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REPORT ON THE MID-TERM REVIEW MEETING  
ON THE PROGRESS OF THE CO-ORDINATED MEDITERRANEAN  
POLLUTION MONITORING AND RESEARCH PROGRAMME (MED POL)  
AND RELATED PROJECTS OF THE MEDITERRANEAN ACTION PLAN

MONACO, 18 - 22 JULY 1977

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1. Introduction

1.1 As part of the environment assessment component of the Mediterranean Action Plan <sup>1/</sup>, adopted at the Intergovernmental Meeting on the Protection of the Mediterranean Sea (Barcelona, January/February 1975), the following meetings of experts have been convened in connexion with the seven pilot projects of the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) :

- (i) Mid-term Expert Consultation on the Joint FAO(GFCM)/UNEP Co-ordinated Project on Pollution in the Mediterranean (MED II, III, IV and V), Dubrovnik, 2-13 May 1977; <sup>2/</sup>
- (ii) IOC/WMO/UNEP Mid-term Review Meeting for the Pilot Projects MED I and MED VI, Barcelona, 23-27 May 1977; <sup>3/</sup>

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- <sup>1/</sup> Annex of the Report of the Intergovernmental Meeting on the Protection of the Mediterranean. (Barcelona, 28 January - 4 February 1975). UNEP/WG.2/5- also as UNEP/WG.11/Info. 4.
  - <sup>2/</sup> Report of the Mid-term Expert Consultation on the Joint FAO(GFCM)/UNEP Co-ordinated Project on Pollution in the Mediterranean (MED II, III, IV and V), Dubrovnik, 2-13 May 1977. FAO, 1977. UNEP/WG.11/BD.4.
  - <sup>3/</sup> Summary report of the IOC/WMO/UNEP Mid-term Review Meeting for the Pilot Projects MED I and MED VI. (Barcelona, 23-27 May 1977). IOC-WMO-UNEP/MED-MRM/3, UNESCO 1977 - also as UNEP/WG.11/BD. 6.

- (iii) Mid-term Review Meeting for the Joint WHO/UNEP Co-ordinated Pilot Project on Coastal Water Quality Control in the Mediterranean (MED VII), Rome, 30 May - 1 June 1977. <sup>4/</sup>

1.2 On the basis of the information provided at these meetings, as well as information available from other sources, a progress report on the implementation of the environment assessment component of the Mediterranean Action Plan will be prepared for submission to Governments at the Intergovernmental Meeting of Mediterranean Coastal States to be convened by UNEP at Monaco from 9 to 18 January 1978. In addition to the progress report, the Executive Director of UNEP will present to this Meeting a preliminary report on the state of pollution in the Mediterranean. Drafts of both these reports were presented for comment to an over-all Mid-term Review Meeting of experts convened by UNEP at Monaco on 18-22 July 1977, in co-operation with FAO(GFCM), UNESCO, IOC, WHO, WMO and IAEA.

1.3 The meeting of experts had two main tasks :

- (i) to review the progress achieved in the implementation of projects which have been undertaken with a view to the over-all assessment of pollution in the Mediterranean, particularly the progress made in the seven MED POL pilot projects, and in this connexion to advise the Executive Director on a set of recommendations for the future development of the Co-ordinated Mediterranean Pollution Monitoring and Research Programme which he could present to the Intergovernmental Meeting in January 1978 (Monaco); and
- (ii) to advise UNEP, on the basis of the information obtained from the pilot and other projects, on the content of the Executive Director's preliminary report on the state of pollution of the Mediterranean Sea.

## 2. Attendance

2.1 The meeting of experts was attended by 34 Mediterranean scientists invited by UNEP to participate in their personal capacity, by representatives of the United Nations organizations co-operating in convening the meeting (FAO(GFCM)/UNESCO/IOC/WHO/WMO/IAEA) and by observers from international and intergovernmental organizations. For the complete list of participants see Annex 1.

## 3. Opening of the Meeting (agenda item 1)

3.1 The meeting was opened by Mr. P.S. Thacher, who welcomed the participants on behalf of Dr. Mostafa K. Tolba, Executive Director of UNEP. Commander J.-Y. Cousteau, speaking as the Secretary-General of the Intergovernmental Commission for the Scientific Exploration of the Mediterranean (ICSEM), welcomed the participants on behalf of the Principality of Monaco and in particular His Serene Highness Prince Rainier III, referred to the work which had been done by scientists of the Mediterranean region during the past 60 years and expressed his pleasure at participating in UNEP's efforts to protect the Mediterranean.

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<sup>4/</sup> Mid-term Review of the Joint WHO/UNEP Co-ordinated Pilot Project on Coastal Water Quality Control in the Mediterranean (MED VII), (Rome, 30 May - 1 June 1977), WHO, 1977 - also as UNEP/WG.11/BD.8.

3.2 Mr. P. S. Thacher thanked the Government of Monaco for hosting the meeting and briefly reviewed the Mediterranean Action Plan adopted by the Mediterranean Governments in Barcelona in 1975 and the Convention and the two Protocols signed by the Governments in Barcelona in 1976. He emphasized that the data resulting from the scientific work would help the Mediterranean Governments in the implementation of these legal instruments, which were of great significance for safeguarding the Mediterranean. UNEP was expected to report to the Mediterranean Governments on the success of the implementation of the Action Plan and he therefore asked the participants for their advice on the contents of the draft reports which it was planned to submit to the Intergovernmental Meeting to be held in Monaco in early 1978. Such advice should be based largely on the results of the work which had been reviewed at Dubrovnik, Barcelona and Rome in May 1977. He invited the meeting to provide as accurate an evaluation as possible of the present level of pollution of the Mediterranean, of the success and shortcomings of the environment assessment projects undertaken as part of the Mediterranean Action Plan, and of the activities which it was planned to carry out up to the end of 1978.

3.3 As is customary for meetings of experts convened to advise the Executive Director of UNEP, the meeting was chaired by a representative of the Executive Director of UNEP. Dr. S. Keckes, the co-ordinator of the Mediterranean Pollution Monitoring and Research Programme, served in this capacity. He expressed his thanks to the United Nations bodies which had co-operated in organizing the meeting for the substantive help they had provided in drafting and preparing the documents for the meeting. He reminded the meeting that all participants were present in their personal capacity and that the views they expressed were their own and did not represent the views of their Governments.

#### 4. Adoption of the Agenda (agenda item 2)

4.1 Dr. S. Keckes introduced the provisional agenda (UNEP/WG.11/1 (Prov.)), which was adopted without change (Annex II).

#### 5. Review of the Draft Progress Report on the Implementation of the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) and Related Projects of the Mediterranean Action Plan (agenda item 3)

5.1 The Chairman introduced document UNEP/WG.11/3 (Prov.), which he described as the joint administrative report of UNEP and the specialized bodies of the United Nations system participating in the implementation of the environment assessment component of the Mediterranean Action Plan. He reviewed briefly the contents of the document and its annexes and pointed out certain chapters which needed detailed discussion, such as those relating to data handling, the joint Mediterranean cruise and the future development of the programme.

5.2 The following were the main points raised by participants in the meeting during the general discussion which followed the introduction of the document:

- (i) The document with its annexes was considered to reflect the administrative and scientific progress achieved in the implementation of the environment assessment component of the Mediterranean Action Plan, and it was recommended that an updated version, which would also include specific improvements suggested at the meeting, should be presented to the Governments of the Mediterranean States;

- (ii) The meeting noted with much appreciation the critical role and accomplishments of the United Nations system, and UNEP in particular, in conceiving, organizing and co-ordinating the various projects forming part of the Mediterranean environment assessment programme being carried out through the 76 national institutions currently participating in this programme;
- (iii) Concern was expressed regarding the plan to decrease UNEP's role in co-ordinating the implementation of the environment assessment activities in the post-1978 phase. While recognizing the need to increase the role of national institutions participating in these activities, the meeting urged UNEP to continue to ensure their over-all co-ordination and to provide, in close co-operation with the relevant bodies of the United Nations system, the general framework for further work;
- (iv) As one of the over-all objectives of the environment assessment, activities leading to the control of pollution should be emphasized in the future in order to assist the coastal States in taking environmentally sound management decisions;
- (v) It was considered that the pilot phase of the environment assessment, planned to last until the end of 1978, should follow, without substantial changes, the programme endorsed by the 1975 Intergovernmental Meeting in Barcelona.

5.3 Following the general discussion, the specific projects forming part of the Mediterranean environment assessment were briefly reviewed by the representatives of the specialized agencies directly responsible for their implementation. In the ensuing discussion the following specific comments and suggestions were made :

- (i) The meeting expressed satisfaction with the progress achieved in the implementation of the pilot projects;
- (ii) The number of agreements signed with research centres participating in the programme was considered still too low and both the United Nations system and the responsible national authorities were urged to improve the situation;
- (iii) As an essential prerequisite for a comparable assessment of pollution levels and effects in the Mediterranean as a whole, the participating research centres are strongly urged to follow the basic mandatory parts of the pilot projects;
- (iv) Minor changes were suggested in the formulation of the objectives of the projects as they were given in document

UNEP/WG.11/3 (Prov.) so that they reflect more precisely the role these projects play in the programme and the contribution they are expected to make to the other components of the Mediterranean Action Plan;

- (v) It was suggested that, in addition to the basic parts of MED II and MED III, data on levels and biogeocycles of pollutants in other than biological matrices should be collected and analysed;
- (vi) The lack of knowledge on the transport of pollutants in particular at the air/sea interface, through the water column and through the sea-water/sediments interface was stressed;
- (vii) Because of the very nature of the MED IV and MED V pilot projects, their vital importance in the assessment of the effects of pollutants on Mediterranean organisms and ecosystems was clearly recognized;
- (viii) The importance of the pilot project MED VI in the over-all interpretation of data obtained from other projects was also acknowledged;
- (ix) The successful implementation of MED VII was noted, in spite of the fact that no agreements have yet been signed with the participating institutions;
- (x) A more systematic approach to the selection of MED VIII open-water stations was recommended, although it was recognized that it was difficult to achieve this goal with the limited craft at present available to participating institutions;
- (xi) It was noted that MED IX is mainly concentrated on the role of suspended matter brought into the Mediterranean by rivers, and that there is still no adequate programme for assessing the role of marine sedimentation processes in the transport of pollutants;
- (xii) Adequate data on the pollution load carried by rivers is available for only a few rivers, mainly because of insufficient analytical facilities;
- (xiii) It was noted with satisfaction that data on pollution from land-based sources will be available through MED X and it was suggested that these data should be used in assessing the present state of pollution in the Mediterranean, in so far as the sensitive nature of information collected through MED X will permit;
- (xiv) The inclusion of specific potential pollutants (e.g. vinylchloride monomers, dredging spoils) in the checklist used in MED X, as well as information on the currently-used waste treatment technologies, was suggested if a follow-up of MED X is contemplated;

- (xv) Modelling was recognized as an important tool for decision-making in regard to pollution control measures and it was recommended that early steps should be taken to develop the ability of the Mediterranean scientific community to build specific models relevant to marine pollution;
- (xvi) The importance of the selection, establishment and proper management of Mediterranean areas requiring special attention was stressed and their use as reference areas in environmental studies was recommended;
- (xvii) The possibility of co-operation between the Regional Oil Combating Centre in Malta and the other ongoing MED POL projects was noted. It was considered that the initial steps in this direction should be encouraged to develop into effective collaboration;
- (xviii) The merits of a strong intercalibration programme for analytical techniques and methodologies were recognized. The value of and need for the intercalibration exercise was stressed, and it was considered that all research centres performing analytical work on the pre-selected pollutants should participate in it;
- (xix) The assistance provided to the participants in MED POL through the common maintenance services was noted with satisfaction. It was recommended that these services should be extended to cover the training of local staff in basic maintenance techniques;
- (xx) The training programmes for scientists participating in MED POL pilot projects and the assistance provided in the form of instruments to research centres collaborating in the networks of these pilot projects were noted with satisfaction;
- (xxi) Taking into account the desire expressed by most participants in the MED POL projects that the original data should be treated as confidential and the clear need to provide for a centralized data storage, processing and dissemination mechanism (as outlined in document UNEP/WG.11/Info.6), the following specific recommendations were made :
  - (a) a United Nations-operated computer facility should be used for the handling of the data generated by the MED POL projects;
  - (b) only reduced and processed data should be sent to these computer facilities in a suitable format; primary (raw) data should be processed by the participating research centres themselves;
  - (c) participating research centres which lacked computer facilities or expertise in data-handling should be assisted through a technical training programme;

- (d) a committee composed of computer experts and marine scientists familiar with the data requirements of MED POL projects should be established to develop a data management plan setting out the procedures to be followed during the course of the MED POL projects. This committee would serve in an advisory capacity to the computer centre throughout the course of the MED POL projects, and would co-operate actively with the IOC Working Committee for IODE, taking into account IODE recommendations wherever possible;
- (e) an appropriate flow of information should be established between the computer centre and the research centres providing data for it.
- (xxii) The dissemination of specific information on different MED POL pilot projects through the FAO(GFCM) and IOC news-letters was considered very useful and it was recommended that this practice be continued;
- (xxiii) The updating of the Directory of Mediterranean Marine Research Centres and the preparation of a Directory of Mediterranean Protected Areas were approved;
- (xxiv) Noting the past efforts which had led to the preparation of comprehensive bibliographies relevant to the MED POL pilot projects, it was suggested that in future these efforts should be confined to the preparation of an integrated bibliography covering all subjects relevant to MED POL, probably based on the ASFIS system;
- (xxv) UNEP's over-all co-ordinating role in the concerted development of the various components of the Mediterranean Action Plan was noted and appreciation expressed of the effective co-operation established between UNEP and the specialized organizations of the United Nations system in implementing these components;
- (xxvi) Concern was expressed about the plans to decentralize (geographically) the various units co-ordinating specific activities carried out as part of the Mediterranean Action Plan.
- (xxvii) It was noted that the Regional Activity Centres for the seven MED POL pilot projects have been appointed to assist the relevant organizations of the United Nations system only for the duration of the pilot projects;
- (xxviii) It was stressed by the representative of UNEP that the various MED POL projects form part of a wider programme covering several marine regions (Caribbean, Persian/Arabian Gulf, Red Sea, Gulf of Guinea, East Asian Waters and others) which is being implemented in the framework of the UNEP co-ordinated Global Environment Monitoring System (GEMS). They thus constitute an important element in the global environment assessment;



- (xxix) The participants were informed about the possibilities of UNEP's International Referral System (IRS) to provide information on data sources and were invited to co-operate with IRS directly or through their national IRS focal points.

5.4 Plans for future developments were discussed on the basis of the outline given in chapter 21 of document UNEP/WG.11/3 (Prov.). The following specific recommendations were made by the Meeting:

- (i) The pilot phase of the environment assessment component of the Mediterranean Action Plan should be extended until the end of 1978;
- (ii) By the end of 1978 the following should be accomplished :
  - (a) A stronger integration of the various projects implemented as part 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 Action Plan and thus provide the indispensable scientific basis for management or the legal initiatives the Contracting Parties to the Barcelona Convention may wish to take;
  - (b) The Regional Oil Combating Centre should be assisted in preparing contingency plans for emergency situations;
  - (c) Hazard profiles should be prepared for substances of interest to the Convention and in particular to the protocols on dumping and on land-based sources of pollution. Taking into account the existing international arrangements and agreements, proposals should be developed for criteria applicable to the quality of recreational waters and seafood; 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; 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;
  - (d) 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;
  - (e) 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 environmental assessment component of the Mediterranean Action Plan, although data available from other sources should also be used. Document UNEP/WG.11/4 (Prov.) should be considered as the initial step in the preparation of such a report;

- (f) Using the experience and results obtained during the pilot phase of the continuing monitoring and research activities, a pollution monitoring programme should be prepared and elaborated in detail for an initial period of 3-5 years for adoption by the Contracting Parties of the Barcelona Convention. The proposed programme would be based on the established network of collaborating national institutions. It would 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 biogeochemical cycles and on their expected environmental (and socio-economic) impact on the Mediterranean ecoregion. The possible use of remote sensing techniques should be explored.

5.5 In order to achieve these goals the meeting recommended that :

- (i) Additional Mediterranean research centres should be designated to participate in the pollution monitoring and research projects in geographic zones at present inadequately covered;
- (ii) The participation of additional centres involved actively in marine environment research would make a substantial contribution to the programme and should be promoted;
- (iii) 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 strengthened;
- (iv) 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;
- (v) 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, a set of reference methods for Mediterranean marine pollution studies should be prepared;

- (vi) More experience is needed and should be provided by experts in organizing and carrying out joint oceanographic cruises which would increase the number and quality of data on the open waters of the Mediterranean and could be used, on request by the relevant national authorities, to provide additional data for certain coastal waters. A Steering Committee should be established and charged with the task of preparing a detailed programme for such a cruise along the lines suggested in document UNEP/WG.11/Info. 7. This programme, which should be submitted for approval to the Intergovernmental Meeting early next year in Monaco, should be prepared in close consultation and co-operation with as many Mediterranean scientists as possible.
- (vii) The input of riverborne and airborne pollutants into the Mediterranean should be assessed, 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;
- (viii) A central data repository and processing facility, satisfying the requirements of the Mediterranean Action Plan, should be selected and operated on a trial basis. The recommended type of computer facility and the modalities of its operation are included in section 5.3 (xxi) of this report;
- (ix) The build-up of modelling capabilities of the Mediterranean scientists should be promoted. 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;
- (x) Activities related to the development of methods for the assessment and principles for the control of coastal water pollution should be intensified;
- (xi) 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.

6. Review of the Draft Preliminary Report on the State of Pollution of the Mediterranean Sea (agenda item 4)

6.1 Introducing document UNEP/WG.11/4 (Prov.) the Chairman emphasized that it was the first preliminary draft of a report whose final, if somewhat ambitious, aim was to present in an authoritative volume the present state of pollution of the Mediterranean as revealed by the environment assessment activities initiated through the co-ordinated Mediterranean Pollution Monitoring Programme (MED POL) and other related projects of the Mediterranean Action Plan. He added that such a report could not be based only on the latest results

obtained through MED POL, but would also have to take into account any other accessible data obtained through other research and monitoring efforts. In its final form the report was intended to be a fully documented and referenced publication of about 250 pages on the state of pollution in the Mediterranean Sea. It would be issued towards the end of 1978 and the assistance of the Mediterranean scientists would be actively solicited in its preparation.

6.2 In the ensuing discussion the following general and specific points were made :

- (i) The Meeting considered that document UNEP/WG.11/4 (Prov.) represented an initial step in the preparation of a report on the state of pollution in the Mediterranean basin and commended those who had contributed to its preparation;
- (ii) The need for such a document, which should serve both the scientific community and the administrators equally well, was clearly recognized;
- (iii) The general layout of the document gave a clear idea of the subjects which should be covered. However, it was felt that, while the description of sources, pathways, levels and effects should be retained, it would add to the clarity of the exposition if each of the different pollutants were to be described in separate chapters;
- (iv) It was considered that the present chapter 2 should be retained and even expanded to include additional information on marine chemistry (in particular on the speciation of pollutants), on marine sedimentation and its influence on the fate of pollutants, and on Mediterranean ecosystems;
- (v) The inclusion of data relating to the socio-economic development of the Mediterranean was considered necessary;
- (vi) It was recommended that an expanded general summary of the whole report and a summary of each chapter should be prepared in order to facilitate use of the document by readers without an adequate scientific background;
- (vii) It was also suggested that a new chapter on possible remedial actions would make the document of even greater value to those who might be using it for management decisions;
- (viii) It was noted that the data contained in the present draft needed updating and that some could be regarded as obsolete;
- (ix) The hope was expressed that new data generated through the MED POL projects and the MED X project would be fully reflected in the report;

- (x) It was recommended that the report be illustrated with charts, maps, diagrams, tables and figures;
- (xi) The inclusion in the same document of a comparative description of another area, such as the Baltic, was suggested.

6.3 Many more specific comments on the present text of the draft document were put forward and have been noted by the secretariat. These notes, together with other contributions which may be received from the specialized bodies of the United Nations system and from the scientific community will be used in expanding and improving the contents of the review. The new draft of the report, still in the form of a preliminary report, will be submitted to the Intergovernmental Meeting in Monaco early next year.

6.4 All the principal investigators of the MED POL projects have already been invited to comment on the present draft. They will continue to be consulted about the report and will be encouraged to contribute to its contents. It is therefore expected that the report will reflect the collective knowledge of the Mediterranean scientific community.

#### 7. Adoption of the Report on the Meeting (agenda item 5)

7.1 The English and French texts of the report of the Meeting were adopted on 22 July 1977.

#### 8. Closing of the Meeting

8.1 The Meeting was closed at 6 p.m. on 22 July 1977 by the Chairman, who thanked all the participants for the constructive guidance and advice which they had given to UNEP and to the specialized bodies of the United Nations system on the future development of the environment assessment component of the Mediterranean Action Plan.

ANNEX I  
ANNEXE I

LIST OF PARTICIPANTS  
LISTE DES PARTICIPANTS

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SECRETARIAT DE LA REUNION

F.S. CIVILI (Assistant Secretary)  
S. EL-WAKEEL (Secretary)  
S. KECKES (Chairman)

ANNEX II

AGENDA

1. Opening of the Meeting
2. Adoption of the Agenda
3. Review of the Draft Progress Report on the Implementation of the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) and Related Projects of the Mediterranean Action Plan
4. Review of the Draft Preliminary Report on the State of Pollution of the Mediterranean Sea
5. Adoption of the Report on the Meeting
6. Closing of the Meeting