samples and the preparation of a draft report will be completed by the end of 1992. A workshop is scheduled for early 1993, in Costa Rica, where interpretation of the data will be made and the report completed. It was pointed out by Dr. Andersen that planning for the next phases of the programme is in progress. The areas possibly to be covered are southeast Asia to close the Pacific Rim, and Africa. IOC will take the lead in the later geographical area, and the Mussel Watch Officers will supervise work in South-east Asia.

5.1.3 Open Ocean Baseline Study

42 Dr. Diether Schmidt informed the Panel that the first cruise materialized in 1990, following successful negotiation with the German authorities for ship time on board the RV METEOR. The cruise, concentrating on the detection of trace heavy metals (and relevant inorganic contaminants) in oceanic deep water masses of the Atlantic, covered a track in the South-east Atlantic from 13 March to 15 April 1990.

43 In April 1991, a special meeting of participants was held in Jekyll Island, Georgia, USA, to have an in-depth evaluation of the cruise results and data which proved very encouraging. A joint publication in a special issue of Marine Chemistry is planned.

44 A special session on "Trace Element Bio-geochemical Cycles in the Atlantic Ocean" was convened during the 1992 Ocean Sciences Meeting of the American Geophysical Union in New Orleans, Louisiana, USA. A number of papers from the RV METEOR Open Ocean Baseline Cruise were presented by participants, with very promising new results. Two informal sessions were held to further evaluate and discuss the results and to plan co-operative publications, as well as to plan the next cruise with RV C.S.S. HUDSON to the North Atlantic Ocean in 1993.

45 The Delegate of Canada said that there is a need to confirm IOC's partial financial support for the Second Leg of the Baseline Study to be conducted from the RV C.S.S. HUDSON in mid-1993. One outstanding concern is the inclusion of attention to trace organic contaminants in the cruise leg. Although there exists justifiable concerns about the limited expertise available for measurement of trace organics (specifically organochlorine congeners), it would be regrettable if the opportunity to obtain state-of-the-art measurements of organics in deep water formation regions was not seized even if such measurements can only be made by a single laboratory.

46 The Panel expressed concern about delays in the completion of the Pilot Open Ocean Baseline Study in the Atlantic Ocean, particularly in identifying firm donations of suitable ship-time for the occupation of the

remaining stations in the western Atlantic. It was stressed that similar baseline measurements were urgently required in other major ocean basins (e.g. the Indian Ocean). While GEMSI has already designed a baseline study extension into the Antarctic circumpolar region and stands ready to formulate similar plans for other major ocean basins, it was most eager that the Atlantic Baseline Study be completed first.

47 The Delegate of the Islamic Republic of Iran stressed the need to extend the studies to other oceans and also recommended a training component. The Chairman informed the Panel of certain initiatives by Japan to carry out similar studies in the future in the Pacific Ocean.

5.1.4 Harmful Algal Bloom

48 Mr. H. Enevoldsen, Associate Expert in the IOC Secretariat, informed the Panel that the overall goal of the Harmful Algal Bloom Programme is to foster the effective management of, and scientific research on, harmful algal events in order to understand their causes, predict their occurrences, and mitigate their effects.

49 The Twenty-first Session of IOC Executive Council, in March 1988, welcomed relationships between the harmful algal elements of Ocean Science and Living Resources (OSLR) and relevant elements of the GIPME Programme and recommended appropriate interactions.

50 There are two major divisions of the problem - scientific and operational. The scientific programme can be separated into three branches: ecology and oceanography; taxonomy and genetics; and toxicology and toxin chemistry. The operational problems can be divided into four branches: resource and aquaculture management; information network and training; monitoring; and public health and sea food safety. There are many interactions between the divisions, e.g. fisheries management questions benefit from knowledge of the ecology and dynamics of blooms; monitoring is based on information about ecology, oceanography, taxonomy and toxicity.

51 The Harmful Algal Bloom Programme is in the phase of being designed. The aim is to involve a wide range of international and national programmes and organizations in the process.

52 There is no intention to duplicate on-going activities but rather to provide the global framework into which on-going and new activities would be linked.

53 The IOC Assembly, at its Sixteenth Session, Paris, 7-21 March 1991, adopted a resolution with respect to the formation of an *Ad hoc* Intergovernmental Panel on Harmful Algal Blooms in order to identify adequate resources for a sufficiently broad programme to solve some of the real problems caused by algal blooms. The First Session of the Panel is planned for 23-25 June 1992, Paris.

54 Standardization of Methods, improvement of such methods, identification of Standards and Reference Materials are core targets in several branches of the Harmful Algal Bloom Programme which represent opportunities for co-operation with the GIPME Groups of Experts, especially GESREM and GEEP.

5.1.5 Mass Balances and Land-based Sources

55 On behalf of GEMSI, Dr. Bewers noted that an essential component of the GIPME Programme is the assessment of contamination of the marine environment, particularly its regional areas. One of the techniques that is useful for obtaining such assessments, which is specifically highlighted in the Comprehensive Plan for GIPME (IOC Technical Series no. 14), and the subsequent "Framework for the Implementation of the Comprehensive Plan for GIPME" (IOC Technical Series no. 25), is mass-balance construction. Mass-balance approaches have been very useful in evaluating the state of scientific knowledge regarding specific contaminants on a large-scale, often global, basis (in ICES, for example). There is a need for GEMSI to devote increased effort towards the construction of mass-balances for regional marine areas to the benefit of both IOC and UNEP regional (i.e. MARPOLMON and Regional Seas) programmes. IOC Technical Series no. 25 stresses that a major limitation to regional mass-balance construction was the lack of reliable contaminant input flux information. Corrective measures were adopted by GEMSI to improve the amount, quality and diversity of such input information.

56 The increased attention of GEMSI to input fluxes of contaminants has focussed on measurements of riverine discharges of specific contaminants. In this regard, GEMSI conducts regional training/intercalibration workshops on methodologies for assessing contaminant levels and fluxes, focusing on specific contaminants of regional concern. These activities will continue as a means of enhancing the availability of information needed to construct mass-balances for regional marine areas. It is important in this context to point out the role of the Member States and their national agencies in obtaining relevant and adequate input data.

5.2 REGIONAL ACTIVITIES

57 In the discussion of regional activities, the UNEP Technical Secretary again referred the Panel to Document IOC-UNEP/IGP-GIPME-I/9 and highlighted the more recent achievements of UNEP in the field of marine pollution research and monitoring in their Regional Seas Programmes, noting that co-operation was good in certain regions such as the Wider Caribbean Region where UNEP and IOC marine pollution programmes were harmonized in a joint project "Marine Pollution Assessment and Control Programme for the Wider Caribbean (CEPPOL)". He indicated that the success of this project should serve as a model for the Panel in their effort at harmonization of MARPOLMON and the marine pollution monitoring programmes of the Regional Seas Programme.

58 Referring to Document IOC-UNEP/IGP-GIPME-I/8, the IOC Technical Secretary recounted the GIPME activities carried out in the period between 1 January and 31 December 1991. He pointed out that in some areas particularly where the Regional Seas Programme Areas overlap with IOC subsidiary bodies, the co-operation was quite good. In other areas, there is greater and more urgent need to harmonize the activities of the two agencies.

59 The delegates from Kuwait Action Plan, Eastern African Action Plan and West and Central African Action Plan regions stressed that maintenance and calibration of equipment, and the non-availability of essential laboratory supplies were still problems facing most regional programmes especially in developing countries. Resolutions IGP-GIPME-I.1 and I.2 were adopted.

5.3 CO-OPERATION WITH OTHER BODIES

Co-operation with Regional Organizations/Institutions

60 The Panel recognized the great potential embodied in co-operation with other agencies. The Kuwait Action Plan delegate suggested that the Regional Organization for the Protection of the Marine Environment (ROPME) would welcome greater involvement of the GIPME Panel in implementing marine pollution projects related to ROPME.

Collaboration with other agencies

61 The Delegate of Malta described how the Council of Europe, through its Open Partial Agreement on the Prevention of, Protection Against, and Organization of Relief, in Major Natural and Technological Disasters, supports a network of ten specialized centres, two of which deal specifically with marine contamination related problems. These two Centres, which are based in Malta and Monaco, are involved with Programmes relevant to GIPME activities.

62 The Director of the Euro-Mediterranean Centre on Marine Contamination Hazards, in Malta, took this opportunity to offer the facilities and resources of his Centre towards future co-operation with GIPME.

63 The Joint Secretariat welcomed this move and agreed that ways should be explored on how to enhance co-operation with the Council of Europe. It was also pointed out that IOC had already received welcome assistance from the Centre in Monaco, referring to the involvement of that Centre in the formulation and execution of the Integrated Project Plan (IPP), as well as from the Centre in Malta in the organization of IOC co-sponsored training courses.

6. GIPME INTERACTIONS WITH OTHER IOC AND UNEP PROGRAMMES

6.1 TRAINING, EDUCATION AND MUTUAL ASSISTANCE (TEMA)

64 Dr. K. Kitazawa, Acting Head of the IOC-TEMA Programme, informed the Panel about recent activities within that programme. Recalling the recommendations made during the Seventh Session of the Committee for GIPME, Paris, 21-25 March 1991 (Document IOC/GIPME-VII/3), he said that GIPME-TEMA interactions have improved as a result of those recommendations. TEMA has continued to support the GIPME training activities, particularly at the regional level. This has included both group and individual training. He informed the Panel that opportunities to obtain extra budgetary funds are being explored, such as funding and sponsorships from the Japan International Co-operation Agency (JICA), the Commission of European Communities and the USA. The Panel expressed its appreciation of these initiatives and appealed to Member States to make more training opportunities, including shipboard apprenticeships, available to the GIPME Programme.

65 The UNEP Technical Secretary outlined the recent training activities carried out under the UNEP Regional Seas Programmes. Such activities have been implemented through agencies like IOC, FAO, IAEA. As a result of this arrangement, there has been greater success in harmonizing the training programmes of different agencies. The Panel recommended a consolidation of this arrangement.

6.2 INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE)

66 The IOC Technical Secretary introduced the GIPME-IODE interactions by recalling the discussions at the Seventh Session of the Committee for GIPME in 1991. The Panel noted the absence of any substantial progress in terms of the recommendations of that meeting, including the need for improved access to oceanographic data and information, but also observed that certain positive elements in the development of the overall IODE Programme may open the way for the realization of those recommendations.

6.3 COASTAL ZONE MANAGEMENT

67 The UNEP Technical Secretary indicated that Coastal Zone Management is a very important component of the UNEP's Oceans and Coastal Areas Programme. He informed the Panel that activities on Coastal Zone Management are being implemented through:

- (i) the Regional Seas Programme by advancing its comprehensive approach for marine pollution monitoring, assessment and control with a view to recommending control measures based on the results of these activities; and
- (ii) in the framework of climate change related activities.

These are considered as main input into the Integrated Coastal Zone Management Plans being developed jointly by UNEP and national governments in selected regions.

68 The Panel was also informed of the activities of IOC on Coastal Zone Management and in particular of projects in Eastern Africa and the Caribbean supported by funds from Swedish SAREC.

7. GIPME AND GLOBAL CHANGE PROGRAMMES

69 Presently, the Joint Global Ocean Flux Study (JGOFS) seems to be the only on-going programme of those addressing global climate change with which GIPME has developed interactions.

70 Dr. Andersen informed the Panel that IOC has been involved with JGOFS since its inception. At the present time, the Equatorial Pacific Process Study is being implemented. The second planning Session of the Indian Ocean Fluxes Study will be convened 5-6 October 1991 after the JGOFS Steering Committee Meeting in Bermuda. The IOC is assisting SCOR in the implementation of the Indian Ocean Process Study with emphasis being placed on the training and education aspects. Training courses are planned for Mombasa (with German support), Mauritius (with Dutch support) and Oman (with US support). Dr. Knap is preparing a set of protocols for basic measurements, querying through on the offer made to JGOFS at its Steering Committee Meeting in Washington, December 1990. The IOC is working on identifying individuals from the region to become involved in the planning of the Indian Ocean Process Study, as well as in installing telemail mailboxes.

71 However, other emerging global change programmes such as the Global Ecosystems Dynamics Programme (GLOBEC) and the Land Ocean Interaction in the Coastal Zones (LOICZ) are relevant to GIPME and it is recalled that GIPME-VII gave strong endorsement to proposals by the Secretariat to pursue the establishment of ties between them and GIPME. In this respect also, there has been discussions between the GIPME Secretariat and Dr. Ala Tsyban of the Joint Russian-American Project "BERPAC" to establish formal links between

GIPME and BERPAC. Briefing the Panel, the Delegate of Russia, Dr. Tsyban, recalled that the BERPAC Project is a programme for long term ecological research of ecosystems of the Bering and Chukchi Seas and the Pacific Ocean and that it is characterized by integrated investigations of the basic components of marine ecosystems. She called for closer links between BERPAC and GIPME and invited the GIPME Secretariat to participate in a forthcoming BERPAC Symposium in April 1992.

72 The developing Global Ocean Observing System (GOOS) is of direct interest and the programme on the Health of the Oceans is one of the accepted modules of GOOS. The Panel was informed of the contributions of GIPME in the development of the GOOS plan and mandated the Chairman of the Scientific Committee of GIPME to continue to work with the GOOS Office to ensure a continued GIPME input.

73 In discussing global activities in relation to the marine environment, the Panel recognized that compatibility and interdependence of such activities with the national/regional priorities should be ensured and the need to implement the suite of actions in an interactive and mutually supportive way.

8. **ROLE OF THE INTERGOVERNMENTAL PANEL ON GIPME: ANALYSIS OF CROSS-LINKAGES AND AGREEMENT WITH OTHER ORGANIZATION**

74 The Secretariat introduced UNEP's Governing Council Decision 16/26A and the preceding IOC Executive Council Resolution EC-XXIII.2 and its Annex on the Co-sponsorship by IOC and UNEP of the GIPME Programme and the Establishment of a Joint IOC-UNEP Intergovernmental Panel for GIPME.

75 The Terms of Reference for the Joint Panel were endorsed with the following editorial amendments (Annex):

(II rev.) Promote overall co-ordination, provide guidance and harmonize the implementation of the scientific and management components of the activities of IOC and UNEP Regional Seas Programme, within this field, with a view to optimizing the use of available resources.

(v/bis) Co-operate closely with regional organizations with a view to harmonizing and integrating the regional programmes into that of UNEP and IOC and other relevant international organizations.

76 Several members of the Panel emphasized the need to seek the co-operation of ICES and other appropriate organizations and regional bodies.

9. **RESOURCE IDENTIFICATION - INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA), INTERNATIONAL MARITIME ORGANIZATION (IMO), SUPPORTING AGENCIES**

77 The Panel recognizes that in spite of the fact that activities relevant to its objectives are being carried out by other international agencies (e.g., WHO, FAO, IMO and IAEA), co-operation is hindered by the severe limitation of funds. Alternative innovative mechanisms must be pursued by adopting practical approaches in which the Panel acts as a clearing house, communicating development of activities, identifying projects to potential donors and advising Member States and regional organizations of potential funding mechanisms and sources. Elected officers could pursue this role during the intersessional period.

10. THE PANEL AND THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED)

78 The Technical Secretaries informed the Panel that IOC and UNEP co-operated in the preparation of a Strategy Document entitled "Proposals for Strategies for the Protection and Development of the Oceans and Coastal Areas" as an input to the UNCED Process. The two Agencies, in conjunction with other relevant United Nations Agencies, helped prepare the Draft Agenda 21 on "Protection of the Oceans, all kinds of Seas including enclosed and semi-enclosed seas, coastal areas and the protection, rational use and development of their living resources".

79 The Technical Secretaries said that it was now incumbent on Member States of the two Agencies to carry on the commitment, through their representatives, of getting due recognition for the relevance of IOC and UNEP and their programmes in environmental protection including the control of pollution and the investigation of the impacts of expected climate change.

80 Several delegates who are also involved in the UNCED process pledged to work in this direction.

11. OTHER MATTERS

81 The only item raised here was the organization of GIPME-VIII. The Chairman, Dr. Andersen, informed the Panel that the Eighth Session will be held in Kingston, Jamaica, in the first quarter of 1993 and indicated that it would be desirable to convene a Scientific Seminar back to back with the Eighth Session.

82 The Delegate of Canada suggested that the Seminar be used as a forum for assessing the progress of IOC's MARPOLMON and the marine pollution activities under UNEP's Regional Seas Programme. This would be highly beneficial to GEMSI in completing its review of both regional marine pollution monitoring programmes, which in turn will assist the Panel in rationalizing and harmonizing the two programmes. It was further agreed, upon the suggestion of the Joint Secretariat, that the primary focus of the Seminar would be on the Caribbean where the harmonization of both IOC and UNEP programmes on marine pollution has been effective.

83 The Panel endorsed this suggestion and requested the Joint Secretariat to work towards its realization.

84 The Delegate of Russia informed the Panel about a national project "Ecological Monitoring of Russian Seas" which is carried out on a single methodological basis in the coastal regions of the internal and marginal seas of the former USSR and invited the collaboration of the GIPME Programme. The Panel decided that this project has all the potentials of a regional project and requested the Joint Secretariat to maintain an interest in and some form of collaboration with the project.

12. ELECTION OF OFFICERS

85 Dr. Mario Ruivo (Portugal) was elected as Chairman while Professor Youssef Halim of Egypt (Red Sea Action Plan) and Dr. Hassan Mohammadi (I.R. Iran) as Vice-Chairmen. Dr. J.K. Bowers was elected as the Liaison Officer with the Committee of GIPME and other scientific organizations.

86 In congratulating the newly elected officers, the Chairman of the Session emphasized the need for them to bear in mind that the Panel, being a joint creation of IOC and UNEP, should carry out its work in a totally neutral manner with a view to catering for the interests of both organizations.

13. DATE AND PLACE OF NEXT SESSION

87 This decision was left to the discretion of the Joint Secretariat in consultation with the Officers of the Panel.

14. ADOPTION OF THE SUMMARY REPORT

88 The Draft Summary Report was adopted with few amendments.

14. CLOSURE

89 The meeting was closed by the Chairman, Dr. Neil Andersen, by 12.30 p.m. on Saturday 7 March 1992.

ANNEX

AGENDA

1. OPENING
2. ADMINISTRATIVE ARRANGEMENTS
 - 2.1 ADOPTION OF THE AGENDA
 - 2.2 ELECTION OF CHAIRMAN, VICE-CHAIRMEN AND RAPPORTEUR
 - 2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION
3. UNEP REGIONAL SEAS PROGRAMME (URSP) - HISTORY, PRESENT STATE AND COLLABORATION
4. GLOBAL INVESTIGATION OF POLLUTION IN THE MARINE ENVIRONMENT (GIPME) - HISTORY, PRESENT STATE AND COLLABORATION
5. FUTURE DIRECTIONS OF GIPME TO RESPOND TO MARPOLMON AND REGIONAL SEAS PROGRAMME REQUIREMENTS: THE SECOND GIPME ACTION PLAN (1991-1993) AND PRIORITIES
 - 5.1 GLOBAL ACTIVITIES
 - 5.1.1 GIPME Groups of Experts
 - 5.1.2 International Mussel Watch
 - 5.1.3 Open Ocean Baseline Study
 - 5.1.4 Harmful Algal Blooms
 - 5.1.5 Mass Balances and Land-based Sources
 - 5.2 REGIONAL ACTIVITIES
 - 5.3 CO-OPERATION WITH OTHER BODIES
6. GIPME INTERACTIONS WITH OTHER IOC AND UNEP PROGRAMMES
 - 6.1 TRAINING, EDUCATION AND MUTUAL ASSISTANCE (TEMA)
 - 6.2 INTERNATIONAL OCEANOGRAPHIC DATA AND INFORMATION EXCHANGE (IODE)
 - 6.3 COASTAL ZONE MANAGEMENT
7. GIPME AND GLOBAL CHANGE PROGRAMMES
8. ROLE OF THE INTERGOVERNMENTAL PANEL FOR GIPME, ANALYSIS OF CROSS-LINKAGES AND AGREEMENT WITH OTHER ORGANIZATION
9. RESOURCE IDENTIFICATION - INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA), INTERNATIONAL MARITIME ORGANIZATION (IMO), SUPPORTING AGENCIES
10. THE PANEL AND THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED)
11. OTHER MATTERS
12. ELECTION OF OFFICERS
13. DATE AND PLACE OF NEXT SESSION

14. ADOPTION OF THE SUMMARY REPORT
15. CLOSURE

ANNEX II

ADOPTED RESOLUTIONS

Resolution IGP-GIPME-I.1

ENHANCEMENT OF IOC-UNEP CO-OPERATION ON THE IMPLEMENTATION
OF GIPME AT GLOBAL AND REGIONAL LEVELS

The Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment,

Having reviewed the state of on-going and planned activities of IOC and UNEP's Oceans and Coastal Areas Programme related to GIPME-MARPOLMON at both global and regional levels, including the activities of the relevant IOC regional subsidiary bodies and of UNEP's Regional Seas Action Plans,

Noting the progress achieved through the co-operation of IOC and UNEP in accordance with the spirit of the Memorandum of Understanding on Co-operation of August 1987, particularly with regard to the development of the scientific basis and methods for the marine pollution monitoring programmes and assessment of IOC and UNEP,

Realizing however that the implementation of some of the regional components of both MARPOLMON and the Regional Seas Monitoring Programme, despite all efforts, still require further development in order to respond effectively and on a regular basis to regional needs for pollution prevention and the protection and management of the marine environment and coastal areas,

Being aware that the success of marine pollution monitoring research and control activities in a region depends largely on the proper consideration of the nature and conditions of the regional marine environment of the region as well as on socio-economic conditions, priorities for environmental protection and capabilities and needs of the national institutes in the region,

Conscious of the importance of the protection of oceans and all kinds of seas as envisaged under Agenda 21 of the United Nations Conference on Environment and Development (UNCED),

I

- (i) Recommends to the Governing Bodies of IOC and UNEP, and their relevant regional subsidiary bodies, that they undertake practical steps towards greater optimization in the use of experience, skills and resources with a view to progressively developing an operational integrated marine pollution monitoring, assessment and coastal system based on MARPOLMON and the Regional Seas Programme that will adequately respond to the needs of Member States of both organizations and the international community;
- (ii) Urges the Secretariats of IOC and UNEP to promote early integration among the regional bodies of both organizations in those cases where the geographical boundaries are essentially common (e.g., in the Caribbean) and to undertake consultation among appropriate regional bodies in cases of mutual interest and geographical overlap (e.g., Western Pacific/East Asian Seas and Western and Central Indian Ocean) to provide greater harmonization of regional activities. The objectives of these initiatives should be to establish, in as timely and effective a manner

as possible, joint regional mechanisms for promoting the development of integrated marine pollution monitoring, assessment and control systems within the IOC-UNEP/GIPME Programme that constitute primary components of the GEMS/Earthwatch System;

Also urges the IOC and UNEP Secretariats to maintain mutual (and co-ordinated) liaison with multilateral marine pollution programmes lying outside the framework of IOC-UNEP/GIPME Programme, in order to ensure that the results of such programmes are considered in global and regional marine pollution assessments and that advantage is taken of opportunities for obtaining broader global coverage in marine pollution activities. To this end, the Secretariats should endeavor to co-ordinate their consultations with ICES, PICES, the various regional marine environmental protection commissions (e.g., the Helsinki Commission and the Oslo and Paris Commission) and other relevant multilateral initiatives and activities;

II

- (i) Decides to undertake in the intersessional period an in-depth review of mechanisms of the implementation of the scientific, management and control components of the activities of the IOC and UNEP's Regional Seas Programme with a view to making concrete proposals to their respective Governing Bodies concerning the harmonization of structures and procedures of both programmes, so as to ensure the compatibility of the regional components with global monitoring requirements, namely in the framework of GEMS/Earthwatch and GOOS;
- (ii) Decides also to explore possible avenues of support for the capacity building within/among developing Member States and the regional organizations participating in GIPME through available funding mechanisms such as the Global Environment Facility (GEF) and the European Community.

Resolution IGP-GIPME-I.2

REGIONAL ORGANIZATION FOR THE PROTECTION OF THE MARINE ENVIRONMENT (ROPME)

The Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment,

Recognizing and welcoming the Resolution of the 3rd special session of UNEP's Governing Council (UNEP/GCSS III/L7-II) on the State of the Environment and Resolution XVI-14 of the 16th Session of the IOC Assembly on the Oceanographic co-operation with the ROPME sea area,

Being aware of the contents of the ROPME/IOC Integrated Project Plan (IPP) which is the coastal/marine component of the ROPME/UNEP Consolidated Rehabilitation Programme (CRP),

Further stressing the importance of the research, monitoring, restoration and rehabilitation aspects of the CRP,

Noting that the resources required to implement the Plan are far beyond the present capabilities of the region,

Further recognizing the unique ecological importance and sensitivity of the ROPME Sea Area,

Recommends that a longer term programme be included beyond the 2 years of the IPP, and expresses its willingness to provide technical support through the GIPME Group of Experts to the ongoing activities as well as to the development of the longer-term programme;

Urges the channeling of all necessary resources to augment the on-going regional and international efforts for implementation of the plan as soon as possible; and

Endorses the proposed conference to be convened in the Islamic Republic of Iran in the 3rd quarter of 1993 by IOC in close co-operation with ROPME, UNEP and governments in the region. This conference will allow for an evaluation of the progress in the implementation of the IPP in light of data emanating from the first 18 months and permit for focussing on longer term impact assessment and rehabilitation aspects of the CRP.

ANNEX III

LIST OF PARTICIPANTS

I. PARTICIPANTS INVITED BY THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)

Canada

Dr. M. Bowers (Vice-Chairman
GIPME/GEMSI)

Marine Chemistry Division
Department of Fisheries and Oceans
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y 4A2

Tel: (902) 426-2371
Fax: (902) 426-2256
Tlx: 019-31552

Dr. Hassan Mohammadi
Head
International Affairs Office
Department of the Environment
187 Neiyatollahi Ave.
Tehran

Tel: 893 720
Tlx: 215 064
Fax: 898 246

Malta

China

Mr. Haiqing Li
Deputy Chief
Division of International State of
Oceanic Administration
1, Fuxingmenwai Ave.
Beijing 100 860

Tel: 867 283
Fax: 803 3515

Mr. Anthony Micallef
Director
Euro-Mediterranean Centre on Marine
Contamination and Hazards
Foundation for International Studies
St. Paul Street
Valletta

Tel: 240 746
Fax: 230 551
Tlx: 1673 FOUND MW

Germany

Dr. Diether Schmidt (Vice-Chairman)
Bundesamt für Seeschifffahrt und
Hydrographie
Labor Sülldorf
Wüstland 2
D-2000 Hamburg 55

Tel: 49-40-3190-3360
Fax: 49-40-3190-5033

Portugal

Dr. Mario Ruivo
Chairman
Liaison Committee with IOC Unesco
National Commission of Portugal
Av. Infante Santo 42/5°
Lisbon 1300

Tel: 351-1-3969061/62
Tlx: 351-1-3969064

Islamic Republic of Iran

Dr. Ghassem Djaberipour
Permanent Delegation of Iran
1, rue Miollis
75015 Paris

Tel: 45 68 33 01

Russian Federation

Dr. Alla Tsyban
Deputy Director
Institute of Global Climate and Ecology
Department of Ocean Ecology &
Monitoring
20-B, Glebovskaya Str.
Moscow

Tel: 160-24-09
Fax: 095-25-39-484

Sweden

Dr. Bernt Dybern
Director
Institute of Marine Research
Box 4
Lysekil

Tel: (523) 141 80
Tlx: 27108 NATFISH S

United Kingdom

Dr. Brian Bayne (Chairman GEEP)
Plymouth Marine Laboratory
Prospect Place, The Hoe
Plymouth PL1 3DH

Tel: (752) 22-27-72
Fax: (752) 67-06-37
Tlm: B. Bayne

Dr. David Pugh
Institute of Oceanographic Sciences
Deacon Laboratory
Brown Road
Wormley, Goldaming
Surrey GU8 5UB

Tel: 428 684 141
Fax: 428 683 066
Tlx: 858 833 OCEANS G

United States of America

Dr. Neil Andersen (Chairman)
Director (Chairman GIPME)
Chemical Oceanography Programme
Room 609
National Science Foundation
1800 G Street, NW
Washington DC 20550

Tel: (202) 357 7910
Fax: (202) 357 7621
Tlm: N. Andersen
Tlx: 7401424 NSFO

Ms. Dorothy Bergamaschi
Executive Secretary PIPICO
US Department of State (OES/OA)
Room 5801
Washington DC 20250

Tel: (202) 647 0239

Dr. Herbert Windom
Skidaway Institute of Oceanography
P.O. Box 13687
Savannah GA 3141
USA

Tel: 912-598-2490
Fax: 912-598-2310
Tlm: H. Windom

Venezuela

Dr. Castro Ruben Aparicio
Universidad de Oriente
Instituto Oceanografico de Venezuela
Caracas

Tel: (93) 653 606
Tlx: (93) 663 412

**II. PARTICIPANTS INVITED BY THE
UNITED NATIONS ENVIRONMENTAL
PROGRAMME (UNEP)**

Caribbean Action Plan

Dr. Raul Mederos
Head, Marine Pollution Laboratory
Instituto Inv. Transporte
Carr. del Asilo S/N, Casablanca
Aptado 17029
Havana
Cuba

Tel: (53) (7) 624 387
Tlx: 05 11 181 MITRONS
Fax: 537 33 31 44

Red Sea and Gulf of Aden Action Plan

Prof. Youssef Halim (Vice-Chairman)
Faculty of Science
Alexandria 21511
Egypt

Tel: (203) 5869661
Fax: (203) 4911794
Tlx: 54467

Kuwait Action Plan

Dr. Mahmood Abdulraheem (Rapporteur)
Environment Protection Department
P.O. Box 24395
Safat 13104
Kuwait

Tel: (2456) 833 34
Fax: (2456) 836 2421993

East African Action Plan

Mr. Evaristo F. Baquete
Director
National Laboratory for Water and Food
Hygiene
Ministry of Health
C.P. 264
Maputo
Mozambique

Tel: 425 178/492 813
Tlx: 6239

West and Central African Action Plan

Prof. Oludele Osibanjo
Resident Consultant
Federal Environmental Protection Agency
Federal Secretariat, Phase 2
P.M.B. 12620, Ikoyi
Lagos
Nigeria

Tel: 684 628
Fax: 234 16 611 531

South-East Pacific Action Plan

Dr. M.E. Jacinto de Gonzalez
Head
Marine Pollution Laboratory
Instituto del Mar (IMARPE)
Esquina Gamarra y Gral
Valle s/n° Chucuito
Gallao
Peru

Tel: 297 630 Anex 26
Fax: (5114) 290 533

**III. OBSERVER FROM NON-MEMBER STATE
OF THE INTERGOVERNMENTAL
OCEANOGRAPHIC COMMISSION (IOC)**

Dr. Ain Aitsam
Institute of Thermophysics and
Electrophysics
Academy of Sciences of Estonia
Paldosni Str.1
Tallin
Estonia

Tel: 453-598

IV. INTERNATIONAL ORGANIZATIONS

International Atomic Energy Agency
(IAEA)

Dr. Laurence Mee
Head
Marine Environmental Studies Laboratory
19, avenue des Castellans
Monaco

Tel: 935 044 88
Fax: 932 573 46
Tlx: IAEA.MONACO

V. JOINT IOC-UNEP INTERGOVERNMENTAL
PANEL FOR GIPME SECRETARIAT

Dr. Makram Gerges
Acting Deputy Director
OCA/PAC
UNEP
P.O. Box 30552
Nairobi
Kenya

Tel: (809) 297 1880
Fax: (809) 297 8143

Dr. Chidi Ibe
Senior Assistant Secretary IOC
Head
Marine Pollution Research and
Monitoring Unit
Intergovernmental Oceanographic
Commission
UNESCO
1, rue Miollis
75732 Paris Cedex 15
France

Tel: (33-1) 45 68 39 92
Fax: (33-1) 40 56 93 16
Tlx: 204461 Paris

VI. INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION

Dr. Gunnar Kullenberg
Secretary IOC
UNESCO
1, rue Miollis
75015 Paris
France

Tel: 45 68 39 80
Fax: (33-1) 40 56 93 16
Tlx: 204461 F
Tlm: IOC.SECRETARIAT

Dr. A. Knap (Chairman GEMSI)
IOC Consultant
Bermuda Biological Station for Research
St. George's
Bermuda GE 01

Tel: (809) 297 1880
Fax: (809) 297 8143
Tlm: A.Knap
Tlx: 3246 BA

Dr. Kazu Kitazawa
Senior Assistant Secretary
Tel: 45 68 39 89
(same address as above)

Mr. Yihang Jiang
Consultant
Tel: 45 68 39 94
(same address as above)

Mr. Henrik Enevoldsen
Associate Expert
Tel: 45 68 40 16
(same address as above)