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REPORT OF THE EXECUTIVE DIRECTOR ON THE IMPLEMENTATION OF THE MEDITERRANEAN ACTION PLAN AND RECOMMENDATIONS FOR FOLLOW-UP ACTIONS

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ACRONYMS

For the purpose of this report and its annexes the following acronyms, listed alphabetically, have been used:

ECE	:	Economic Commission for Europe
FAO	:	Food and Agriculture Organization of the United Nations
GFCM	:	General Fisheries Council for the Mediterranean of FAO
IAEA	:	International Atomic Energy Agency
ICC	:	International Computing Centre
ICSEM	:	International Commission for the Scientific Exploration of the Mediterranean
IMCO	:	Intergovernmental Maritime Consultative Organization
IOC	:	Intergovernmental Oceanographic Commission of UNESCO
IUCN	:	International Union for Conservation of Nature and Natural Resources
MAB	:	Man and the Biosphere
MED CRUISE	:	Joint cruise planned as part of MED POL
MED POL	:	Co-ordinated Mediterranean Pollution Monitoring and Research Programme
PAP	:	Priority Actions Programme of the Mediterranean Action Plan
RAC	:	Regional Activity Centre for MED POL pilot projects
UNDP	:	United Nations Development Programme
UNEP	:	United Nations Environment Programme
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
UNIDO	:	United Nations Industrial Development Organization
WHO	:	World Health Organization
WMO	:	World Meteorological Organization

I INTRODUCTION

1. The Mediterranean Sea is neither dead nor dying - but the slow, progressive deterioration of the environmental quality of the whole Mediterranean Basin, provoked by man's ever-increasing and often ill-planned activities, could only result in a situation which finally had to be confronted by a co-operative effort of all Mediterranean countries. A common awareness that something had to be done in order to protect the Mediterranean environment, on the health of which rests the well-being of its inhabitants, grew slowly but steadily and culminated in the Action Plan for the protection and development of the Mediterranean Basin adopted at the Intergovernmental Meeting in Barcelona, January/February 1975. The meeting was attended by 16 States ¹⁾ bordering the Mediterranean Sea. The Action Plan ²⁾ consisting of three interdependent, substantive components (legal: framework convention and specific protocols; assessment: research and monitoring of sources, pathways, levels and effects of pollutants; management: integrated planning) was conceived as a very complex, continuous web of activities in which no element was viewed as an end in itself. In this report and its annexes the progress achieved in implementing the Action Plan will be reviewed, and recommendations are presented for the future course of activities leading to the protection and environmentally sound development of the Mediterranean on:

- a legal framework for the joint regional activities undertaken as part of the Action Plan,
- an assessment of factors contributing to the protection and development of the region,
- activities ensuring the integrated planning of the region's socio-economic development,
- institutional and financial arrangements needed as support for the implementation of the Action Plan.

II FRAMEWORK CONVENTION AND ASSOCIATED PROTOCOLS

2. At the request of the Mediterranean Governments, UNEP convened the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea in Barcelona, 2 - 16 February 1976. Sixteen Governments ³⁾ attended the Conference which approved the texts of the three legal instruments ⁴⁾ listed below:

- Convention for the Protection of the Mediterranean Sea against Pollution
- Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft

- Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency
3. The Convention itself is comprehensive in scope and commits States in general terms to "take all appropriate measures.....to prevent, abate, and combat pollution of the Mediterranean Sea area and to protect and enhance the marine environment in that area" (Article 4). The Convention specifies the distinct sources of pollution for which controls should be implemented: pollution from dumping, ships, exploration and exploitation of the continental shelf and sea-bed, and land-based sources. There are also articles on co-operation in pollution emergencies, monitoring, scientific and technological co-operation, and liability and compensation.
 4. The Dumping Protocol closely follows the precedent of the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, and the 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft. The Protocol prohibits the dumping of substances on the "black" list, requires a prior special permit to be issued by the competent national authority for the dumping of substances on the "grey" list, and requires a general permit for the dumping of all other wastes or other matter.
 5. The second protocol adopted at Barcelona calls for co-operation among the parties "in cases of grave and imminent danger to the marine environment, the coast or related interests.....due to the presence of massive quantities of oil or other harmful substances resulting from accidental causes or an accumulation of small discharges which are polluting or threatening to pollute the sea" (Article 1). The Protocol provides for information exchange, co-ordination of communications, and assistance in emergencies. Parties to the Protocol may co-operate directly or through the Regional Oil Combating Centre (see paragraph 26).
 6. When the system of legal controls was discussed in preparatory meetings leading to the Conference of Plenipotentiaries, it was agreed that the Convention was too broad to provide meaningful protection on its own. Therefore, it was decided that no State may become a Contracting Party to the Convention without also becoming a Party to at least one of the Protocols. A Protocol will enter into force when at least six States have ratified it, and the Convention will enter into force simultaneously with the first Protocol that is ratified by the requisite number of States. On the basis of national processes now under way, it can be expected that these legal instruments will enter into force in 1978.
 7. At present, the Convention and two Protocols have been signed by fifteen States ⁵⁾ and the European Economic Community. Three States have deposited their instruments of ratification. ⁶⁾

8. As a first effort to develop other Protocols, UNEP, in co-operation with WHO, convened an Intergovernmental Consultation⁷⁾ concerning a draft Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources (Athens, 7 - 11 February 1977). The meeting revised the principles that had been suggested for inclusion in the Protocol, and, subsequently, these were discussed at a Second Intergovernmental Consultation (Venice, 17 - 21 October 1977) and used for the formulation of a preliminary draft of the Protocol⁸⁾. Continued negotiations on this draft will be held under agenda item 7 of the present meeting.
9. Preparing additional protocols to control pollution from the other sources covered in the Convention may be foreseen. In the light of the debates held during the Athens and Venice consultations it is possible to conclude that consensus may be reached on giving priority to the development of a protocol concerning specially protected marine and coastal areas (such as marine parks) and one related to pollution from sea-bed exploration and exploitation.

III ASSESSMENT OF THE STATE OF THE ENVIRONMENT

10. In order to fulfil the obligations stemming from the Convention and to provide the information needed for environmental management decisions, the Contracting Parties agreed "to establish ... programmes ... for pollution monitoring in the Mediterranean Sea Area and ... a pollution monitoring system for that Area" (Article 10) and "to develop and co-ordinate their national research programmes relating to all types of marine pollution in the Mediterranean Sea Area and to co-operate in the establishment and implementation of regional and other international research programmes for the purpose of this Convention" (Article 11).

Co-ordinated Mediterranean Pollution Monitoring and Research Programme

11. Seven pilot projects were originally approved at the 1975 Intergovernmental Meeting in Barcelona as part of a Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL):
 - MED I : Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters (IOC/WMO/UNEP);
 - MED II : Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms (FAO(GFCM)/UNEP);
 - MED III : Baseline Studies and Monitoring of DDT, PCBs and Other Chlorinated Hydrocarbons in Marine Organisms (FAO(GFCM)/UNEP);

- MED IV : Research on the Effects of Pollutants on Marine Organisms and their Populations (FAO(GFCM)/UNEP);
- MED V : Research on the Effects of Pollutants on Marine Communities and Ecosystems (FAO(GFCM)/UNEP);
- MED VI : Problems of Coastal Transport of Pollutants (IOC/UNEP);
- MED VII : Coastal Water Quality Control (WHO/UNEP).
12. The pilot projects are being carried out by existing national institutions. Participation in the projects is open to all institutions in the region, subject to nomination by their national authorities. At present 76 research centres from 15 Mediterranean countries actively participate in one or more of the pilot projects, and additional nominations are still being received. Participation in the pilot projects is not limited to well-developed research centres able to deal with the task in a complex way but is open to all institutions capable of a limited contribution in order to further their own development.
13. The pilot projects are organized with the close collaboration of UNEP and the specialized United Nations bodies, as indicated in the paragraph above, which have a major role in their implementation. Throughout the planning period, and in particular during the whole of the pilot project phase lasting until the end of 1978, a high degree of co-operation has been and is being maintained between UNEP, acting as the over-all co-ordinator, and these specialized United Nations bodies.
14. A number of technical meetings were held in 1975 at which the operational documents 9) 10) 11) were drawn up specifying all the details needed for carrying out each of the pilot projects. As an aid to participants in the projects several technical documents such as a directory, bibliographies, manuals and guidelines, have been prepared or are under preparation (see the list of background documents in UNEP/IG.11/Inf.1).
15. The monitoring and research activities to be undertaken by the research centres nominated are specified in an agreement signed between them and the relevant specialized United Nations organization co-operating with UNEP on the implementation of the programme. As of end October 1977, 107 individual research agreements had been signed, 20 cleared and prepared for signature, while 78 agreements were still being negotiated.

Other activities

16. The seven pilot projects of MED POI deal mainly with the coastal waters of the Mediterranean. Therefore, two additional pilot projects were added to the original seven : MED VIII (IAEA/IOC/UNEP) dealing with pollution levels of the open waters and the biogeocycle of the most important pollutants, and MED IX (UNESCO/UNEP) on the role of sedimentation in the pollution of the Mediterranean Sea.
17. A related project was initiated by UNEP on pollutants from land-based sources (MED X). The project has been carried out in close co-operation with the Governments of the region and a number of specialized United Nations bodies, including the ECE, UNIDO, FAO, UNESCO, WHO, IAEA. Its objective was to provide preliminary information on the type and quantity of pollution from major land-based sources and through rivers, and on the present status of waste discharge and waste management practices. The project stands as a concrete example of the linkage between environmental assessment and management in that its intention was to produce data that would assist Governments in the negotiation of the regional protocol on pollution from land-based sources (see paragraph 8).

Conclusions

18. The progress achieved in the implementation of MED POI and of related projects of the Mediterranean Action Plan and the preliminary results were reviewed at a recently convened Mid-Term Review Meeting¹²⁾ in Monaco, 18 - 22 July 1977.
19. Judging from the first reports received from the co-operating national research centres and from the Mid-Term Review Meeting, the programme has gained firm ground and provides a basis for systematic, national, marine pollution monitoring and research activities in many Mediterranean countries. UNEP's immediate role is now to exploit the momentum of this vigorous regional programme and transform it, with the backing of the Governments and the relevant parts of the United Nations system, into a permanent activity as envisaged by the Barcelona Convention.

IV ENVIRONMENTAL MANAGEMENT

20. The best national legislation or international agreement, even when based on a clear understanding of the causes and degree of environmental degradation, is ineffective unless environmentally-sound management practices are incorporated into daily activities and are applied in long-term strategies for socio-economic development. This was recognized in the Action Plan which calls for "a co-ordinated programme of concerted activities, aimed at better utilization of resources in the interest of the countries of the region and of their development, while being in accordance with sound long-term environmental management rules" (paragraph I/3 of the Action Plan)²⁾. Since 1975, several activities aimed at a better integrated planning of socio-economic development and rational management of natural resources have been initiated or supported by UNEP in the

Blue Plan

21. Within the environmental management component of the Action Plan, one of the most important activities is the development of what has come to be known as the Blue Plan, in which Governments, United Nations agencies, intergovernmental and non-governmental organizations co-operate. The Blue Plan calls for systematic surveys of major development and environmental protection activities carried out in the region and prospective studies of development trends based on the collection of data from the various countries of the region. The exchange of information between countries is a fundamental aspect of the Blue Plan.
22. At the Intergovernmental Meeting of Mediterranean Coastal States on the Blue Plan which was convened in Split, Yugoslavia, 31 January - 4 February 1977¹³⁾, Governments approved the Blue Plan and defined its objectives and the ways and means for its implementation, including its financial and institutional implications.
23. As part of the institutional structure approved for the Blue Plan at the Split meeting, UNEP has constituted a provisional Group of Co-ordination and Synthesis for the Blue Plan which has prepared the operational document for the implementation of the programme (UNEP/IG.11/Inf.6).

Priority Actions Programme

24. At the Split Meeting, Governments recommended the initiation of a Priority Actions Programme (PAP) which would focus on the application of sound environmental management practices in selected fields, using knowledge and experience already available in the region. The meeting identified certain priority areas requiring immediate action: namely, protection of soil; management of fresh water resources; management of marine living resources and aquaculture; human settlements; tourism; and soft technologies for energy, including solar energy.
25. Although the Executive Director is still seeking adequate financial resources for the initiation of the PAP, preliminary consultations with Governments and preparatory activities concerning its substance have been started. Responding to the Executive Director's invitation of 10 May 1977 several Governments have identified their interest in participating in activities related to:
 - comprehensive planning,
 - fresh-water resource management,
 - protection of soils,
 - use of non-conventional energy resources,

- training of environmental managers,
- publication of data relevant to environmentally sound developmental practices.

Details of these initiatives are given in Annex II to this report.

Oil Combating Centre

26. In connection with the Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency (see paragraph 5), the Barcelona Conference of Plenipotentiaries agreed to the establishment of a Regional Oil Combating Centre in Malta. The primary objective of the centre is to help coastal States of the region take co-operative and timely steps to prevent damage to their coastal resources from massive and accidental pollution by disseminating information, preparing contingency plans, maintaining efficient communication systems and encouraging technological co-operation and training programmes in the region.
27. During its relatively short existence the Centre has established links with national focal points in 16 Mediterranean countries, identified ways and means for co-operation with them, surveyed the existing national facilities available in cases of emergency and the needs for additional training in this field, and begun the preparation of subregional contingency plans.
28. At the request of the Governments a survey was made on the need for subregional oil combating centres and on the feasibility of their establishment in various parts of the Mediterranean (see UNEP/IG.11/Inf.8).
29. In co-operation with IUCN, steps were taken to identify Mediterranean marine parks and wetland areas which deserve greater attention and protection. In this connection UNEP convened an Expert Consultation in Tunis (12 - 14 January 1977) ¹⁴⁾ to review the present status of marine parks and wetlands, to discuss their importance and significance for the Mediterranean ecoregion, to formulate draft principles and guidelines for the establishment and management of specially-protected areas and to be advised on measures to be taken for the improvement of the present situation. Based on the recommendations of the Consultation, steps have been taken, through official channels, to identify the protected areas which may become members of an Association of Mediterranean Protected Areas and to develop the principles and guidelines for the selection, establishment and management of specially protected areas. A separate protocol concerning specially protected marine and coastal areas may be foreseen as part of the future programme (see paragraph 9).

Other activities

30. As a direct input into the environmental management component of the Action Plan, in the framework of MED VII pilot project on coastal water quality control (see paragraph 11), the first elements of a model code of practice (see UNEP/IG./BD.16) applicable in Mediterranean coastal water pollution control and an interim microbiological standard for the quality of Mediterranean recreational waters have been formulated (UNEP/IG.11/BD.7).

Conclusions

31. Under the integrated planning component of the Action Plan, the initiatives taken - despite limited staff, financial resources and time available - have demonstrated that something useful can be done in the field of environmental management. However, the work that has been accomplished so far will serve no purpose without a firm commitment from all those concerned to play an active role in the follow-up activities and to provide the required resources for their implementation.

V INSTITUTIONAL AND FINANCIAL ARRANGEMENTS

32. The activities reviewed above reveal numerous examples of the need for initial support from international and regional organizations to Governments and their national institutions, especially those of developing countries, to enable them to participate in the Action Plan so that in due course they may assume fuller responsibility. In accordance with the wishes of the Mediterranean Governments and with the assistance of the specialized agencies of the United Nations system, UNEP has developed the infrastructure necessary for the co-ordination of the agreed joint activities. National institutions have been helped to participate in regionally co-ordinated activities in view of the economic conditions in many Mediterranean States which do not yet permit adequate national funding. However, the support from UNEP rests on the assumption that the Governments of the region will themselves gradually cover the operating costs of such activities as UNEP's initial catalytic role is fulfilled. Examples of this support are given in the following paragraphs.
33. UNEP, as the organization responsible for carrying out the secretariat functions of the Convention (Article 13), has established a small Unit for co-ordinating the various activities undertaken within the framework of the Action Plan. The Unit operates from UNEP's Geneva Regional and Liaison Office and maintains permanent contacts with the Governments concerned, with the specialized organizations of the United Nations system involved in the implementation of the various projects and with the officially designated national institutions as appropriate. The total cost to UNEP of the Unit's activities, including the costs of the meetings organized for the adoption and reviewing of the Action Plan and its components, is approximately US\$ 1.5 million up to December 1977.

34. In accordance with Resolution 2 "Interim Arrangements" of the 1976 Barcelona Conference, and in order to facilitate the contacts between UNEP and the Government of Spain, which is the Depository Government for the Convention and Protocols, UNEP has established at the kind invitation of the Government of Spain an office in Madrid. UNEP's financial commitment relevant to the functioning of the Madrid office was approximately US\$ 40,000. up to December 1977.
35. Further to Resolution 7 of the 1976 Barcelona Conference IMCO was entrusted with the responsibility of operating the Regional Oil Combating Centre. In December 1976, the Centre was inaugurated in Malta. The operational costs of the Centre for the initial period of 28 months (ending December 1978) are shared between UNEP and the Government of Malta, with the Government of Malta contributing US\$ 120,000 in kind to UNEP's total cash support of US\$ 514,300.
36. The national institutions which were officially designated as participants in the various projects (see paragraph 12) of MED POL have been organized into a network of collaborating research centres. In consultation with the Mediterranean Governments and the specialized United Nations bodies concerned, seven national marine research centres were nominated by UNEP as Regional Activity Centres in August 1976. The ultimate aim is to strengthen these centres so they may become the nuclei of the networks and may eventually play a regional role in co-ordinating the work in the post-pilot-project phase of the Programme. Under general guidance from UNEP the technical operation of the Regional Activity Centres is entrusted to the relevant specialized United Nations organizations (GFCM of FAO, IOC of UNESCO, WHO and WMO).
37. Substantive support has already been provided by UNEP, through the co-operating specialized United Nations organizations, to the participants in MED POL in order to facilitate or make possible their full participation in the pollution monitoring and research activities. The total cost of implementing the pilot phase of MED POL (until the end of 1977) is estimated as US\$ 1.7 million to UNEP, US\$ 350 thousand (in services and staff time) to the specialized agencies and US\$ 5 million (in kind) to the Mediterranean Governments through the involvement of their national institutions.
38. In addition to large-scale, direct, financial support of the participants in MED POL, UNEP has secured, through the IAEA International Laboratory of Marine Radioactivity, a common maintenance service for analytical instruments used by national institutions for the Programme, and has organized a permanent intercalibration of analytical techniques mandatory for all participants in order to ensure the comparability of the results obtained. The cost of these activities is US\$ 130 thousand to UNEP and US\$ 25 thousand (in services and staff time) to IAEA.

39. The estimated total cost of US\$ 1,490,000 for the first phase of the Blue Plan was agreed to by the Split Intergovernmental Meeting. The sharing of the costs among the international organizations (25 per cent by UNEP and 25 per cent by others) and the Mediterranean countries (50 per cent) was also agreed to. By November 1977, 90 per cent of countries' contributions to the Blue Plan budget had been confirmed by several Governments. The same Governments have designated official focal points for the Blue Plan and the Priority Actions Programme.
40. As support for other activities listed earlier in chapters III and IV of this report (see paragraphs 16 and 17) UNEP's contribution was US\$ 550 thousand while the collaborating specialized organizations contributed US\$ 350 thousand, largely in services and staff time.

VI FUTURE DEVELOPMENTS

41. If progress continues at the present pace, it may be expected that the Barcelona Convention, together with one or more of the related Protocols, will enter into force in 1978. This will bring about the first meeting of the Parties to the Convention in early 1979 and could well coincide with the completion of the pilot project phase of the research and monitoring activities. The meeting should present an opportunity for intergovernmental consideration and decision on the establishment of an operational phase thereafter. At approximately the same time, under the environmental management component, initial results should be available from both the PAP activities and the Blue Plan studies, providing national decision-makers with authoritative information about short and long-term environmental implications of on-going development activities throughout the region. During 1978 the intergovernmental consultations on the Protocol on Pollutants from Land-Based Sources may lead to the signature of this Protocol and work on additional Protocols (see paragraph 9) may be initiated.
42. Consequently, the results of collective assessment activities throughout the Mediterranean will begin to be available in 1978 and will be useful to the Mediterranean Governments on whose national decisions rests the responsibility for environmentally-sound and sustainable development throughout the region. These activities should be continued within a permanent, systematic, environmental monitoring system as envisaged by the Convention and should become an integral part of the socio-economic activities called for in the Action Plan.
43. Increasingly responsible roles will have been assumed by national institutions on whose co-operative endeavours the successful implementation of the programme depends. Although additional international financial and other support may be sought, the ultimate aim is to make the programme self-supporting within the regional context; that is to say, not only to develop institutional capabilities to perform the required tasks but to support these activities with training, provision of equipment, and other forms of

44. As the Mediterranean regional activity becomes self-supporting, UNEP will continue to retain a strong interest, due both to its responsibility as the organization responsible for the secretariat functions of the Convention and to its global responsibilities to which the Mediterranean programme makes a major contribution. In this connection one of UNEP's tasks is to ensure, on a continuing basis, that data and information generated within this region are compatible with those from other regions of the world.
45. In order to ensure a smooth transition from the present activities co-ordinated by UNEP, under the general guidance of the Governments that negotiated the Convention, to activities fully controlled by the Contracting Parties to the Convention, it is of paramount importance that at the present meeting Governments clearly indicate:
- i) the activities they wish to see continued or initiated before the first meeting of the Contracting Parties and afterwards;
 - ii) the ways and means of their implementation;
 - iii) the institutional arrangements they would prefer, and,
 - iv) the financial burden they are willing to assume in relation to the activities agreed in the framework of the Action Plan.
46. To assist the Governments in this difficult task a set of general recommendations is suggested in this report while more specific recommendations are given in the annexes to the report.

VII RECOMMENDATIONS

47. As an expression of their full support for the protection and harmonious development of the Mediterranean Basin and the activities launched as part of the agreed Action Plan, the Governments of the Mediterranean States should ratify, with the shortest possible delay, the Convention for the Protection of the Mediterranean Sea against Pollution, the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft and the Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency, and should continue the negotiations on the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, leading to its final adoption and early signature, ratification and implementation.
48. The pilot phase of the various activities undertaken as part of the assessment of the sources, amounts, pathways, levels and effects of pollutants should be continued until the end of 1978. Using the experience and results obtained during the pilot phase, as well as the established network of collaborating national institutions, a

long-term monitoring programme should be prepared, adopted and implemented. By analysing the trends in levels and effects of pollutants in the Mediterranean region, this programme should serve as the basis on which to take environmentally-sound management decisions essential for the future socio-economic development of the region and as the most objective indicator of the effectiveness of the measures taken by the Governments in response to their obligations formulated in the Convention and Protocols.

49. Recognizing the importance of environmental management for sustained socio-economic development, the Governments of the Mediterranean Region should, through their national institutions, play an active role in all the activities relevant to the integrated planning and management of natural resources. In particular, they should give firm, substantive and financial support to and participate in the implementation of the Blue Plan and the Priority Actions Programme as developed in the framework of the Mediterranean Action Plan.
50. Institutions having a regional role should be strengthened and used more efficiently for the benefit of the Mediterranean States. In particular, Governments are invited to provide full support to the Regional Oil Combating Centre in Malta and to develop, in co-operation with the Centre, contingency plans and strengthen their national capabilities for responding to pollution emergencies. The feasibility of establishing subregional oil combating centres may be reviewed at a later stage after more experience has been gained through the operation of the Malta Centre.
51. As in the past, the activities agreed upon as part of the Action Plan should be executed by national institutions of the Governments which have been involved in formulating the Action Plan. UNEP, in close collaboration with the relevant parts of the United Nations system and under the guidance of Governments, has acted as the over-all co-ordinator of these activities and is prepared to continue this role, in particular as the Secretariat of the Convention which is an integral part of the Action Plan. However, in view of the various offers made by several Governments, an early decision should be taken on the future structure and location of UNEP's unit responsible for co-ordinating the further development of the Action Plan.
52. The Mediterranean Action Plan should be a self-supporting regional programme with major financial responsibility vested in the Governments of the region. Therefore, a specific trust fund should be established to ensure the harmonious development of jointly agreed activities and their effective co-ordination.

PROGRESS REPORT AND RECOMMENDATIONS CONCERNING THE
ENVIRONMENTAL ASSESSMENT COMPONENT OF THE ACTION PLAN

I INTRODUCTION

1. The Mediterranean is a remnant of a vast waterway, at least half a billion years old, that formerly extended from what is now Portugal, the Alps, south-east Europe, Anatolia, Iran, the Himalayas to south-east Asia and the Pacific. This ancient sea, called Tethys, separated the northern continents of Eurasia from the southern Gondwanaland. As a result of constant interactions between these two great continents, and in particular of the Alpine orogenic evolution which began in late Cretaceous time the present shape of the Mediterranean Basin gradually evolved.
2. Due to its complex and interrelated climatic, hydrological and hydrographical conditions evolved through the past millenia the Mediterranean Basin today represents a uniquely integrated ecoregion. Man started to change the ecology of the region as soon as he appeared on the shores of the Mediterranean. He certainly contributed to the destruction of the dense forests which once covered parts of the coastline, to the erosion of the fertile topsoil, to the disappearance of many of the indigenous Mediterranean animal and plant species and to the gradual but steady changes in the quality of the Mediterranean's waters itself.
3. There is no doubt about it: the Mediterranean is far from its pristine condition. But one must admit that pollution did exist on its shores long ago in historic times. The canals of Venice, the coastal waters off Alexandria, the Golden Horn of Istanbul and many other places must have been public health hazards hundreds of years ago as they are today. Yet it seems that the gradual changes are taking a qualitatively new and ugly turn and that the vast but limited waste-receiving capacity of the Mediterranean is being surpassed in ever increasing areas close to shore. To the man using these coastal waters for recreation, fishing and other activities it should be a slight consolation for him to know that the Mediterranean as a whole can still be considered as a healthy ecosystem which is not doomed to die in the next few decades.

4. Scientists studying the gradual ecological changes provoked by man's thoughtless, and frequently reckless, use of his environment have long warned their colleagues, the general public and the responsible authorities that one day we will have to pay dearly for whatever is done in the name of "progress". Today everybody seems to agree that something ought to be done to stop and, if possible, reverse the deterioration of the Mediterranean, although it would be difficult to formulate the substance of this agreement. But good intentions are not enough when insight into the true nature and extent of the problems involved is lacking. Therefore, neither over-optimistic enthusiasm nor doomsday pessimism about the future of the Mediterranean will help anybody in programming an effective control of pollution, if it is based on "feelings" rather than on hard scientific facts. To get these facts, in a form which would allow determination of the present state of the Mediterranean's pollution, assessment of its causes and the prediction of its long-term consequences is an extremely complicated and difficult task requiring a well-co-ordinated scientific effort.
5. As early as 1969 the GFCM of FAO formed a Working Party on Marine Pollution in the Mediterranean which, in 1972, produced the first comprehensive review on the state of marine pollution in the Mediterranean ¹⁵.
6. The next important step towards action was the UNEP sponsored International Workshop on Marine Pollution in the Mediterranean which was convened in Monaco (9 - 14 September 1974) by IOC, GFCM and ICSEM. This meeting, attended by 40 scientists from Mediterranean research centres, defined pollution of coastal waters as the main environmental problem in the Mediterranean Sea and attributed it to the general lack of adequate systems for the treatment and disposal of domestic and industrial waste, to the input of pesticides and petroleum hydrocarbons, and to the presence of pathogenic microorganisms ¹⁶.

II CO-ORDINATED MEDITERRANEAN POLLUTION MONITORING AND RESEARCH PROGRAMME (MED POL)

7. Based on the recommendation of the Monaco Workshop, the 1975 Intergovernmental Meeting in Barcelona approved a Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) in the framework of a wider Mediterranean Action Plan ² adopted at this Meeting.
8. Seven pilot projects were originally approved at the 1975 Barcelona Meeting as part of MED POL:

MED I : Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters (IOC/WMO/UNEP);

- MED II : Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms (FAO(GFCM)/UNEP);
- MED III : Baseline Studies and Monitoring of DDT, PCBs and Other Chlorinated Hydrocarbons in Marine Organisms (FAO(GFCM)/UNEP);
- MED IV : Research on the Effects of Pollutants on Marine Organisms and their Populations (FAO(GFCM)/UNEP);
- MED V : Research on the Effects of Pollutants on Marine Communities and Ecosystems (FAO(GFCM)/UNEP);
- MED VI : Problems of Coastal Transport of Pollutants (IOC/UNEP);
- MED VII : Coastal Water Quality Control (WHO/UNEP).
9. Three expert group meetings, organized by GFCM of FAO, IOC of UNESCO, WMO, WHO, in co-operation with UNEP, were held during 1975 in Rome 17), Malta 18) and Geneva 19). These meetings, attended by 122 marine scientists from 16 Mediterranean countries, formulated the details of work-plan and time-table for each of these pilot projects as the "operational documents" of the pilot projects.
10. Each of the operational documents contains a minimal work programme, mandatory for all participants, and an extended programme recommended as desirable for the more advanced research centres. Furthermore, the documents specify the matrix and the pollutants to be monitored, the sampling and analytical methodology to be followed, the procedures of the intercalibration of the analytical techniques, the type of field observations and laboratory experiments, the format and frequency of data reporting, the needs for training and additional equipment and any other question relevant to the execution of the pilot projects.
11. Four of the original MED POL pilot projects are basically monitoring activities although all of them have a strong research component. The monitoring is based on very precise sampling and analytical procedures as well as on permanent intercalibration techniques. All this leads to comparable data from the whole Mediterranean. The monitoring covers:
- visual observation of oil slicks and other floating pollutants, tar ball sampling, survey of tar on beaches and sea-water sampling to analyse the amount and composition of the dissolved petroleum hydrocarbons (MED I);

- the concentration of selected metals, particularly mercury and cadmium in marine organisms (MED II). In addition to these elements the measurement of the levels of copper, lead, manganese, selenium and zinc is recommended, particularly when detection methods providing for multi-elemental analysis are used. The striped mullet, the Mediterranean mussel and the bluefin tuna have been selected for the monitoring programme so that representative ecotypes are included. The sampling frequency is seasonal;
 - the levels of selected organochlorine compounds which are considered as specially relevant to representative elements of the Mediterranean ecosystems (MED III); DDT, PCBs, dieldrin and their metabolites were singled out as falling into this category. Whenever possible, other persistent organic compounds are also identified in analysed samples. The organisms selected as monitoring targets (striped mullet, Mediterranean mussel, pink shrimp) are representative of the different Mediterranean ecotypes, of great economic importance and almost ubiquitous in the whole Mediterranean. The sampling frequency is seasonal;
 - sanitary and health surveillance of coastal recreational waters and of shellfish-growing waters in selected coastal areas (MED VII). Microbiological indicators are used as the most significant indicators of the quality of seafood and coastal waters.
12. The three MED POI research pilot projects deal with:
- effects of pollutants on marine organisms and their populations (MED IV). Acute toxicity experiments are used only when the organisms cannot be kept long enough under culture conditions to allow long-term toxicity tests. Instead, long-term experiments are envisaged with the aim of investigating the sub-lethal effects of potential pollutants, and functional as well as morphological changes;
 - effects of pollutants on marine communities and ecosystems (MED V). Ecosystems are particularly investigated in areas which have been repeatedly studied in the past in order to detect long-term changes. The studied parameters and effects vary, depending on the community and ecosystem. The most common ones are: community structure, functional indices and body burden of pollutants;
 - problems of coastal transport of pollutants (MED VI). The water circulation in coastal areas and the exchange of water between the coastal and off-shore regions is investigated. Special attention is paid to the movement of the surface layer as this contributes considerably to the rapid spread of certain pollutants (e.g. petroleum hydrocarbons, floating litter, etc).

13. Once the operational documents were prepared the Executive Director of UNEP invited the Governments of the Mediterranean States to nominate their national institutions to participate in the pilot projects. Participation in the projects is open to all institutions in the region, subject to nomination by their national authorities. At present 76 research centres from 15 Mediterranean countries actively participate in one or more of the pilot projects (see Table 1), and additional nominations are still being received. Participation in the pilot projects is not limited to well developed research centres able to deal with the task in a complex way but is open to all institutions capable of a limited contribution, in order to further their own development.
14. The monitoring and research activities to be undertaken by the research centres nominated are specified in a signed agreement between them and the relevant specialized United Nations organization co-operating with UNEP on the implementation of the programme (see paragraph 8). As of end October 1977, 107 individual research agreements had been signed, an additional 20 cleared and prepared for signature, while 78 new agreements were still being negotiated. UNEP is acting as over-all co-ordinator for the work carried out on the basis of these agreements by the individual research centres to ensure the most effective and harmonious development of the whole research and monitoring programme, while the relevant specialized organizations are maintaining daily operational contacts with the co-operating institutions.
15. Substantive support has already been provided by UNEP, through the co-operating specialized United Nations organizations, to the participants in the programme in order to facilitate or make possible their full participation in the pollution monitoring and research activities. This support includes a large training programme, furnishing of necessary equipment, organization of a permanent intercalibration of analytical techniques mandatory for all participants, and provision of common maintenance services for the more sophisticated instruments used in analytical work. By the end of October 1977, a total of 156 m/m of training and equipment worth more than US\$ 850.000 had been granted to the participants in the seven pilot projects. The cost of implementing the pilot phase of MED POL until the end of 1977 (not including the costs relevant to UNEP's co-ordinating activities) is estimated at US\$ 1.7 million to UNEP, US\$ 350 thousand (on services and staff time) to the specialized agencies. The accrued costs to the Mediterranean Governments, through the involvement of their national institutions is conservatively estimated at US\$ 5 million.
16. In addition to the direct financial support, through the IAEA International Laboratory of Marine Radioactivity, UNEP has secured a common maintenance service for analytical instruments used by national institutions participating in MED POL and has organized a permanent intercalibration of analytical techniques, mandatory for all participants, in order to ensure the comparability of the results obtained. The costs of these activities is US\$ 130 thousand to UNEP and US\$ 25 thousand (in services and staff time) to IAEA.

Table 1: National research centres participating in the MED POL pilot projects (for further details see UNEP/IG.11/INF.3/ANNEX II)

COUNTRY	MED I	MED II	MED III	MED IV	MED V	MED VI	MED VII	Number of participating centres per country*
ALBANIA	-	-	-	-	-	-	-	-
ALGERIA	-	1	-	-	1	-	-	1
CYPRUS	1	1	1	1	1	1	-	1
EGYPT	1	1	1	1	1	1	-	1
FRANCE	9	8	6	4	3	5	-	16
GREECE	3	5	5	4	3	2	3	12
ISRAEL	1	1	2	1	1	1	4	5
ITALY	-	5	1	2	2	3	8	15
LEBANON	1	1	1	1	1	1	1	1
LIBYA	-	-	-	-	-	-	-	-
MALTA	1	1	1	1	-	1	3	3
MONACO	-	-	-	-	-	1	1	1
MOROCCO	-	2	2	2	1	-	1	2
SPAIN	3	2	2	2	2	3	4	6
SYRIA	-	-	-	-	-	-	-	-
TUNISA	1	1	1	1	1	1	-	2
TURKEY	1	4	3	3	2	1	1	5
YUGOSLAVIA	3	4	4	3	4	2	3	5
TOTAL	25	37	30	26	23	23	29	76*

* Centres participating in more than one pilot project are counted only once.

17. As an aid to participants in the programme a large number of technical documents, such as bibliographies, manuals and guidelines, have been prepared ²⁰⁾-³⁴⁾ or are under preparation.
18. A Directory of Mediterranean Marine Research Centres describing more than 100 institutions was prepared and issued ³⁵⁾ by UNEP in 1976. A second, up-dated version of this Directory providing detailed information on more than 140 institutions, (programmes, staff, publications, facilities, etc.) was issued in November 1977.
19. In consultation with the Mediterranean Governments and the specialized United Nations bodies concerned, in August 1976, one research centre in each of the seven networks of co-operating institutions was nominated by UNEP as a Regional Activity Centre (RAC). The role of the RACs is to assist UNEP and the relevant specialized United Nations organizations in the organization and execution of the pilot projects. Based on consideration of their technical competence and with due regard to their appropriate geographical distribution as Regional Activity Centres, national institutions in the following countries have been selected: Algeria, Egypt, France, Italy, Malta, Turkey and Yugoslavia.

III OTHER MED POL RELATED PROJECTS

20. The original seven pilot projects of the MED POL deal mainly with the coastal waters of the Mediterranean, and therefore an additional pilot project (MED VIII) dealing with pollution levels of the open waters and the biogeocycle of the most important pollutants was later initiated in co-operation with IAEA and IOC.
21. Since 1975 UNESCO and UNEP have been undertaking a project (MED IX) on the role of sedimentation in the pollution of the Mediterranean Sea with special emphasis on the assessment of current knowledge in this field and on the development of guidelines for environmental impact assessment.
22. In close co-operation with the Governments of the region and a number of specialized United Nations bodies, including ECE, UNIDO, FAO, UNESCO, WHO and IAEA, a project was initiated by UNEP on pollutants from land-based sources (MED X). The objective of the project, carried out under the operative co-ordination of WHO, is to provide information on the type and quantity of pollution reaching the Mediterranean Sea from major land-based sources and through rivers, and on the present status of waste discharge and waste management practices. The project also provides for the preparation of an inventory of land-based sources of pollutants being discharged into the Mediterranean ³⁶⁾. It is a concrete example of the linkage between environmental assessment and management in that it is intended to produce data which will assist Governments in the negotiation of the regional protocol on pollution from land-based sources (see UNEP/IG.11/3/Annex II).

23. Recently, in co-operation with UNESCO, plans have been developed to formulate conceptual models for the biogeocycle of selected Mediterranean pollutants, including models for their impact on marine ecosystems. Using data collected through the various pollution monitoring and research activities, these conceptual models should lead to the formulation of predictive models which might be useful tools for making appropriate management decisions.
24. Through the co-operation of IUCN, a preliminary survey was prepared on existing and potential marine parks and reserves in the Mediterranean region. The Expert Consultation on Mediterranean Marine Parks and Wetlands (Tunis, 12 - 14 January 1977)³⁷⁾ reviewed this survey, formulated the draft principles and guidelines for selection, establishment and management of areas requiring special protection and made specific recommendations reflected in UNEP/IG.11/3/Annex II and UNEP/IG.11/3/Annex III.

IV RESULTS

25. Since 1975 when the environmental assessment component of the Mediterranean Action Plan was launched:
 - agreement was reached on the pollutants to be monitored, the sampling and analytical methodology to be followed, the procedures of the intercalibration of analytical techniques, the type of field observations and laboratory experiments, the format and frequency of data reporting, and other questions relevant to the execution of the individual pilot projects;
 - 15 Governments have agreed to co-operate in the joint programme which involves 76 of their national marine research centres;
 - under the over-all co-ordination of UNEP, eight specialized United Nations organizations, which are responsible for the technical operation of the individual projects, maintain day-to-day direct contacts with the national centres participating in the work;
 - the actual work in the collaborating national centres started during 1976, in many cases with substantial assistance from UNEP in training and equipment.
26. The first reports, received from the national research centres co-operating in MED POL and from other sources identified by the Mediterranean Governments, were reviewed in mid-1977 at expert consultations in Dubrovnik (2 - 13 May 1977)³⁸⁾, Barcelona (23 - 27 May 1977)³⁹⁾ and Rome (30 May - 1 June 1977)⁴⁰⁾, at the Mid-Term Review Meeting on MED POL (Monaco, 18 - 22 July 1977)⁴¹⁾ and at the recent Meeting of Experts on Pollutants from Land-Based Sources (Geneva, 19 - 24 September 1977)⁴²⁾. Judging from the

results of these meetings, attended by 176 government-designated experts, principal investigators of MED POL pilot projects and additional eminent scientists and experts from 16 Mediterranean countries, the programme has gained firm ground and provides the basis for systematic national marine pollution monitoring and research activities in many Mediterranean countries. UNEP's immediate role is now to exploit the momentum of this vigorous regional programme and transform it, with the backing of the relevant parts of the United Nations system, into a permanent activity as envisaged by the Barcelona Convention.

27. Additional information on, and preliminary results obtained by each of the projects presented above are shown in the appendix to this annex, in UNEP/IG.11/INF.3, in UNEP/IG.11/INF.4 and in UNEP/IG.11/INF.5.

V RECOMMENDATIONS

28. On the basis of advice received from the expert consultations held during 1977 (see paragraph 26) the Executive Director of UNEP is presenting the following specific recommendations for the development of the environmental assessment component of the Mediterranean Action Plan during 1978:

- (i) The pilot project phase of the environmental assessment component of the Mediterranean Action Plan should be extended until the end of 1978;
- (ii) A stronger integration of the various projects of the environment assessment component of the Mediterranean Action Plan should be achieved to make possible a comprehensive contribution to the other components of the Mediterranean Action Plan (see paragraph 1 of UNEP/IG.11/3) and thus provide the indispensable scientific basis for management activities and for the legal initiatives the Contracting Parties to the Barcelona Convention may wish to take;
- (iii) Hazard profiles should be prepared for substances identified by the Convention and in particular by annexes to the protocols on dumping and on land-based sources of pollution;
- (iv) Based on national research centres participating in various pilot projects, the institutional network needed for systematic and reliable Mediterranean-wide data-reporting on the levels and effects of pollutants should be completed;

- (v) Using the experience and results obtained during the pilot phase of the continuing monitoring and research activities, in collaboration with the relevant organizations of the United Nations system, a pollution monitoring programme should be prepared by UNEP as the Secretariat of the Barcelona Convention and elaborated in detail for an initial period of 3-5 years for adoption by the first meeting of the Contracting Parties, hopefully in 1979. The proposed programme would be based on the established network of collaborating national institutions. It should include monitoring of the levels and effects of the most important pollutants in selected locations and components of the Mediterranean environment as well as research directly supporting the monitoring programme. The design of the programme should make possible analyses of the trends in levels and effects of pollutants in the Mediterranean, as well as the formulation of models on their biogeocycle cycles and on their expected environmental (and socio-economic) impact on the Mediterranean ecoregion;
- (vi) Taking into account existing international arrangements and agreements, proposals should be developed for criteria applicable to the quality of recreational waters and seafood;
- (vii) Principles and guidelines should be prepared for the assessment of the Mediterranean's waste-receiving capacity, for the assessment of the quality of recreational beaches, and for the selection, establishment and management of specially protected Mediterranean areas;
- (viii) A model code of practice for the disposal of liquid wastes into the Mediterranean should be initiated, covering initially criteria and guidelines essential for the implementation of the protocol on pollutants from land-based sources;
- (ix) A report on the state of pollution of the Mediterranean Sea should be prepared using primarily the results obtained through the pilot phase of the various projects launched as part of the environment assessment component of the Mediterranean Action Plan, although data available from other sources should also be used.

29. To achieve these aims:

- (i) additional Mediterranean research centres should be designated by Governments to participate in the pollution monitoring and research projects in geographic zones at present inadequately covered;
- (ii) the research centres which at present do not have either sufficiently trained personnel or the equipment for their full participation in the programme should be further strengthened by their Governments;
- (iii) Under UNEP's overall co-ordination, and with the assistance of the relevant organizations of the United Nations system, the collaboration between research centres should be reinforced and, in view of the complementary nature of the data generated through various pilot projects, further efforts should be made to achieve a cross-sectoral approach to the assessment of the origin, amounts, levels, pathways and effects of Mediterranean pollutants;
- (iv) the methodology used by participants in the various pilot projects assessing the levels and effects of pollutants is already well harmonized and, whenever necessary, unified. Nevertheless, as the results of the monitoring and research activities may have legal implications for the Contracting Parties of the Barcelona Convention, preparation of reference methods for Mediterranean marine pollution studies should be undertaken by UNEP as the Secretariat of the Convention;
- (v) a joint oceanographic cruise (MED CRUISE, see UNEP/IG.11/INF.3/Annex VI) should be organized by UNEP, in collaboration with the relevant organizations of the United Nations system and the national institutions of the region, in order to increase the number and quality of data on the open waters of the Mediterranean and, on request by the relevant national authorities, to provide additional data for certain coastal waters;
- (vi) the assessment of input of riverborne and airborne pollutants into the Mediterranean should be organized by UNEP because these may turn out to belong to the major groups of unknown parameters needed to assess the state of pollution in the Mediterranean Basin;

- (vii) a central data repository and processing facility, such as the Geneva based United Nations International Computing Centre (ICC), satisfying the requirements of the whole Mediterranean Action Plan, should be selected by UNEP as the Secretariat of the Barcelona Convention and operated on a trial basis. Data reported to this facility, directly or through the organizations co-ordinating the implementation of the various activities, should be considered as unclassified, unless stated otherwise;
- (viii) the build-up of modelling capabilities of the Mediterranean scientists should be promoted by UNEP. Initial targets for modelling may include biogeochemical cycles of heavy metals, oil, chlorinated hydrocarbons and ecosystems and they should be integrated with hydrodynamic models, because they constitute the common basis for such models;
- (ix) activities related to the development of methods for the assessment and principles for the control of coastal water pollution should be intensified;
- (x) continuing activities aimed at the development of a technical guideline in the form of a model code of practice for the disposal of liquid wastes into the Mediterranean should be carried out.

PRELIMINARY RESULTS
OBTAINED THROUGH PROJECTS RELATING TO ENVIRONMENTAL ASSESSMENT

(for more detailed information, see UNEP/IG.11/Inf.3/Annex IV and
UNEP/IG.11/Inf.5)

MED I : Baseline Studies and Monitoring of Oil and
Petroleum Hydrocarbons in Marine Waters
(IOC/WMO/UNEP)

1. Concentrations of dissolved/dispersed hydrocarbons have been monitored in the regions of Banyuls-sur-Mer, France; Patraikos and Messiniakos Gulfs, the islands of Crete, Rhodes and Lesbos, Greece; Thessaloniki and Kavalla harbours and Strymonikos Bay, Greece; Cadiz Bay and Cadiz Port, Spain; Rijeka Bay, Yugoslavia. Investigations were carried out in three different Mediterranean areas; in total 108 samples were taken, of which 40 were from the surface, 32 at 10 m depth, and 36 at 50 m depth. No significant variation was found with depth and results ranged from 100 to 3,500 ppb, with an average of 2,000. The relatively low number of analysed samples does not allow for a comparison of the three areas studied.
2. Tar has been monitored on beaches of Limassol Bay, Larnaca Bay and north of Paphos, Cyprus; Alexandria, Egypt; along the coast of Israel; Anchor Bay, Quawra and Marsaxlokk Bay, Malta. On beaches in the Central Area tar varied from 0 - 800 g/m in 18 samples, with an average of 118 g/m. In one location of the South Levantine Area results from 260 samples varied from 30 to 14,759 g/m, with an average of 3,625, while in another location in the same Area 18 samples gave results varying from 1 - 5.6 g/m.
3. A survey made to determine the sources of tar balls on the Mediterranean coast of Israel showed that 76% of the tar balls were formed from weathered crude oil (GC-1) and crude oil sludge (GC-2) from Middle-Eastern sources and 18% from weathered fuel oil (GC-3). The degree of weathering indicated that 46% of the crude oil tar balls were exposed at sea for about a fortnight, 41% for more than 2 months and 13% for 1 - 2 years.

4. Data of the kind referred to above, particularly those on beach tar and dissolved hydrocarbons, did not exist or not in significant quantities, in the Mediterranean prior to MED POL. The continuation of this monitoring, together with appropriate and constant evaluation of data and the system providing them, is the important scientific achievement of the MED -I Pilot Project.

MED II : Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms (FAO(GFCM)/UNEP)

5. Mercury and cadmium concentrations in Mediterranean marine organisms appear to vary with species, habitat, trophic level and growth phase. Direct relationship between size and mercury and/or cadmium concentration has been found in Engraulis and tuna. This was not detected in Mytilus and is also not valid for most of the other metals studied. In one area of the north-west Basin during the January-June 1976 sampling period the highest levels were found in Mytilus in February and March, but no apparent relationship between water and tissue concentration was established.
6. Mercury concentrations were determined in molluscs (principally in Mytilus galloprovincialis, range <5-8310 ug/kg wet weight), crustaceans (Aristeus antennatus, 140-1960 ug/kg w.w.; Nephrops norvegicus, 140-2376 ug/kg w.w. and Penaeus sp., 21-184 ug/kg w.w.) and fishes (Mullus barbatus, 10-3450 ug/kg w.w., Merluccius merluccius, 60-870 ug/kg w.w., Engraulis encrasicolus, 4-424 ug/kg w.w., Sardina pilchardus, 40-760 ug/kg w.w. and Thunnus thynnus, <10-4100 ug/kg w.w.). Mercury, determined in more than 700 Mediterranean specimens of Thunnus thynnus and Thunnus alalunga shows on average 3-4 times higher concentration than in oceanic specimens.
7. Information on cadmium levels is limited; however, some were obtained for molluscs (Mytilus galloprovincialis <10-5900 ug/kg w.w.), crustaceans (Nephrops norvegicus, <5-4.7 ug/kg w.w.) and fishes (Engraulis encrasicolus, 5-100 ug/kg w.w. and Mullus barbatus, <5-15 ug/kg w.w.
8. These preliminary data are insufficient to permit firm conclusions, particularly since some critical areas have not as yet been monitored, notably the Tyrrhenian coast of Italy and the Adriatic/Ionian coasts of Greece. Nevertheless, the data obtained indicate that most probably due to natural conditions prevailing in the Mediterranean the levels of some metals in selected edible organisms, mercury in particular, are at or above the levels considered as permissible by most national legislations.

MED III : Baseline Studies and Monitoring of DDT, PCBs
and Other Chlorinated Hydrocarbons in Marine
Organisms (FAO(GFCM)/UNEP)

9. The determinations of chlorinated hydrocarbons in Mediterranean marine organisms are, with few exceptions, limited to the North-West Basin and the Adriatic. The following values and ranges, in ug/kg of wet weight, were found in selected organisms:

Area and Organism	DDT	PCBs
North Adriatic		
<u>Mytilus galloprovincialis</u>	32.4-107.0	216-450
<u>Carcinus maenas</u>	16.6-44.0	245-348 (PCB 1254)
<u>Mullus barbatus</u>	82.0-93.0	81-228 (PCB 1254)
South Adriatic		
<u>Mytilus galloprovincialis</u>	6	<10-30
<u>Pachygrapsus marmoratus</u>	18	60
<u>Mullus surmuletus</u>	50	240
North-West Basin		
<u>Mytilus edulis</u>	2.2-177.0	68-670
<u>Carcinus mediterraneus</u>	40.4-137.5	960-1513
<u>Mullus barbatus</u>	56.0-690.0	170-2250
<u>Sardina pilchardus</u>	164.1-880.0	519-1600

10. Seasonal variations of residue levels were observed at different sites. In mussels of the North-West Basin the DDT decreased to the lowest values in June while the PCB values increased over this period in some sites. In the North Adriatic DDT was the most abundant residue in mussels but PCBs (Arochlor 1260) have not been reported, although present in other organisms. In Carcinus of the North-West Basin the DDT levels were relatively lower and the PCB levels were uniformly high. In the North Adriatic DDT was more abundant, but Arochlor 1260 and 1254 were present at the ratio 1:3. In Mullus of the North-West Basin all chlorinated hydrocarbons reached an annual peak in December/January which decreased to the lowest level in

September. In the North Adriatic DDT was the most important residue and Arochlor 1260 and 1254 were present in approximately equal amounts. In Sardina the same seasonal patterns were found as in Mullus. In zooplankton of the South Adriatic the PCB levels are notable, but that of other chlorinated hydrocarbons relatively low. In the North Adriatic analysis for DDT in sediments has also been carried out.

11. The geographic distribution of participating laboratories in this project is not entirely satisfactory as monitoring does not cover the Tyrrhenian Sea, Ionian Sea (except Malta), South Adriatic (except Dubrovnik), Cyprus, as well as the greater part of the eastern and southern coastline of the Mediterranean. Accordingly, only few data are available on the concentration of chlorinated hydrocarbons in marine organisms.

MED IV : Research on the Effects of Pollutants on
Marine Organisms and their Populations
(FAO(GFCM)/UNEP)

12. The participating research centres have selected twenty species of which only seven are relevant to the MED II and MED III monitoring programmes. Experiments were initiated in the following fields: toxicity; pollutant dynamics; morphology and histopathology; development, reproduction and population genetics and physiological and behavioural effects.
13. Toxicity studies were made on sea-urchins (Arbacia lixula and Paracentrotus lividus), copepods (Acartia clausi and Oncea mediterranea), polychaetes (Scoleopsis fuliginosa and Capitella capitata), algae (Phaedactylon tricornutum), crustaceans (Palaemon elegans), Palaemonetes varians, Penaeus kerathurus and Artemia salina), fishes (Mugil cephalus and Sparus aurata), and molluscs (Murex brandaris). These studies have been performed to determine toxicity of different pollutants (mainly heavy metals and chlorinated hydrocarbons). The investigators have often chosen sensitive organisms and early responses as criteria in static bioassays (LC_{50} , 24-72 h). There is a tendency to improve these experiments with a flow-through system.
14. Experiments on accumulation and distribution of pollutants (heavy metals and chlorinated hydrocarbons) were made with decapods (Pagurus sp.) and fishes (Sparus aurata, Mugil spp. and Halobatrachus didactylus). For example, the mercury values reached in Halobatrachus (N=6) after 49 days of exposure to concentration of 0.1 mg/l were 50.3 ug/kg in liver and 9.6 in muscle.

15. Morphological and histopathological changes were observed on different tissues of fishes (Mugil auratus, Sparus aurata and Halobatrachus didactylus) exposed to heavy metals. Some of these effects were characterized by hyperchromatism of the intestine villi, increased epithelium thickness, vacualization in liver, kidney tubules with nuclear disorientation, etc.
 16. Effects of pollutants on development, reproduction and population genetics were studied in sea-urchins (Paracentrotus lividus), algae (Phaeodactylon tricorutum), crustaceans (Balanus amphitrite) and fish (Mugil cephalus). Physiological and behavioural effects of pollutants were studied in sea-urchins (Arbacia lixula), molluscs (Monodonta articulata) and also some biochemical changes in fishes (Blennius pavo and Sardina pilchardus) and Coelenterata (Microcosmos sulcatus). During the experiments a reduced oxygen consumption was found in Monodonta; while an "adhesion distress syndrome", cytolysis and release of pigment was observed in Arbacia.
 17. Basic research has also been stimulated. Thus, programmed biosynthesis studies in Coelenterata proved to be an extremely sensitive instrument for the assessment of the effect of pollutants. Research on the effects of thermal pollution showed that this environmental stress may lead to reduction of heterozygosity.
- MED V : Research on the Effects of Pollutants
on Marine Communities and Ecosystems
(FAO(GFCM)/UNEP)
18. Attempts were made to study effects of untreated effluents (domestic and industrial) on the structure and dynamics of plankton and benthos communities. However, the research was limited to the North-West Basin, South-West Basin, Adriatic, Aegean and North Levantine Seas and the results reported at this stage are confined mainly to effects at the level of population dynamics and productivity. Benthos surveys were made on various hard substrates (North-West Basin, Aegean and North Adriatic), semi-hard substrates such as Posidonia and Cymodocea communities and coastal terrigenous ooze (North-West Basin, South-West Basin, North Levantine and North Adriatic) and soft substrates (North-West Basin, South-West Basin and North Adriatic). In the neritic zone bacterial counts were made, structure of plankton communities registered and phytoplankton photosynthetic activity measured.
 19. Through cartography of communities, rather difficult and time-consuming, the following studies have been started in three different areas (North-West Basin, South-West Basin and North Adriatic): species composition, diversity, density, biomass, production potential and dynamics of populations and communities, etc. Some environmental parameters were also surveyed such as temperature,

salinity and dissolved oxygen, sediment granulometry, organic content of sediments, etc. Species distribution seems to be correlated with the degree of pollution, i.e. a marked decrease in the number of species with the progression from unpolluted to polluted waters. As an example, from the North-West Basin where the crustaceans are most numerous in unpolluted areas (up to 71%) they are the first species to decrease with pollution, while molluscs become more common in moderately polluted areas (37%-54%) and, as pollution increases, molluscs also decrease and polychaetes become most numerous (85%). The diversity indices demonstrate an inverse relationship between species diversity and pollution.

20. Efforts have been made to determine indicator species that may help in identifying the changes within an ecosystem, thus permitting a relatively simple analysis of the status of a community. It is known from the North-West Basin that for example Cystoseira (algae) is dominant in relatively pure water, Mytilus (mollusc) and Corallina (algae) are common in moderately polluted waters and Ulva (algae) in heavily polluted waters. An experiment with "biofouling" panels, for controlled study of colonization, growth and community structure, has started in the Aegean. Experimental lagoons, polluted and unpolluted by sewage, were studied and have shown a number of important modifications of the ecosystems within the polluted lagoons. Some of the effects which have been recorded are: accelerated eutrophication and, near the bottom, increased CO₂, decreased dissolved oxygen, negative presence of H₂S, and increased turbidity.
21. Efforts have been made to select so-called reference zones for control of pollution in the North-West Basin, South-West Basin, Adriatic, Aegean and North Levantine Seas.
22. Marine communities and ecosystems are characterized by response and recovery times of long duration. These facts make long-term studies on pollution effects essential and results of these or similar studies performed in the past could be most valuable. Prolonged observations are, however, inadequate for an exercise that requires immediate information and solution of a problem, but, as shown earlier, these observations could well be replaced by short-term (two or three years), experimental approaches (biofouling panels, experimental lagoons) and laboratory experiments.

MED VI : Problems of Coastal Transport of
Pollutants (IOC/UNEP)

23. Mechanisms and processes contributing to the physical transport of pollutants in the Mediterranean Sea have been studied by direct current measurements, drift cards and indirect methods.

24. In the Barcelona area, time-series data on temperature and salinity, as well as vertical sections, have been taken and used to calculate currents. No direct current measurements have yet been taken. The predominant current direction is from north-east to south-west, along the Barcelona coast, although there are various local circulation patterns.
25. A large number of parameters have been measured in the northern Adriatic Sea, including direct sub-surface current measurements and drift card experiments. Velocity of about one knot was measured, although locally values of up to 5 knots have been observed. Generally, the flow is northwards on the eastern side and southwards on the western side (cyclonic), in June and August and generally anti-cyclonic in September and December. In the central Adriatic Sea, in the vicinity of Split, the surface currents flow predominantly north-westwards. This direction predominates throughout the year. At depth there is a coastal current. Variations in the currents appear to have a period of several days. Tidal currents are weak and usually describable by elliptic vectors.
26. In the eastern Mediterranean work has so far been limited to standard hydrographic observations and one drift-card experiment for which projectory plots are awaited.
27. In the Aegean Sea (Gulf of Saronikos) currents tend to flow cyclonically. The surface and bottom currents have similar patterns not closely correlated to wind patterns. Bottom currents show strong models at 70° and 280°.
28. A few observations have been taken in the vicinity of Malta which indicate that the main feature of the circulation is the flow of surface water from the western basin to the eastern basin, with some eddy formation to the east of Malta.
29. In the DRIFTEX programme, 4978 drift cards were released in the Ligurian Sea. After 6 months, 472 were returned, about half of these in the first month. The recovered cards indicated that the main flow was westwards. Recoveries in the next 5 months were, in the absence of precise knowledge of the tracks of drift cards, and the large distances covered by some of them, less useful in determining local current patterns.

MED VII : Coastal Water Quality Control
(WHO/UNEP)

30. The monitoring of the sanitary quality of beaches and recreational coastal waters as well as shellfish and shellfish-growing waters has covered the following areas: Thessaloniki, around the Attica Peninsula (area of Greater Athens), Saronikos Islands, Greece; Tel Aviv area, Kishon river area, Tirat Hacarmel area, Israel; estuarine zone of river Tiber, Castel Porziano on the Tyrrhenian Sea, the waters

off Leghorn, Tuscany and the island of Elba in the Ligurian Sea, Stretto, Milazzo, Patti, Vibo Valentia and Augusta coastal zones, Bay of Naples, Trieste to Ravenna zone including the Murano Lagoon, Italy; coast of Lebanon; Mellena Bay, San Luciano and Renella, Malta; coast of Monaco; Antalya, Konya Alti beach area, Turkey; the west-Istrian coast of the Gulf of Trieste, Bay of Rijeka, Zadar, Split, Ston and Dubrovnik along the Adriatic coast of Yugoslavia. The three standard bacterial tests, namely, coliforms, faecal coliforms and faecal streptococci constitute the basic parameters for monitoring the above-mentioned areas.

31. Studies with the purpose of identifying better indicators or of monitoring the pathogenic organisms themselves as well as determining the correlation between them are continuing. Other biological indicators and pathogenic bacteria including bacteriophages, salmonella, shigella, vibrio cholerae, etc. are being investigated. Their presence, activity and survival in sewerage outfalls and the marine environment are studied and compared with each other and with the standard tests. These studies are complemented by data on the physical characteristics of the monitored coastal areas to ensure a better interpretation of the presence and concentration of the above parameters.
32. Studies on the correlation between total coliform and E. Coli indicated a correlation coefficient of 0.91. Total coliform counts are highest in winter. Similar studies are being carried out on enteric viruses. In this field, new studies are being planned, making use of more sensitive methods for detecting certain viruses in sea-water samples of 100-500 litres and also comparison of the three standard bacterial tests with enteric viruses concentration.
33. Based on the results of MED VII and other considerations as the interim standard for the quality of recreational waters it was recommended that "highly satisfactory bathing areas should show E. Coli counts of consistently less than 100 per 100 ml and, to be considered acceptable, bathing waters should not give counts consistently greater than 1000 E. coli per 100 ml", i.e. "no more than 10 per cent of at least ten samples collected during the bathing season should exceed 1000 E. coli per 100 ml" (see UNEP/IG.11/BD.8).
34. The first elements of a model code of practice (see UNEP/IG.11/BD.16) applicable in Mediterranean coastal water pollution control has been formulated and steps have been taken to develop the principles and guidelines for establishing criteria governing the issue of an authorization for the discharge of wastes containing substances from the "grey list" of the Protocol on pollutants from land-based sources (see UNEP/IG.11/BD.32).

MED VIII : Biogeochemical Studies of Selected Pollutants
in the Open Waters of the Mediterranean
(IAEA/IOC/UNEP)

35. PCBs measured in the non-coastal surface waters ranged from 0.02 ng - 2.5 ng/l with an average of 0.6 ng/l based on Arochlor DP-5. Concentrations tended to be higher in the western Mediterranean, and closer to shore. Higher levels were also observed near the Straits of Otranto than further south in the Ionian Sea. The lowest concentrations were in the Levantine Basin and in the central Western Mediterranean Basin. These correlate well with higher temperature surface water in the first case, and high winds in the latter, both leading to increased evaporation. Over-all, surface water values seem slightly lower on the average than the values measured in 1975.
36. Only four sediment samples from the Levantine Basin and Ionian Sea have been analysed to date and these indicate that in the top layer there are less PCBs in the Levantine Basin than in the Ionian Sea. This parallels the trend in the water layers above. However, laboratory studies showed that benthic worms readily absorb PCBs from sediments. This indicates that sedimentation does not necessarily remove PCBs from the marine ecosystem.
37. In approximately 80 sea-water samples from 0-3500 m depth from the eastern Mediterranean, Ionian and Tyrrhenian Seas the concentration of analysed metals ranged as follows: Cu, less than 40 ng/l; Zn, 0.5 - 2.5 ug/l; Cd, less than 20 ng/l; Hg, 10 - 30 ng/l. The general pattern of the data distribution indicated little evidence of coastal contamination being reflected in the open sea.
38. Some preliminary data on arsenic in an open ocean food chain indicate that certain crustacean predators have higher levels than the microplankton upon which they feed. On the other hand, fish which regularly eat these species of crustaceans have substantially less arsenic than their prey. In general, arsenic levels in the organisms which comprise this food chain are in the same range as those reported for similar species in other oceans.
39. Arsenic uptake by phytoplankton is very rapid and inorganic arsenate accumulated in the cells is metabolized almost completely into two forms: one associated with the lipid fraction (40%) and the second with the free amino acids (60%). Mussels take up arsenic roughly 10 times over the concentration in water and the uptake is dependent on temperature. Shrimp accumulate arsenic to a lesser degree than filter-feeding mussels. In both mussel and shrimp, the majority of the accumulated arsenic is associated with the internal tissues.

MED IX : Role of Sedimentation in the Pollution of
the Mediterranean Sea (UNESCO/UNEP)

40. Although it is generally well established that most metals and organic pollutants are enriched in the solid phase by two to three orders of magnitude over the concentrations found in the liquid phase of rivers, only a few direct measurements have been reported in the framework of MED IX. The only available information is related to the heavy metal composition of the bulk suspended sediment of the Adige, Po, Rhône, Aude, Ebro and Llobregat rivers. Elevated concentrations of some metals, such as cadmium and zinc, have been found but they are in a much lower range than those found for instance in the Rhine.

MED X : Pollutants from Land-Based Sources in the
Mediterranean (WHO/ECE/UNIDO/FAO/UNESCO/
IAEA/UNEP)

41. The results of the project are contained in a separate document submitted to this meeting (UNEP/IG.11/Inf.5).

PROGRESS REPORT AND RECOMMENDATIONS
CONCERNING THE INTEGRATED PLANNING
COMPONENT OF THE ACTION PLAN

I INTRODUCTION

1. The main objective of the integrated planning component of the Action Plan is to assist the Governments of Mediterranean countries to achieve, through practical co-operative activities, the most appropriate environmental management practices for their region. Environmental management is understood to mean management, through goal-setting, planning, legal means, etc., of human activities bearing on the environment so that sustained and environmentally rational decisions are made and implemented, thus enabling economic and social development to proceed for the benefit of present and future generations.
2. The underlying concept of the integrated planning of development and rational management of the natural resources component of the Mediterranean Action plan²⁾ is that there is a need for a more comprehensive approach to the planning and programming of socio-economic activities, an approach which takes account of the functioning of ecosystems and assures a proper balance between development and environment.
3. When they adopted this component of the Action Plan, Governments declared themselves ready to make a joint and thorough study of any proposal aimed at reconciling the demands of development with the need to protect and improve the quality of the Mediterranean environment, with a view to the optimal utilization of its resources. Furthermore, Governments considered that it would be appropriate to develop programmes of activities in a number of specific fields²⁾.
4. As a preparatory step for the development of projects, a survey of internationally supported activities in the Mediterranean region was undertaken and efforts to evaluate their impact on the environment were made. Special emphasis was put on those activities concerning marine resources, organic waste and industrial pollution.

5. While all the projects undertaken under the Mediterranean Action Plan are interconnected and complement each other, two specific projects illustrate most clearly the mutual reinforcement of the various activities. The first project deals with pollutants from land-based sources (MED X)³⁶⁾, ⁴²⁾ and has as one of its principal objectives to provide the Governments of the region with information on the present status of waste discharge and water pollution management practices. The second project is concerned with Mediterranean marine parks and wetlands and emphasizes the development of principles and guidelines for the establishment and management of these areas ³⁷⁾. The latter project, of course, is dependent on information gathered by the first one. Both projects illustrate the interconnections between environmental assessment, environmental management, including environmental legislation, and the required supporting measures.

II THE BLUE PLAN

6. Within the integrated planning component of the Action Plan, an important activity is the development of what has come to be known as the Blue Plan, a project in which Governments, United Nations agencies, intergovernmental and non-governmental organizations will co-operate. The Blue Plan calls for systematic surveys of major development and environmental protection activities carried out in the region and prospective studies of development trends based on the collection of data from the various countries of the Mediterranean. The exchange of information among countries is a fundamental aspect of the Blue Plan. At the Intergovernmental Meeting of the Mediterranean Coastal States in Split ⁴³⁾, Governments agreed to initiate the first phase of the Blue Plan. The objectives of the project, its geographical scope and the ways and means for its implementation including its financial and institutional implications were also defined.
7. Financial requirements were identified by the Split meeting and in mid-November 1977, 90 per cent of the Governments' contributions to the budget of the first phase of the Blue Plan had been confirmed. Several Governments, besides designating a national focal point for the Blue Plan, indicated some of the areas in which they are particularly interested. As part of the structure of the Blue Plan examined at Split, UNEP has constituted a provisional Group of Co-ordination and Synthesis for the Blue Plan which has drawn up the operational document of the project. This document is being used as the basic reference for the implementation of the first phase of the project (see UNEP/IG.11/INF.6).

8. While a number of preparatory activities such as the progressive establishment of the Group of Coordination and Synthesis, the drafting of the operational document, and the establishment of the terms of references of the surveys and prospective studies have already taken place, the working time-table of the first phase has had to be revised since several Governments were late in nominating focal points and only three of them designated national experts who would take part in the Blue Plan.

III THE PRIORITY ACTIONS PROGRAMME (PAP)

9. Besides the Blue Plan, the Split intergovernmental meeting of January-February 1977 adopted a Priority Actions Programme (PAP). Although distinct from each other in their approach to the harmonizing of development and environment, the PAP and the Blue Plan are mutually reinforcing. The main objective of the PAP is the initiation of co-operative efforts by the Coastal States of the Mediterranean region with respect to the adoption of appropriate environmental management practices on the basis of available knowledge in selected, priority actions areas. Thus all activities undertaken under the PAP seek to demonstrate, through practical actions, alternatives for environmentally sound socio-economic development. The Split intergovernmental meeting recommended that, wherever possible, activities should include a training component and assist in the transfer of appropriate technology and experience. Furthermore, it recommended that training activities should so far as possible make use of the existing national institutions in each country⁴³.
10. Although the Split meeting felt that it was unable to elaborate plans for specific projects within the PAP, delegations recommended to the Executive Director six fields where immediate action is required: protection of soil, management of water resources, marine living resources including management of fisheries and aquaculture, human settlements, tourism, and soft technologies for energy, including solar energy. Despite the lack of clear indications by Governments on what should be done in each of these fields and the lack of additional financial resources, UNEP has welcomed a number of initiatives from some Governments and given support to others concerning activities relevant to the PAP.

Comprehensive planning

11. The Executive Director has received confirmation from the Yugoslav Government of its willingness to share with interested countries the experience gained by Yugoslavia in the field of comprehensive planning through the implementation of the UNDP project "Protection of the Human Environment in the Yugoslav Adriatic Region". The results of this project would be used in initiating the following activities:

- i) development of appropriate methodologies for environmental management and environmental protection;
 - ii) improvement and application of methods for soil protection from erosion;
 - iii) use of methods for integrated planning of agricultural development on rocky soils;
 - iv) training seminars in environmental management.
12. The Executive Director is at present consulting with the Government of Yugoslavia so that the details of these proposals may be worked out, specifying in particular the objectives, programmes of work, time-tables, potential participants, expected contributions from various Mediterranean countries, and financial resources required, as well as ways and means for mobilizing these resources.

Fresh water resources

13. In the area of management of fresh water resources, UNEP has given its support to the Centre de Formation Internationale de Gestion de Ressources en Eau (CEFIGRE) for the organization of seminars on the management of fresh water resources. The main objectives of the first seminar will be:
- i) to define the basis and outlines of the survey and prospective study of water resources of the Mediterranean Region which will be undertaken during the first phase of the Blue Plan (see UNEP/IG.11/INF.9);
 - ii) to serve as a forum for an exchange of views on the modalities of long-term co-operation among Mediterranean institutions responsible for water resources management;
 - iii) to arrange for in-the-field demonstrations of appropriate water management practices and technologies.
14. The first seminar, which was scheduled to take place during the week of 21-25 November 1977, has been postponed until early 1978 because a large number of Mediterranean developing countries had not designated an expert for participation in the seminar. The basic document of the seminar is before this meeting as document UNEP/IG.11/INF.9.

Marine living resources

15. At the Split intergovernmental meeting, the Greek delegation offered to convene a meeting of experts in consultation with UNEP, and other international organizations, particularly the FAO/GFCM, to consider a detailed plan of action for another of the priority areas, namely, marine living resources: aquaculture and fisheries management. Preparations for this consultation, which will take place in Athens between 6 and 12 March 1978 at the kind invitation of the Greek Government, are at an advanced stage. The main objectives of the consultation are:
- i) to review the state and potential for development of aquaculture in the Mediterranean region;
 - ii) to identify systems of coastal aquaculture that have reached the stage for testing technical and economic viability on a pilot scale basis;
 - iii) to determine countries and areas where conditions are suitable for undertaking pilot scale production projects based on technologies developed (including additions to ongoing projects);
 - iv) to outline an action plan for the implementation of selected pilot projects;
 - v) to consider other activities which would strengthen national capabilities and stimulate regional co-operation for the expansion of coastal aquaculture.

Human settlements

16. In regard to human settlements, the Greek delegation to the Split conference offered to use the UNDP Environmental Pollution Control Project in Athens as a demonstration and training site in urban environmental problems for officials from other Mediterranean countries. As a follow-up to this offer, WHO has made the following proposals regarding the expansion of the Athens project into a project for information exchange and training on urban environmental pollution control for officials from Mediterranean countries:

- i) Exchange of information

The Athens project office would act as a focal point for information exchange on problems being encountered by Mediterranean countries in the field of environmental pollution as related to human settlements with special reference to air, water, solid waste and noise.

ii) Exchange of experience

Up to two seminars of one week's duration would be held per year to share experience on legislation, administration, survey and control techniques, relationship with planning, tourism, etc. The Athens project office would make the necessary administrative arrangements and provide facilities for the seminars. In addition, a regular news letter would be produced giving information of interest in these fields for circulation to participating governments and to authorities involved in the Mediterranean area.

iii) Training

In-service training would be given by project staff, and one or two students could be allocated to each of the five sectional teams on air, water, solid waste, noise and source monitoring i.e. a maximum of 10 trainees for a period of 3 to 5 months. Two groups could be handled per year i.e. a maximum of 20 individuals.

In addition, training workshops of 1 to 2 weeks' duration would be attended by not more than 20 students per session. Between 2 and 4 workshops would be held per year. Subjects would cover the various sectors of environmental pollution control activities, and in-service trainees would be given the opportunity of attending these workshops. In addition, in-service trainees would spend a number of hours per week at tuition sessions under the direction of two specially recruited, international lecturers. Project staff would also give lectures as their other duties permitted.

Energy

17. In the field of non-conventional sources of energy, UNEP, jointly with UNDP and ECE, at the request of the Government of Malta, has sponsored fact-finding missions which have explored the possibilities and feasibility of developing a centre for non-conventional sources of energy in Malta. Consultations between the Government of Malta, UNDP and UNEP are now under way in regard to the implementation of the recommendations of the expert missions.

Training in environmental management

18. In their attempts to deal with problems of environmental degradation, Governments, particularly those of developing countries, have expressed their needs for environmental managers adequately trained in environmental sciences and well acquainted with the decision-making process. In order to train such managers, as part of the training component of the Mediterranean Action Plan, UNEP has sponsored the participation of officials and experts from Mediterranean countries in training seminars in environmental management. Specific mention should be made of the seminars organized by the Centre d'Etudes Industrielles in Geneva on Environmental Management of Land Use and Plant Siting; Environmental Management of Products and Technology etc. Participation in the MAB workshop on management of the Mediterranean landscape which took place in Tunisia from 29 November to 3 December 1977 was also sponsored by UNEP.
19. Recently, the Government of the Republic of Italy and UNEP decided to support the organization of an International Training Programme in Environmental Management for decision-makers, experts and technicians from Mediterranean and Middle-East developing countries. The training programme will take place in Urbino, Italy and will start in early 1978. Its main objectives are to:
- i) familiarize participants with the concept of the environment as an interdisciplinary and inter-sectoral field in which all components are interrelated and inter-dependent;
 - ii) demonstrate how environmental issues relate closely to socio-economic activities;
 - iii) introduce participants to some of the most up-to-date and comprehensive methodologies, analytical tools and technologies used in dealing with environmental issues;
 - iv) point out some of the concrete and successful environmental management activities undertaken or under way at the national and international levels.
20. Availability and publications of up-to-date geographical and socio-economic data are indispensable for proper environmental management. The publication in January 1976 of a book on the geographic and socio-economic framework of the Blue Plan was very well received in all circles. In view of the need and heavy demand for this type of publication, the Executive Director intends to convene in April 1978 a meeting of geographers, economists, sociologists etc. designated by Governments from all the Mediterranean countries. At the kind invitation of the Government of Yugoslavia, the meeting will take place in that country. The two main purposes of the meeting would be:

- i) to up-date the document published in January 1976;
- ii) to advise on the establishment of a permanent network for the exchange of geographic and socio-economic data among interested Mediterranean countries.

IV. OTHER ACTIVITIES

Conservation and protected areas

21. As part of the Action Plan, the Executive Director convened a consultation of experts to advise him on the scientific rationale which should be followed in the establishment and management of natural reserves, in particular marine parks and wetlands. At the kind invitation of the Government of Tunisia, the Consultation was convened in Tunis from 12 to 14 January 1977³⁷⁾. The Consultation discussed the significance of Mediterranean marine parks and wetlands, reviewed and up-dated existing information on Mediterranean marine parks and wetlands and adopted draft principles and guidelines for the establishment and management of Mediterranean protected areas.
22. The Consultation made the following recommendations to the Executive Director:
 - i) Mediterranean protected areas, in particular the aquatic parks, reserves and wetlands, should be organized into an Association of Protected Mediterranean Areas. One member of the Association should act as co-ordinator of the Association's activities.
 - ii) Regular, periodic meetings should be organized for representatives of Mediterranean protected areas to exchange views on their experience and problems.
 - iii) Research on ecological problems of protected areas should be intensified and should be related to the on-going UNEP Co-ordinated Mediterranean Pollution Monitoring and Research Programme.
 - iv) An intergovernmental meeting should be convened to consider and adopt guidelines and technical principles for the establishment and management of Mediterranean protected areas. The report of this Expert Consultation should be used in the preparatory work of the recommended intergovernmental meeting.
 - v) A Directory of Mediterranean protected areas should be prepared and kept under constant review.

23. As a follow-up to the Executive Director's invitation, several Mediterranean countries have identified their special protected areas which could be organized into an Association of Protected Mediterranean Areas.

Waste management

24. The problems connected with waste management have been treated within the project on pollutants from land-based sources. As an input into the assessment of the pollution load reaching the Mediterranean (see paragraph 22, UNEP/IG.11/3/Annex I), the project provides an analysis of the land-based sources of pollutants and of the amounts of pollution reaching the Mediterranean from coastal discharges and through rivers. The project has also analysed the waste disposal and management practices currently used in the Mediterranean countries.
25. The results of the project (see UNEP/IG.11/3/INF.5) have been analysed by an expert group meeting (Geneva, 19 - 24 September 1977)⁴²⁾. When considering the reported waste disposal and management practices the meeting emphasized the importance of a licensing system for individual waste discharges, particularly in connexion with the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources (see UNEP/IG.11/3/Annex III/Appendix II).
26. In the framework of the pilot project on coastal water quality control (MED VII) the first elements of a model code of practice^{27a)} applicable in Mediterranean coastal water pollution control has been formulated and steps have been taken to develop the principles and guidelines for establishing criteria governing the issue of an authorization for the discharge of wastes containing substances from the "grey" list of the Protocol on Pollutants from Land-Based Sources (see paragraph 37, UNEP/IG.11/3/Annex I/Appendix).

V. RECOMMENDATIONS

27. In order to allow the Executive Director to proceed with the implementation of the first phase of the Blue Plan as agreed at the 1977 Split consultation, the Governments who have not done so should, as soon as possible, and not later than the end of February 1978:
- i) designate national focal points for the Blue Plan and the PAP;
 - ii) nominate national participating institutions and experts for the Blue Plan activities and the PAP;
 - iii) indicate the surveys and prospective studies of the Blue Plan and the PAP activities in which their institutions and experts would be ready to play a leading role;
 - iv) forward to UNEP Fund their financial contribution to the agreed Blue Plan budget.

28. Mediterranean Governments should also make firm commitments regarding the active participation of their national institutions and experts in the activities already planned, in particular the following;
- i) seminar on fresh water resources management in the Mediterranean region, Aix-en-Provence, France;
 - ii) expert consultation on aquaculture and the environment in the Mediterranean region, Athens, 6-12 March 1978;
 - iii) training and information exchange in urban environmental pollution control, Athens;
 - iv) International Training Programme in Environmental Management, Urbino, Italy;
 - v) seminar on the geographic and socio-economic framework of the Blue Plan, Yugoslavia;
 - vi) activities concerning non-conventional sources of energy.
29. In the light of the significance of protected areas from the socio-economic, scientific and conservation points of view, Governments should support the protection and rational management of existing marine parks, wetlands and other protected areas. They should also promote the creation of new protected areas in the region. In particular, Governments should:
- i) support the efforts of the Executive Director to create an Association of Protected Mediterranean Areas and advise him on the designation of one member of the Association to act as the co-ordinator of the Association's activities;
 - ii) request the Executive Director to convene periodic meetings of representatives of Mediterranean protected areas to exchange views on their experiences and problems;
 - iii) expand the research projects on ecological problems of protected areas and relate them to UNEP MED POL activities;
 - iv) ask the Executive Director to convene an intergovernmental meeting to consider and adopt guidelines and technical principles for the establishment and management of Mediterranean protected areas. The meeting should also consider the development of a protocol on the protection and management of Mediterranean Protected Areas (see paragraphs 40 and 41, UNEP/IG.11/3/Annex III);

- v) contribute to the preparation and periodic up-dating of a Directory of Mediterranean protected areas.

30. The relevance of the various projects on the assessment of the sources, amounts, levels and effects of pollutants (see UNEP/IG.11/3/Annex I), in particular MED VII and MED X, to the management of environmental problems has been clearly demonstrated.

It is therefore recommended that Governments support the follow-up actions of these projects so that:

- i) appropriate combinations of regulatory, technical and economic instruments may be developed and applied to ensure environmentally sound resources management;
- ii) appropriate administrative procedures will succeed in bringing about the necessary co-ordination of marine pollution control wherever there are multiple responsibilities;
- iii) administrative practices relevant to the issuance of industrial licences are developed and applied taking into account environmental considerations;
- iv) the potential environmental impact of new installations around the Mediterranean Sea may be taken into consideration as early as possible in the planning process.

PROGRESS REPORT AND RECOMMENDATIONS
CONCERNING THE ENVIRONMENTAL LEGISLATION
COMPONENT OF THE ACTION PLAN

- I. BARCELONA INTERGOVERNMENTAL MEETING
ON THE PROTECTION OF THE MEDITERRANEAN, January/February 1975
 1. Chapter III of the Action Plan ²⁾ adopted by the "Intergovernmental Meeting on the Protection of the Mediterranean" deals with environmental legislation, and in particular, with "the framework Convention and related Protocols with their technical annexes for the protection of the Mediterranean Environment". At the Barcelona Meeting in 1975, Governments considered the draft texts of three legal instruments:
 - a draft framework convention for the protection of the marine environment against pollution in the Mediterranean (UNEP/WG.2/INF.3), prepared under the auspices of the Food and Agriculture Organization of the United Nations (FAO);
 - a draft protocol on co-operation in combating pollution of the Mediterranean by oil and other harmful substances (UNEP/WG.2/INF.4), prepared by a consultant from the Intergovernmental Maritime Consultative Organization (IMCO).
 - and a draft protocol for the prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft (UNEP/WG.2/INF.5), prepared by the Spanish delegation.
 2. In Chapter III of the Action Plan, the meeting noted with satisfaction the preparatory work that had been undertaken in preparing those draft texts and "requested the Executive Director of UNEP, in co-operation with the Governments and United Nations agencies concerned to convene working groups of governmental legal and technical experts ... to put into definitive form the draft legal instruments ... with a view to their adoption by a conference of plenipotentiaries."
 3. In response to this request, the Executive Director convened two working groups for the purpose of negotiating the final text of the Convention and protocols. These working groups met in Geneva on 7 to 11 April 1975 and 7 to 9 January 1976.

II. BARCELONA CONFERENCE OF PLENIPOTENTIARIES
OF THE COASTAL STATES OF THE MEDITERRANEAN
REGION ON THE PROTECTION OF THE MEDITERRANEAN
SEA, February 1976 (OPERATIVE PARAGRAPHS III.A.4
AND III.A.5 of ACTION PLAN)

4. In light of the deliberations of these groups, the three legal instruments were revised by the Secretariat and in accordance with operative paragraph III.A.5 of the Action Plan were submitted for adoption to "the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea", Barcelona, 2-16 February 1976.
5. The Barcelona Conference of Plenipotentiaries successfully concluded with the adoption and signature by twelve states ⁴⁴⁾ of the following:
- Convention for the Protection of the Mediterranean Sea against pollution;
 - Protocol for the Prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft;
 - Protocol concerning co-operation in combating pollution of the Mediterranean Sea by oil and other harmful substances in cases of emergency.

The Conference also adopted ten resolutions.

6. The inter-relationship between the Convention and protocols is well known to all Governments of the Mediterranean Region and need not be explained in detail in this paper. What is important to note is that as of 1 November 1977, fifteen Mediterranean States ⁵⁾ and the European Economic Community have signed the Convention and two protocols, and three states ⁶⁾ have deposited their instruments of ratification with the depositary Government, Spain. The Convention will enter into force "on the same date as the protocol first entering into force" and "any protocol ... shall enter into force on the thirtieth day following the date of deposit of at least six instruments of ratification, acceptance, or approval of, or accession to such Protocol" (Art. 27). The Executive Director is hopeful that the sixth instrument of ratification may be deposited by the time of the Monaco Intergovernmental Review Meeting.

III.

INTERIM ARRANGEMENTS

(Resolution 2 of Barcelona Conference of Plenipotentiaries)

7. In connection with the legal instruments and in conformity with the Conference resolutions adopted in February 1976, the Executive Director undertook to establish a minimal institutional infrastructure to assist the rapid entry into force and implementation of the Convention and protocols. Specifically, in accordance with Resolution 2, entitled "Interim Arrangements", which calls on the Executive Director to make such interim arrangements as may be required for the achievement of the objectives of the Convention" ⁴⁵⁾ and at the invitation of the Government of Spain, an office of the Interim Secretariat for the Barcelona Convention on the Protection of the Mediterranean Sea was established in Madrid on 1 August 1978. This office reports to the small coordinating unit within UNEP responsible for the entire Action Plan.
8. The function of the Madrid office has been to facilitate the early entry into force of the Convention and protocols by serving as a communication link among the Coastal States of the Mediterranean region, the Government of Spain as the Depositary, and UNEP in all matters related to the signature and ratification of the Convention and protocols. In addition, the Executive Director appointed a Special Adviser to assist him in promoting the early entry into force of the Mediterranean legal instruments adopted at the Barcelona Conference. In fulfilling his duties, the Special Adviser has visited a large number of Mediterranean capitals to meet with Government representatives and to discuss and encourage rapid completion of national procedures for ratification. A list of the Special Adviser's consultations is contained in Appendix I to this Report.

IV.

REGIONAL OIL COMBATING CENTRE

(Resolution 7 of Barcelona Conference of Plenipotentiaries)

9. Furthermore, in accordance with Resolution 7, "Establishment of a regional oil combating centre for the Mediterranean", and in direct connection with the Protocol on Co-operation in Pollution Emergencies, the Executive Director, after consultations with the Government of Malta and the Inter-Governmental Maritime Consultative Organization, established the Regional Oil Combating Centre for the Mediterranean Sea in Malta. As called for in Resolution 7, the Executive Director entrusted the functions and responsibility as co-operating agency for the establishment and operation of the Centre to IMCO, which has submitted a progress report to this meeting under document symbol UNEP/IG.11/INF.7. The Centre was officially inaugurated on 11 December 1976. The primary objective of the centre is to help coastal States of the region take co-operative and timely steps to prevent damage to their coastal resources from massive and accidental pollution by disseminating information, preparing contingency plans, maintaining efficient communication systems and encouraging technological co-operation and training programmes in the region.

10. During its relatively short existence the Centre has established links with national focal points in 16 Mediterranean countries, identified the ways and means for co-operation with them, surveyed the existing national facilities available in cases of emergency and the needs for additional training in this field, and has begun the preparation of subregional contingency plans.
11. The Barcelona Conference of Plenipotentiaries also requested the Executive Director "to consult with the coastal States of the Mediterranean Region on the required objectives and functions of [potential] subregional centres and their relationship to the regional oil combating centre" ⁴⁶⁾. The Executive Director carried out those consultations with the collaboration of a high level consultant who visited the capitals of the Mediterranean as the joint representative of IMCO and UNEP. The Executive Director's report on the consultations is before the meeting as document UNEP/IG.11/INF.8. This report and the recommendations contained therein are based on the findings of the consultant's mission and have been prepared in co-operation with IMCO. On the basis of the consultations, the Executive Director would advise that it is too early to take a decision to establish subregional oil combating centres when the regional centre has only begun its operations. Instead, it is recommended that Governments strengthen their national capabilities to respond to pollution emergencies and co-operate as fully and as effectively with the regional centre as possible. The feasibility and need for establishing subregional centres may be reviewed, if Governments so desire, once sufficient experience has been gained in operating the Malta centre.

V.

ADDITIONAL PROTOCOLS

12. Paragraph III.A.6 of the Action Plan:

"Recommends that the Executive Director of UNEP, in co-operation with the Governments and United Nations agencies concerned, convene as soon as practicable working groups of governmental experts to prepare additional protocols, taking into account the work of the present meeting."

Recognizing pollution from land-based sources as the most serious problem in the region, the Executive Director considered it appropriate to develop a protocol in this respect as a first priority.

Protocol on Land-Based Sources of Pollution

13. Article 8 of the Convention binds the Contracting Parties to "take all appropriate measures to prevent, abate and combat pollution of the Mediterranean Sea Area caused by discharges from rivers, coastal establishments or outfalls, or emanating from any other land-based sources within their territories". In this connexion, the Conference of Plenipotentiaries also adopted a resolution calling on the Executive Director "to continue the preparatory work for a draft Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources".
14. In response to this request UNEP, in co-operation with the World Health Organization, convened an Intergovernmental Consultation concerning a Draft Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources. At the kind invitation of the Government of Greece, the Consultation was held at Athens from 7 to 11 February 1977.
15. In preparation for the consultation a series of background and working documents were prepared by WHO, in co-operation with UNEP, which described the possible content of a protocol to control pollution from land-based sources. The main objective of the consultation was to advise the Executive Director on a programme of action for the development of the protocol. The meeting considered the principles suggested for inclusion in the draft protocol and prepared a revised text, which it recommended should be studied again at a second intergovernmental consultation.
16. The Athens meeting did not have sufficient time to study in depth the technical problems associated with the protocol. Consequently, UNEP and WHO were called upon to assure that the Meeting of Experts on Pollutants from Land-Based Sources, scheduled to be convened from 19 to 24 September 1977 in Geneva, consider the technical annexes and other technical problems relevant to the protocol on land-based sources with a view to preparing agreed recommendations for consideration by the second intergovernmental consultation.
17. Accepting the recommendations of the Athens consultation, the Executive Director convened the technical meeting of experts in Geneva from 19 to 24 September, and subsequently, at the kind invitation of the Government of Italy, he held the second intergovernmental consultation in Venice from 17 to 21 October 1977.
18. Before submitting the technical annexes to the Geneva meeting of experts, UNEP asked the Governments to submit their written comments on the annexes as they were proposed to the Athens meeting. In addition, the text of the annexes was reviewed by the WHO/UNEP Workshop on Coastal Water Pollution Control, Athens, 27 June - 1 July 1977, and the WHO consultations on Radioactivity Releases into the Sea, Monaco, 27-29 July 1977. In the light of comments made by Governments and the deliberations held during the two workshops, the technical annexes were revised and presented to the Meeting of Experts on Pollutants from Land-Based Sources.

19. The experts meeting discussed in depth the annexes and recommended a revised text which was submitted to the second intergovernmental consultation in Venice.
20. The Venice meeting succeeded in transforming the recommended principles into a preliminary draft protocol. The technical annexes were also reviewed by the meeting, and revisions were incorporated as suggested by the delegations. The meeting noted that a great deal of technical work still needed to be done before the annexes could be adopted in final form, and the Secretariat was requested to improve the quality of information available on the substances proposed for inclusion in the annexes. The meeting also requested the Secretariat to prepare a linguistically improved draft protocol for submission to the Monaco Intergovernmental Review Meeting.
21. Accepting once again the advice of the consultation, the Executive Director convened in Geneva on 8 and 9 November a small working group to harmonize linguistically the four language versions of the preliminary draft protocol. The group was instructed to review and improve the language and juridical style of the protocol but not to change the substance in any way. This mandate was duly followed, and the text of the preliminary protocol as proposed by the working group is contained in Appendix II to this report. One of the principle functions of the Committee dealing with agenda item 7 of the present meeting will be to proceed as far as possible towards the agreement of a final text, including the technical annexes.
22. To assist in the discussions of the technical annexes, the Secretariat commissioned several consultants to prepare hazard profiles of the substances listed in the annexes. The results of their work are contained in document UNEP/IG.11/INF.10.
23. If sufficient progress can be made during this meeting, the Executive Director would propose to convene a third consultation concerning the draft protocol in mid-1978 so that a short diplomatic conference to adopt the final protocol could be held before the end of the year.

Other Protocols

24. When adopting the Convention for the Protection of the Mediterranean Sea against Pollution, States foresaw the development of a separate protocol for most of the sources of pollution covered by a general provision in the Convention. Table 1 illustrates areas for which a protocol has yet to be developed.

TABLE 1

Article No	Title of Article	Action taken
Article 5	Pollution caused by dumping from ships and aircraft	Protocol for the prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft, adopted at Barcelona, 16 February 1976
Article 6	Pollution from Ships	Section III.B of the Action Plan recommends that States become Parties to the 1973 Convention on the Prevention of Pollution from Ships and use concerted efforts to have Mediterranean designated as special area for the purposes of Annex II of that Convention
Article 7	Pollution resulting from exploration and exploitation of the continental shelf and the seabed and its subsoil	No regional legal agreement to date
Article 8	Pollution from land-based sources	Two intergovernmental consultations held: Athens, 7-11 February 1977; and Venice, 17-21 October 1977. Preliminary draft Protocol prepared
Article 9	Co-operation in dealing with pollution emergencies	Protocol concerning co-operation in combating pollution of the Mediterranean Sea by oil and other harmful substances in cases of emergency, adopted at Barcelona, 16 February 1976
Article 10	Monitoring	Co-ordinated Pollution Monitoring and Research Programme operating under Action Plan. No regional legal agreement to date
Article 11	Scientific and technological co-operation	Training and technological co-operation within Action Plan. No regional legal agreement to date
Article 12	Liability and Compensation	Resolution 4 of Barcelona Conference of Plenipotentiaries calls for study by a committee of experts of possibility of establishing an Inter-state Guarantee Fund for Mediterranean Sea Area after entry into force of Convention. No regional legal agreement to date

25. Reviewing the table, one can conclude that the following, not in order of priority, are possible areas for which a separate protocol may be developed:
- a) Pollution resulting from exploration and exploitation of the continental shelf and its subsoil;
 - b) Monitoring;
 - c) Scientific and technological co-operation;
 - d) Liability and Compensation.

In addition, the Secretariat suggests "specially protected marine and coastal areas" is a matter to which a protocol could fruitfully address itself.

26. With regard to the above the Executive Director would like to recall several points for consideration by delegations.

Pollution from Ships

27. At the Barcelona Intergovernmental Meeting in 1975, Governments recognized that the problem of pollution from ships should be approached from an international level and not from a regional level. Therefore, section III.B of the Action Plan was developed. This section "recognized the need to give special protection to the Mediterranean against pollution due to the operation of ships", and recalled the 1973 International Convention on the Prevention of Pollution from ships. Operative paragraph 2 of this section:

Recommends that all coastal States of the Mediterranean become parties to the 1973 Convention and use their concerted efforts by appropriate measures within the framework of IMCO to have the Mediterranean designated as a special area for the purposes of Annex II of the Convention.

28. The Executive Director feels that this recommendation is still valid, and would suggest that delegations at the Monaco meeting reconfirm their commitment to fulfill this recommendation. In this case, it would not seem necessary at this stage to consider the development of a separate protocol.

29. Operative paragraph 2 of Section III.B of the Action Plan:

Recommends that the coastal States of the Mediterranean provide the shore facilities envisaged in Annexes I and II of the said Convention and to establish technical co-

30. The Executive Director is pleased to report that in co-operation with IMCO, initial steps have been taken towards carrying out a feasibility study on reception facilities for selected ports in the Mediterranean. This study would also serve as a useful complement to the work of the Regional Oil Combating Centre.

Pollution resulting from exploration and exploitation of the continental shelf and its subsoil

31. At Barcelona in 1975, action in this field was postponed pending the outcome of the United Nations Conference on the Law of the Sea (UNCLOS). Since that time, as all delegations are aware, UNCLOS has held several sessions without coming to a definitive conclusion. The next session is scheduled to begin on 29 March 1978.
32. Another development since February 1975, has been the decision taken by UNEP's Governing Council at its 5th session in Nairobi in May 1977 to request the Executive Director to convene as soon as possible a working group on environmental law which would decide on priority areas of study during 1977-1979. This group met in Geneva in September 1977 and selected as its first area of study, "offshore mining and drilling within national jurisdiction". The working group plans to look at both preventive and corrective measures in the course of its study.
33. As a contribution to the efforts of both the UNEP working group on environmental law and the Mediterranean Action Plan, the Executive Director has made arrangements to support the International Juridical Organization (IJO) in the convening of a Meeting of Experts on the Legal Aspects of Pollution Resulting from Exploration and Exploitation of the Continental Shelf, the Seabed and its Subsoil in the Mediterranean Sea Area. The objective of the meeting will be to define the problems which may arise in this context and to propose legal actions - both national and regional - to prevent and remedy these problems. The IJO proposes to convene this meeting in the autumn of 1978.
34. If the meeting produces concrete results and recommendations, the Mediterranean coastal States may wish to request UNEP to begin, on the basis of the information resulting from the IJO expert meeting, preparing guidelines for a Protocol concerning exploration and exploitation of the continental shelf and the seabed and its subsoil in connexion with Article 7 of the Barcelona Convention. These guidelines could then be considered at an intergovernmental consultation of legal and technical experts.

Monitoring, and Scientific and Technological Co-operation

35. The co-ordinated Pollution Monitoring and Research Programme and related projects that have been developed as part of the Action Plan will be discussed under Agenda item 5 of the Meeting. The Executive Director has recommended that the pilot phase of this programme be extended through 1978 and that using the experience and results obtained during the pilot phase, a long term monitoring programme should be prepared, adopted, and implemented.
36. If this recommendation is adopted by the Governments, delegations may wish to consider the development of a protocol concerning scientific, and technological co-operation, including joint monitoring activities although the Executive Director feels that the working arrangements developed at present under the coordinated research and monitoring programme are sufficient.

Liability and Compensation

37. Resolution 4 of the Barcelona Conference of Plenipotentiaries calls upon UNEP, as the Organization responsible for the Secretariat functions of the Convention, to:
- "a) propose that a study should be made of the possibility of establishing an Interstate Guarantee fund for the Mediterranean Sea Area and that the study should be entrusted to a committee of experts from the Contracting Parties to the Convention;
 - b) request the said committee of experts to report to the Contracting Parties concerning the implications of the establishment of the fund, in order that, at a later stage, appropriate legal instruments may be prepared."
38. Since the resolution specifically requests UNEP to propose such a study at the first meeting of the Contracting Parties, no work has been undertaken in this respect to this date. Within the forum of UNEP's global programme on Environmental Law, UNEP did convene a Group of Experts on Liability for Pollution and other Environmental Damage and Compensation for such Damage. This group has now been superseded by the Working Group on Environmental Law noted in paragraph 31 above. The group's first area of study will be corrective and preventive measures for pollution damage arising from offshore mining and drilling carried out in the areas within national jurisdiction.
39. Delegations may wish to consider the matter of a protocol on liability and compensation after the study on an Inter-state Guarantee Fund is completed, and at present, to give priority to other protocols. It will be necessary, however, whenever this matter is reviewed, to decide whether it is advisable to have one protocol concerning liability and compensation for pollution damage from all sources as defined in the Convention or whether it would be more feasible to develop a separate set of rules governing liability and compensation with respect to each specific source of pollution. The latter

Specially protected marine and coastal areas

40. As reported in paragraph 29 of document UNEP/IG.11/3, UNEP convened an expert consultation in Tunis concerning Mediterranean marine parks and wetlands. At this meeting, it was recognized that a protocol on specially protected marine and coastal areas would be an extremely useful tool for protecting those areas in the region. In addition, the Athens intergovernmental consultation concerning a draft protocol on land-based sources of pollution agreed on a general reference to specially protected areas in the protocol on land-based sources. Furthermore, the meeting considered that specific provisions could best be developed in a separate legal instrument, taking into account the relevant work of other international organizations. It was recommended by the Athens consultation that this matter be considered by the Monaco intergovernmental review meeting.
41. If delegates to the Monaco Intergovernmental Meeting should decide that priority should be given to the development of such a protocol, the Executive Director would propose that the work on this protocol be undertaken in co-operation with FAO, UNESCO and the IUCN and be closely linked with the activities on specially protected areas currently being elaborated as part of the environmental management component of the Action Plan (see UNEP/IG.11/3/Annex II).

VI.

RECOMMENDATIONS

42. As an expression of their full support for the protection and harmonious development of the Mediterranean basin and the activities launched as part of the agreed Action Plan, the Governments of the Mediterranean States are urged to ratify, with the shortest possible delay, the Convention for the Protection of the Mediterranean Sea against Pollution, the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft, and the Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency.
43. UNEP, as the Organization responsible for the Secretariat functions under Article 13 of the Convention, should convene the first meeting of the Contracting Parties to the Convention and protocols within one year of the entry into force of the Convention. By that time it is hoped that the number of Contracting Parties will include a large majority of the Mediterranean coastal States.
44. In preparation for the first meeting of the Contracting Parties, UNEP should prepare, in consultation with the Governments of the region and relevant international organizations, a draft of the rules of procedure and financial rules to be adopted by the Contracting Parties as provided for in Article 18 of the Convention.

45. Recognizing that pollution from man's activities on land represents the most significant source of pollution in the Mediterranean Basin, the Governments of the Mediterranean States should continue their consultations on the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, leading to the adoption of the Protocol at a diplomatic conference in late 1978. UNEP should assist the States in this task by providing as complete technical data on land-based pollutants as possible.
46. Recognizing the activities already under way within the Action Plan on specially protected areas, UNEP should, in co-operation with FAO, UNESCO, and IUCN, prepare background material on existing legislation and regional legal alternatives for the protection of such marine and coastal areas. UNEP should convene a meeting of experts to review this material and to advise on the feasibility of developing a protocol on specially protected marine and coastal areas.
47. Taking note of the work already under way within the UNEP Working Group on Environmental Law regarding corrective and preventive measures for pollution damage arising from offshore mining and drilling carried out in the areas within national jurisdiction and of the IJO meeting of experts on Legal Aspects of Pollution Resulting from Exploration and Exploitation of the Continental Shelf, the Seabed and its Subsoil in the Mediterranean, UNEP is requested to report to the first meeting of the Contracting Parties on the progress achieved in those fora so that a decision may be taken as to the feasibility of developing a protocol in this respect.
48. The Mediterranean States should become Parties to the 1973 Convention on the Prevention of Pollution from Ships and use their concerted efforts by appropriate measures within the framework of IMCO to have the Mediterranean designated as a special area for the purposes of Annex II of that Convention.
49. In accordance with Resolution 4 of the Barcelona Conference of Plenipotentiaries, the Executive Director should be prepared to propose to the first meeting of Contracting Parties that a study be made of the possibility of establishing an Interstate Guarantee Fund for the Mediterranean Sea Area and that the study should be entrusted to a committee of experts from the Contracting Parties to the Convention.
50. The Mediterranean coastal States should provide full support and co-operation to the Regional Oil Combating Centre so that it may effectively fulfill the objectives assigned to it. Each State should develop its national contingency plans and capabilities for dealing with pollution emergencies. The feasibility of establishing subregional oil combating centres may be reviewed at a later stage when experience has been gained through the operation of the regional centre.

Missions of Special Adviser to Executive Director concerning early ratification and entry into force of Barcelona Convention and Protocols

In a letter to the Mediterranean coastal States dated 20 September 1976, the Executive Director informed Governments of the designation of a Special Adviser on the 1976 Barcelona Convention and protocols, and of his intention to send the adviser to the capitals of various Mediterranean States to consult with them on the national measures and procedures necessary for early ratification and entry into force of the Convention and protocols.

As of November 1977, the Special Adviser has undertaken the following missions:

Egypt	11-14 May 1977
France	16 February 1977
Greece	7-13 February 1977
Libya	28-31 May 1977
Monaco	5 April 1977
Morocco	22-24 February 1977
Tunisia	20-22 February 1977

PRELIMINARY DRAFT PROTOCOL FOR THE PROTECTION
OF THE MEDITERRANEAN SEA AGAINST POLLUTION
FROM LAND-BASED SOURCES

Article 1. General objective

The Contracting Parties to this Protocol (hereinafter referred to as "the Parties") shall take all appropriate measures to prevent, abate and combat pollution of the Mediterranean Sea Area caused by discharges from rivers, coastal establishments or outfalls, or emanating from any other land-based sources within their territories.

Article 2. Coverage

The area to which this Protocol applies (hereinafter referred to as the "Protocol Area") shall be the Mediterranean Sea Area as defined in article 1 of the Convention for the Protection of the Mediterranean Sea against Pollution; it shall also include internal coastal waters.

Article 3. Scope

1. The Protocol shall apply to all polluting discharges reaching the Protocol Area from the territories of the Parties:

- (a) directly from coastal establishments or outfalls, or through coastal dumping;
- (b) through run-off;
- (c) through rivers, canals and other watercourses;
- (d) through the atmosphere (wherever this is specified in the Protocol or in any annex thereto).

2. The Protocol shall also apply to all polluting discharges from fixed man-made off-shore structures under the jurisdiction of a Party.

Article 4. Definitions

For the purposes of this Protocol:

- (a) "The Convention" means the Convention for the Protection of the Mediterranean Sea against Pollution, adopted in Barcelona on 16 February 1976;
- (b) "Organization" means the body referred to in article 13 of the Convention.

- (c) "internal coastal waters" means the waters on the landward side of the base lines from which the breadth of the territorial sea is measured and extending, in the case of watercourses, up to the freshwater limit;
- (d) "freshwater limit" means the place in the watercourses where, at low tides and in a period of low freshwater flow, there is an appreciable increase in salinity due to the presence of sea-water;
- [(e) "new installation" means:
 - 1. any establishment used for whatever purpose:
 - (i) for which a building contract is concluded or a construction permit granted more than ... after the entry into force of the Protocol; or
 - (ii) for which construction or site works are begun after the time limit indicated above or which are not completed three years after the entry into force of the Protocol;
 - 2. any extension or conversion of existing installations resulting in:
 - (i) an increase of more than 25 per cent in production capacity or the amount of waste discharges; or
 - (ii) a change in the nature of the discharges.]

Article 5. Reduction of pollution from existing sources

- 1. The Parties shall formulate and adopt programmes for the progressive reduction of pollution from existing land-based sources aimed at protecting and improving the quality of the marine environment and carried out in accordance with a time-table agreed upon by the Parties.

Article 6. Discharges from new installations

- [1. The Parties shall implement, jointly or individually, the programmes and measures necessary to ensure that wastes reaching the Protocol Area from new installations are discharged in such a manner or, as necessary, after such treatment as to avoid deleterious effects on the marine environment which interfere with any existing or foreseeable legitimate uses.]

2. The application of paragraph 1 above shall not permit the implementation of measures less stringent than those prescribed in articles 7 and 8 below.

Article 7. Substances listed in annex I

1. The Parties shall adopt strict measures in order to eliminate pollution of the Protocol Area from land-based sources by the substances listed in annex I. To this end they shall formulate, jointly or individually as appropriate, programmes and measures to ensure such elimination, if necessary in stages.

2. The Parties shall, within a period of ... years from the date of entry into force of the Protocol, prepare and adopt a time-table for the application of emission standards and/or standards of use as appropriate. The standards and time-table shall be fixed by common agreement and periodically reviewed for each of the substances listed in annex I.

Article 8. Substances listed in annex II

1. The Parties shall combat and strictly limit pollution from land-based sources in the Protocol Area by substances listed in annex II. They shall formulate, jointly or individually as appropriate, programmes and implement measures towards this end.

2. Discharges of these substances shall be subject to the issue by the competent national authorities of an authorization for which the factors set forth in Annex III are taken into account.

Article 9. Common guidelines, criteria or standards

1. The Parties shall progressively formulate and adopt, in co-operation with the competent international organizations, common guidelines, criteria or standards dealing, in particular, with:

- (a) the length, depth and position of pipelines for coastal outfalls, taking into account, inter alia, the methods used for pretreatment of effluents;
- (b) special requirements for effluents requiring separate treatment;
- (c) the quality of sea-water used for specific purposes that is necessary for the protection of human health, living resources and ecosystems;
- (d) the control and progressive replacement of products, installations and industrial and other processes causing significant pollution of the marine environment;

- (e) special requirements concerning the quantities discharged of the substances referred to in annex I and II, their concentration in effluents and methods of discharging them.

2. Without prejudice to the provisions of article 7, such common guidelines, criteria or standards shall take into account subregional features, local geographical and physical characteristics, the economic capacity of the Parties and their need for economic development, the level of existing pollution and the local absorptive capacity of the marine environment.

3. The common guidelines, criteria or standards shall be adopted in the form either of recommended practices or of provisions incorporated in annexes to the protocol.

Article 10. Specially protected areas

The Parties shall take appropriate measures (such as the establishment of marine parks) to protect, to the greatest extent possible, from any land-based pollution, certain areas selected because of particular ecological characteristics.

Article 11. Monitoring

Within the framework of the monitoring programmes provided for in article 10 of the Convention, and if necessary in co-operation with the competent international organizations, the Parties shall carry out at the earliest possible date monitoring activities in order:

- (a) systematically to assess, as far as possible, the levels of pollution along their coasts [and the quantities of pollutants discharged from their coastlines], in particular with regard to the substances listed in annexes I and II, and periodically to provide information in this respect.
- (b) to evaluate the effects of measures taken under the Protocol to reduce pollution of the marine environment.

Article 12. Scientific and technological co-operation

In conformity with article 11 of the Convention, the Parties shall co-operate as far as possible in scientific and technological fields related to pollution from land-based sources, including research on inputs, pathways and effects of pollutants and on the development of new methods for their treatment, elimination or reduction.

To this end the parties shall, in particular, endeavour to:

- (a) exchange scientific and technical information;
- (b) co-ordinate their research programmes.

Article 13. Training and assistance

1. The Parties shall, directly or if necessary with the assistance of competent regional or other international organizations, endeavour to promote programmes of assistance to developing countries, in particular in the fields of science, education and technology, with a view to preventing pollution from land-based sources and its harmful effects in the marine environment.

2. Such technical assistance, [provided on a favourable financial basis], may comprise the training of scientific and technical personnel, and the acquisition, utilization and production by those countries of appropriate equipment.

Article 14. Watercourses shared by several States

1. If discharges from a watercourse which flows through the territories of two or more Parties or forms a boundary between them are liable to cause pollution of the marine environment of the Protocol Area, the Parties concerned shall endeavour to take appropriate joint measures in order as far as possible to prevent, abate and combat such pollution.

2. The provisions of the Protocol may not be invoked against a Party insofar as that Party is unable, as a result of pollution having its origin in the territory of a non-contracting State, to ensure their full application.

Article 15. Pollution affecting other Parties

[1. When land-based pollution originating from the territory of one Party is likely, notwithstanding the implementation of the measures provided for in this Protocol,] to prejudice the interests of one or more of the other Parties, the Parties concerned shall, whenever the need arises and at the request of one or more of them, undertake to enter into consultation with a view to negotiating a solution.]

2. At the request of any Party concerned, the matter shall be placed on the agenda of the next meeting of the Parties, which may make recommendations with a view to reaching a satisfactory solution.

Article 16. Exchange of Information

1. The Parties shall inform one another, either directly or through the Organization, of measures taken under articles 5 to 8, 10, 11 and 13 and of any difficulties encountered in their implementation. This information shall take the form of reports, including, in the case of article 8, statistical data on authorizations granted. Procedures for the submission of such reports shall be determined by the meetings of the Parties.

2. Information communicated through the Organization shall be circulated as soon as possible to the other Parties.

3. Parties which agree to exchange information directly shall nevertheless communicate such information to the Organization.

Article 17. Meetings of the Parties

1. Ordinary meetings of the Parties shall take place in conjunction with ordinary meetings of the Contracting Parties to the Convention held pursuant to article 14 of the Convention. The Parties may also hold extraordinary meetings in accordance with article 14 of the Convention.

2. It shall be the function of the meeting of the Parties to this Protocol:

- (a) to keep under review the implementation of the Protocol and to consider the efficacy of the measures adopted and the need for any other revisions, in particular in the form of annexes;
- (b) to review and amend any annex to the Protocol, as appropriate;
- (c) to formulate and adopt agreed programmes for the progressive reduction of pollution from existing land-based sources in accordance with article 5;
- (d) to adopt, in accordance with article 9, common guidelines, criteria or standards, in the form either of recommended practices or of provisions to be incorporated in annexes to the Protocol;
- (e) to make recommendations in accordance with article 15, paragraph 2;
- (f) to consider the information submitted by the Parties under article 16;
- (g) to discharge such other functions as may be appropriate for the implementation of this Protocol.

Article 18. Majority required for amendment or adoption of annexes

[Notwithstanding the provisions of subparagraph 2 (ii) of Article 17 of the Convention, amendments to the annexes to this Protocol, or the adoption of additional annexes, shall require a ... majority of the Parties].

Article 19. Final Clauses

1. The provisions of the Convention relating to any Protocol shall apply with respect to the present Protocol.
2. The rules of procedure and the financial rules adopted pursuant to article 18 of the Convention shall apply with respect to this Protocol, unless the Parties agree otherwise.
3. This Protocol shall be open for signature in from to by any State invited to participate in the Conference of Plenipotentiaries It shall also be open until the same date for signature by the European Economic Community and by any similar regional economic grouping of which at least one member is a coastal State of the Mediterranean Sea Area and which exercises competence in fields covered by this Protocol.
4. This Protocol shall be subject to ratification, acceptance or approval. Instruments of ratification, acceptance or approval shall be deposited with the Government of Spain, which will assume the functions of Depositary.
5. As from, this Protocol shall be open for accession by the States referred to in paragraph 3 above, by the European Economic Community and by any grouping referred to in that paragraph.
6. This Protocol shall enter into force on the thirtieth day following the deposit of at least instruments of ratification, acceptance or approval of, or accession to, the Protocol by the Parties referred to in paragraph 3 of this article.

ANNEX I

A. The following substances, families and groups of substances are listed ¹⁾ for the purposes of Article 7 of the Protocol. They have been selected mainly on the basis of their

- toxicity
 - persistence
 - bioaccumulation.
1. Organohalogen compounds and substances which may form such compounds in the marine environment. ²⁾
 2. Organophosphorus compounds and substances which may form such compounds in the marine environment. ²⁾
 3. Organotin compounds and substances which may form such compounds in the marine environment. ²⁾
 4. Mercury and mercury compounds.
 5. Cadmium and cadmium compounds.
 6. [Persistent mineral oils and persistent hydrocarbons of petroleum origin, in particular] used lubricating oils.
 7. Persistent [solid] synthetic materials [in particular plastics,] which may float, sink or remain in suspension and which may interfere with any legitimate use of the sea.
 8. Substances [having proven] [which are potentially] carcinogenic, teratogenic or mutagenic [properties] in or through the marine environment.
 9. [Radioactive wastes and other radioactive matter.]

OR

[Radioactive wastes and other radioactive matter to be defined by the Parties.]

1) Not in order of priority.

2) With the exception of those which are biologically harmless or which are rapidly converted into biologically harmless substances.

OR

[Radioactive wastes and other radioactive matter to be defined by the IAEA.]

OR

[Radionuclides, when the discharges do not comply with the principles of radiation protection and/or exceed the limits to be defined jointly by the Parties.]

B. [This annex applies to all wastes from land-based sources, including municipal and industrial discharges as well as any other point and non-point sources. The present annex does not apply to discharges which contain the substances referred to in Section A below the limits defined jointly by the Parties. The discharge of such wastes shall be subject to the provisions of annexes II and III.]

OR

[This annex applies to all wastes from land-based sources, including municipal and industrial discharges as well as any other point and non-point sources.]

OR

[The present annex does not apply to discharges which contain the substances referred to in Section A below the limits defined jointly by the Parties. The discharge of such wastes shall be subject to the provisions of annexes II and III.]

OR

[Delete entire Section B.]

ANNEX II

A. The following substances, families and groups of substances, or sources of pollution, listed for the purpose of Article 8 of the Protocol, have been selected mainly on the basis of criteria used for annex I, taking into account the fact that they are generally less noxious or are more readily rendered harmless by natural processes and therefore generally affect more limited coastal areas.

1. The following elements and their compounds:

1. zinc	6. selenium	11. tin	16. vanadium
2. copper	7. arsenic	12. barium	17. cobalt
3. nickel	8. antimony	13. beryllium	18. thalium
4. chromium	9. molybdenum	14. boron	19. tellurium
5. lead	10. titanium	15. uranium	20. silver

2. Biocides and their derivatives not covered in annex I.

3. Organosilicon compounds and substances which may form such compounds in the marine environment excluding those which are biologically harmless or are rapidly converted into harmless substances.

[4. Crude oils and hydrocarbons of petroleum origin and mixtures containing any of these other than those listed in annex I.]

5. Cyanides and fluorides.

6. Non-biodegradable detergents and other surface-active substances.

[7. Inorganic compounds of phosphorus and elemental phosphorus.]

8. Pathogenic micro-organisms.

9. Thermal pollution.

[10. Radioactive wastes and other radioactive matter, not covered in annex I.]

11. Substances which have a deleterious effect on the taste and/or smell of the products for human consumption derived from the aquatic environment, and compounds liable to give rise to such substances in the marine environment.

[12. Substances which have an adverse effect on the oxygen balance.]

B. [This annex applies to all wastes from land-based sources, including municipal and industrial discharges as well as any other point and non-point sources. The present annex does not apply to discharges which contain the substances referred to in Section A below the limits defined jointly by the Parties. The discharge of such wastes shall be subject to the provisions of annex III.]

OR

[This annex applies to all wastes from land-based sources, including municipal and industrial discharges as well as any other point and non-point sources.]

OR

[The present annex does not apply to discharges which contain the substances referred to in Section A below the limits defined jointly by the Parties. The discharge of such wastes shall be subject to the provisions of annex III.]

OR

[Delete entire Section B.]

C. The control and strict limitation of the discharge of substances referred to in Section A should be implemented in accordance with the criteria set out in annex III.

ANNEX III

The factors to be taken into account in establishing criteria governing the issue of an authorization for the discharge of wastes containing substances referred to in annex II or in Section B of Annex I include:

A. Characteristics and composition of the waste

1. Type and size of waste source (industrial process, etc.).
2. Type of waste (origin, average composition).
3. Form of waste (solid, liquid, sludge, slurry).
4. Total amount (volume e.g. per year).
5. Discharge pattern (continuous, intermittent, seasonal variations, etc.).
6. Concentrations with respect to major constituents, substances listed in annex I, substances listed in annex II, and other substances as appropriate.
7. Physical, chemical and biochemical properties of the waste.

B. Characteristics of waste constituents with respect to their harmfulness.

1. Persistence (physical, chemical, biological) in the marine environment.
2. Toxicity and other harmful effects.
3. Accumulation in biological materials or sediments.
4. Biochemical transformation rendering harmful compounds.
5. Adverse effects on the oxygen balance.
6. Susceptibility to physical, chemical and biochemical changes and interaction in the aquatic environment with other seawater constituents which may produce harmful biological or other effects on any of the uses listed in Section E below.

C. Characteristics of discharge site and receiving marine environment

1. Hydrographic, meteorological, geological and topographical conditions of the coastal area.
2. Location of the waste discharge (outfall, canal, outlet, etc.) and its location in relation to other areas (e.g. amenity areas, spawning, nursery and fishing areas, shellfish grounds), and other discharges.
3. Initial dilution achieved at the point of waste release.
4. Dispersion characteristics (e.g. effects of currents, tides and wind on horizontal transport and vertical mixing).
5. Water characteristics with respect to physical, chemical, biochemical, biological and ecological conditions in the discharge area.
6. Capacity of the receiving marine environment to receive waste discharges without undue effects.

D. Availability of waste treatment technology

The method of waste treatment and discharge should be selected taking into account the availability and the possible implementation of various treatment, re-use or elimination methods of industrial and domestic wastes and waste waters on land, including particularly, the methods available for new installations.

E. Potential impairment of marine ecosystems and sea-water uses

1. Effects on human health through pollution impact on:
 - (a) edible marine organisms;
 - (b) bathing waters;
 - (c) aesthetics.
2. Effects on marine ecosystems, in particular living resources, endangered species and critical habitats.
3. Effects on other legitimate uses of the sea.

FINANCIAL AND INSTITUTIONAL ARRANGEMENTS FOR
THE IMPLEMENTATION OF THE ACTION PLAN

1. The Intergovernmental Meeting on the Protection of the Mediterranean which was held in Barcelona from 28 January to 4 February 1975 adopted recommendations on the following four main aspects which constitute the Mediterranean Action Plan ²⁾:

- i) integrated planning of the development and management of the resources of the Mediterranean Basin;
- ii) co-ordinated programme for research, monitoring, and exchange of information and assessment of the state of pollution and of protection measures
- iii) environmental legislation, including the framework convention and related protocols with their technical annexes for the protection of the Mediterranean environment;
- iv) institutional and financial implications of the Action Plan.

2. The purpose of the present annex is to deal with the fourth aspect and, in this respect, it would be useful to recall certain recommendations ⁴⁷⁾ in this field which were adopted by the above-mentioned Intergovernmental Meeting. In order to make the necessary arrangements for the application of the recommendations on the first three aspects, the Executive Director of UNEP was requested, in particular, to:

- i) "Use available funds with minimum allocation for staffing and other administrative costs."
- ii) "Establish simple co-ordinating mechanisms which use, to the greatest extent possible, existing international organizations and co-ordinating bodies and which would deal with national institutions through the appropriate national authorities of the country concerned."

- iii) "Keep under review, as the programme develops, the possible need for the strengthening of appropriate institutions in the region. This review, which should be carried out in consultation with the Governments of the region, should take into account the question of establishing specialized regional organisms to undertake particular tasks of the programme, or play a co-ordinating role, taking into account offers already made in the course of this meeting such as those of Malta and Monaco and others yet to be made. Such organisms should only be established if no appropriate regional organism already exists, and should be based on existing national institutions which could be strengthened and given a regional role."
- iv) "Have early consultations with the Governments of the region on the possibility of establishing a regional oil-combating centre to deal with the ever-present and growing threat of a major oil spillage in the Mediterranean, and takes note of the proposal of Malta to host such a centre."

3. The measures taken by the Executive Director of UNEP, in co-operation with interested Governments, the organizations of the United Nations system and other competent international bodies, in order to implement the recommendations concerning the first three aspects referred to above will not be described in detail in the present annex. In effect, these have been, or are, the subject of specific annexes (see UNEP/IG.11/3/Annexes I, II and III) which are being submitted to the Coastal States of the Mediterranean for consideration. Nevertheless, it is necessary to recall the principal measures and arrangements which have already had, or will in the future have, institutional and financial implications.

4. To carry out the mandate given to UNEP at the 1975 Intergovernmental Meeting, the Executive Director designated a small number of staff whose responsibility has been to coordinate the implementation of the Mediterranean programs. Until September 1977, this staff worked under the authority of the Director of the UNEP Geneva Office. Since September, the staff has been working under the authority of the Director of UNEP's Regional Seas Programme Activity Centre, located in Geneva on an interim basis.

5. The activities of the Action Plan have been developed in close co-operation with, and under the general guidance of, the Governments of the region. In addition, a large number of United Nations bodies and specialized international organizations ⁴⁸⁾ have collaborated with UNEP in implementing the programme. In particular, the international organizations have been responsible for maintaining administrative and operational contacts with the national institutions designated by their Governments as participants in the various activities.

6. The staff of UNEP was also responsible for preparing the Barcelona Conference of Plenipotentiaries⁴⁾. This Conference adopted the Barcelona Convention, two Protocols, and ten Resolutions. In addition to designating UNEP as responsible for carrying out the secretariat functions of the Convention (Article 13), Governments represented at the Conference agreed to two resolutions which have institutional implications.

- i) In accordance with Resolution 7, the Executive Director established in Malta, at the invitation of the Government of Malta and in co-operation with IMCO, a Regional Oil Combating Centre. The Centre began operation in December 1976.
- ii) Implementing Resolution 2, an interim office was opened in Madrid, accepting the hospitality of the Government of Spain. The function of this office has been to assist liaison among UNEP, the Government of Spain, as the Depository for the Convention, and the Governments of the Region in matters concerning the ratification of the Convention.

7. Benefiting from the hospitality of the Government of Yugoslavia, an intergovernmental meeting of Mediterranean coastal States was convened in Split from 31 January to 4 February 1977¹³⁾. The meeting examined the financial and institutional implications of the Blue Plan and the Priority Action Programme, and "took note at the Executive Director's intention to discuss with the two Governments which had formally offered to contribute to the objectives of the Integrated Planning chapter adopted at Barcelona I by hosting and supporting such sub-units as he may decide to establish for the purpose of initiating activities relevant to this chapter."

8. Taking into account the offer made by the Government of Monaco at the 1975 Barcelona Intergovernmental Meeting UNEP has explored the possibility of eventually transferring the staff co-ordinating the implementation of the research and monitoring programme (see paragraph 1(ii) and UNEP/IG.11/3/Annex I) to Monaco and has examined with the Government of Monaco the modalities of this transfer.

9. The Executive Director has also taken note of the offers made by the Governments of Spain and Lebanon to host the unit responsible for co-ordinating the further development and implementation of the Action Plan, now located at UNEP's Geneva Office, in Madrid and Beirut, respectively.

10. At this stage, the Executive Director feels that the Mediterranean coastal States should be invited to examine the institutional and financial arrangements that should be adopted for the future. In this respect, he is acting in conformity with the policy directives of the Governing Council of UNEP with regard to UNEP's institutional and financial commitments to the implementation of the Mediterranean Action Plan. These directives are set out in the following decisions of the Governing Council:

10.1 Decision 47 (IV), paragraph 9,

"Considers that the successful achievements of the United Nations Environment Programme in the field of protection of the environment in the Mediterranean region afford a concrete example of both the integrated approach and the proper co-ordinating role that should be the major concern of the Programme in its activities, and requests the Executive Director to ensure that the catalytic function, co-ordination and integration, as opposed to involvement in longer-term activities of a primarily executive character, always constitute the main contribution of the Programme in its endeavours to ensure the protection and improvement of the environment;" ⁴⁹⁾ and

10.2 Decision 50 (IV), paragraph 7,

"Notes the Executive Director's account of how the concepts of environmental assessment and environmental management, as well as supporting activities, have been applied in the Mediterranean, and requests the Executive Director further to develop work in the Mediterranean in accordance with this framework, while taking steps towards the progressive transfer of executive responsibility to the Governments of the region." ⁵⁰⁾

This policy of progressive transfer of executive responsibility to the Governments applies to all parts of the Mediterranean Action Plan.

11. As in the past, the activities agreed upon as part of the Action Plan should be executed by national institutions of the Governments which have been involved in formulating the Action Plan. UNEP, in close collaboration with the relevant parts of the United Nations system and under the guidance of Governments, is prepared to continue the role it has thus far assumed as the Secretariat of the Action Plan and of the Convention, which is an integral part of the Action Plan. Consequently, upon entry into force of the Convention, the Executive Director proposes to make arrangements to discharge the secretariat responsibility on a continuing basis along the following lines, on which he would welcome the advice of the Mediterranean Governments.

12. Since the Executive Director is responsible to the Governments of the Mediterranean States, under the authority of the Governing Council of UNEP, for the development and implementation of the Mediterranean Action Plan, of which the Barcelona Convention and related protocols are an important part and for which they will serve as the legal framework for future activities, it is the responsibility of the Executive Director to assure close coordination of all elements of the Action Plan in a manner responsive to the wishes of the Parties to the Convention.

13. For this purpose, the Executive Director intends to designate those UNEP staff members whose assistance is needed on a continuing basis to oversee all developments of the Action Plan as members of a separate unit which will be under the supervision of the Director of UNEP's Regional Seas Programme Activity Centre.

14. By establishing, on an interim basis, an office in Madrid to serve as liaison among UNEP, the Government of Spain, which is the Depository for the Convention, and the Governments of the Region in matters concerning the ratification of the Convention, the Executive Director manifested his intention to accept the kind offer of the Government of Spain to host the UNEP unit overseeing the development of the Action Plan in Madrid. This arrangement would preserve the consolidated management of the Action Plan in one location; a fact which the Executive Director recognizes as being a key element in the development of a comprehensive plan. Alternatively, the unit might remain in Geneva, housed in UNEP's Geneva office, or might be located in another city of the region.

15. For reasons of administrative and operational efficiency, the Executive Director prefers to keep the staff responsible for all main components of the Action Plan (see paragraph 1), in a single unit, suitably located in one place. However, he recognizes the advisability of decentralizing certain elements of the Action Plan in which immediate national support, or a specific geographic location, is prerequisite; such as the Regional Oil Combating Centre in Malta, and the coordinating offices of the Blue Plan in Cannes and of the Priority Actions Programme in Split. These subunits may be entirely new regional structures, as is the case of the Malta centre, or they may be viewed as national institutions which are strengthened to assume a regional role, such as the seven Regional Activity Centres of the research and monitoring programme (see UNEP/IG.11/3/Annex I).

16. Assuming that the activities under the Action Plan will continue at the present scale, the staff of the central co-ordination unit will remain approximately at its present level and will consist of:

- 1 senior programme officer for environmental assessment
- 1 senior programme officer for environmental management
- 1 senior programme officer for environmental legislation
- 2 programme officers
- 1 administrative officer
- 5 secretaries

Decentralization of the co-ordinating unit would require additional staff.

17. Estimates of the operational costs of the unit, as outlined in the preceding paragraphs, are indicated in Appendix I.

18. The financial assistance of UNEP to the development of the Mediterranean Action Plan rests on the assumption that the Governments of the region will ultimately cover, themselves, the largest part of the operating expenses of the activities agreed upon in the framework of the Action Plan as well as the costs of the coordination mechanism(s). Consequently, the Executive Director is proposing that a separate trust fund should be established by the Governments of the Region to ensure the harmonious development of jointly agreed activities and their effective coordination.

19. Cost sharing within the framework of this trust fund could be accomplished on the basis of several schemes. As one alternative, the Executive Director proposes the following:

- 25 % of the total costs will be covered by Governments participating in the Action Plan, each Government contributing an equal amount;
- not more than 25 % of the total cost will be covered by UNEP, up to a maximum of 10 % of the budget allocated for Oceans by the Governing Council of UNEP;
- the balance of the amount expended will be covered by the Governments participating in the Action Plan, each Government contributing according to the UN assessment scale.

20. The Executive Director is inviting the Governments to agree to the establishment of a trust fund at this meeting for financing the Action Plan in 1979 and onwards. In this connection, he is prepared to convene in 1978 a meeting of Government nominated representatives, to examine budget proposals for the 1979/1980 biennium for the activities which will be agreed upon at the present intergovernmental meeting.

21. Although it is difficult at the time of writing this Annex to envisage the details of the various activities which this meeting may endorse for the 1979/1980 period, a tentative, general budget is presented in Appendix 1 of this document.

ESTIMATED BUDGET (DIRECT COSTS) OF THE
MEDITERRANEAN ACTION PLAN ACTIVITIES,
INCLUDING THE COST OF THEIR CO-ORDINATION
DURING THE 1979/1980 PERIOD

Alternative I*
 (co-ordinating unit in Madrid)

I. Co-ordinating unit:	1979	1980
	(in thousands of US \$)	
. personnel	230	276
. consultants	50	50
. meetings and conference services	280	180
. travel	60	70
. general operational expenses	25	30
. non-expendable supplies	25	5
. reporting costs	40	25
	<hr/>	<hr/>
Subtotal	<u>710</u>	<u>636</u>
II. Oil Combating Centre in Malta (extrapolation based on present budget)	323	355
	<hr/>	<hr/>
Subtotal	<u>323</u>	<u>355</u>
III. Pollution monitoring and research activities:		
. training	150	80
. expendable supplies	35	40
. non-expendable supplies	80	60
. intercalibration and maintenance	50	60
	<hr/>	<hr/>
Subtotal	<u>315</u>	<u>240</u>

* Cost estimates for 1979 and 1980 are based on 1977 prices and salary scales

IV.	Blue Plan (estimate based on agreement of the Intergovernmental Meeting in Split, January 1977)	<u>450</u>	<u>300</u>
	Subtotal	<u>450</u>	<u>300</u>
V.	Priority actions programme and related activities	<u>600</u>	<u>660</u>
	Subtotal	<u>600</u>	<u>660</u>
	GRAND TOTAL	<u>2.398</u>	<u>2.191</u>

Alternative II*
 (co-ordinating unit in Geneva)

I. Co-ordinating unit:	1979	1980
	(in thousands of US \$)	
. personnel	376	395
. consultants	50	50
. meetings and conference services	210	120
. travel	40	50
. general operational expenses	15	20
. non-expendable supplies	5	5
. reporting costs	20	15
. rentals	5	6
	<hr/>	<hr/>
Subtotal	<u>721</u>	<u>661</u>
II-V Identical with that shown in Alternative I.	<u>1.688</u>	<u>1.555</u>
GRAND TOTAL	<u>2.409</u>	<u>2.216</u>

* Cost estimates for 1979 and 1980 are based on 1977 prices and salary scales allowing for expected increases and are quoted in thousands of US dollars.

Notes and References

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