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Long-Term Programme for Pollution Monitoring and Research
in the Mediterranean Sea (MED POL - PHASE II)

PROPOSED MONITORING AND RESEARCH ACTIVITIES DURING 1986 and 1987

AND RELATED BUDGET REQUIREMENTS

In co-operation with:



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
WORLD HEALTH ORGANIZATION
UNITED NATIONS EDUCATIONAL SCIENTIFIC AND CULTURAL ORGANIZATION
INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
WORLD METEOROLOGICAL ORGANIZATION
INTERNATIONAL MARINE RADIOACTIVITY LABORATORY OF THE INTERNATIONAL ATOMIC ENERGY
AGENCY

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BACKGROUND

1. Since the beginning of the Long-Term Programme for Pollution Monitoring and Research in the Mediterranean Sea (MED POL - PHASE II) in 1981, the level of activity has steadily increased, particularly during the course of 1983 and 1984 (see document UNEP/WG.118/3). MED POL - PHASE II has now reached a fully operational status and requires not only a continuous financial support but also a critical evaluation of its relevance to the goals set by the Contracting Parties. Taking into account these goals (UNEP/IG.23/11) and the present status of MED POL (UNEP/WG.118/3) the secretariat, in consultation with the co-operating agencies, prepared this document containing the proposed monitoring and research activities for the 1986/1987 biennium, including their financial implications.

2. The extent and dynamics of the implementation of the proposed activities might depend to a certain degree on the dynamics of the implementation of the Land-Based Sources Protocol and on the recommendations of expert group meetings on the technical implementation of the protocol. As a result, some of the actions from research activities might be postponed or cancelled in order to accommodate activities in connection with the implementation of the Land-Based Sources Protocol.

MONITORING ACTIVITIES

3. The following general and specific activities are proposed to be carried out in the 1986/1987 biennium:

- (a) continued negotiations with the MED POL National Co-ordinators in order to increase the contributions to MED POL - PHASE II through their national monitoring programmes; specific efforts will be made to improve the presently insufficient coverage of the Mediterranean with the monitoring programme and to achieve a more efficient and meaningful regular reporting on the obtained results;
- (b) continued contacts with national research centres designated as participants in the monitoring activities of MED POL - PHASE II in order to facilitate their participation in the programme;
- (c) provision of equipment, training and fellowships to national research centres, at the request of, and in consultation with, MED POL National Co-ordinators in the States with signed National Monitoring Programmes;
- (d) continued support to the participants in MED POL through the common maintenance services, provision of reference methods for marine pollution studies, provision of reference materials and standards, and through involvement in intercalibration in order to assist them to improve the quality of their data;
- (e) strengthening of the computerized MED POL data bank by processing of data reported to the secretariat and preparation of periodic data profiles on contaminants of specific and general interest;

- (f) development and testing of additional reference methods for marine pollution studies and preparation of additional standards and reference materials relevant to parameters to be monitored during MED POL - PHASE II;
- (g) implementation of a pilot project to assess the feasibility of monitoring pollutants transported into the Mediterranean Sea through the atmosphere;
- (h) preparation of inventories of sources and amounts of pollutants from land-based sources;
- (i) assessment of the type and amount of selected substances reaching the Mediterranean through natural processes from land-based or maritime sources;
- (j) organizing smaller ad hoc meetings of scientists/experts from collaborating research centres to discuss specific problems of particular importance for the implementation of the monitoring programme, in particular, a consultation meeting to assess the results of monitoring the pollutants from land-based sources, including the effectiveness of presently used methodology and sampling strategies.
- (k) sponsoring the participating of scientist/experts in meetings organized by other bodies on subjects relevant to monitoring activities of MED POL.

4. Although the MED POL - PHASE II was approved for an initial period of ten years, it is felt that an overall evaluation of the approach used to the monitoring as well as of the results this approach yielded would be appropriate. While such an evaluation is obviously the prerogative of the Contracting Parties, which would be exercised through the Working Group, in view of the secretariat it should also involve the Mediterranean scientists/experts playing an active and decisive role in the implementation of the programme. Therefore it is proposed to convene a meeting of principal investigators of national monitoring programmes (early 1987) to review the monitoring component of MED POL - PHASE II. As the basis for the meeting, the secretariat would prepare a critical evaluation of the results obtained through MED POL - PHASE II, an analysis of the logistic problems encountered in its implementation and concrete proposals for the improvement of the monitoring programme. The results of this review meeting would be presented to the meeting of the Working Group (mid 1987) and submitted, with the views and recommendations of the Working Group, to the Contracting Parties.

RESEARCH ACTIVITIES

5. During the 1986/1987 biennium the selection and funding of research proposals, will follow the procedures endorsed by the Working Group and approved by the Contracting Parties (UNEP/WG.91/12 and UNEP/IG.49/5).

6. The already existing close link between the research and the monitoring components of MED POL will be strengthened in order to make full use of the results of the research activities in the assessments of the state of pollution of the Mediterranean Sea.

7. In order to facilitate the evaluation of the results coming from individual research projects, a more co-ordinated approach in the implementation of the projects will be followed. Scientific workshops and experts meetings will be held on topics which need a common methodology for sampling and analysis and co-ordination of work between research centres.

8. Specific activities proposed for individual research topics are listed in paragraphs 9 - 27.

Activity A (Development and testing of sampling and analytical techniques for monitoring of marine pollutants)

9. The development of new reference methods and the revision of the existing ones will closely follow the needs of the monitoring component of MED POL. Research projects will be limited to those considered necessary for achieving this goal.

10. Intercalibration exercises will be made mandatory for participants in the monitoring programme in order to ensure the comparability of the results and the quality of data.

11. A few research proposals will be solicited to develop and test reference methods relevant to the analysis of levels and effects of chemical contaminants in marine organisms.

12. The Joint IOC/UNEP Group of Experts on Methods, Standards and Intercalibration (GEMSI) will continue to assist in the development and in reviewing the new reference methods.

13. Two meetings of experts and two intercalibration exercises are planned to be convened in connection with Activity 'A':

- review of new reference methods for the determination of chemical contaminants (end of 1986);
- consultation meeting on reference methods dealing with metals and organic contaminants in particulate matter (1987);
- intercalibration exercise for reference methods dealing with petroleum hydrocarbons (early 1986);
- intercalibration exercise on microbiological reference methods (1986).

Activity B (Development of reporting formats required according to the Dumping, Emergency and Land-Based Sources Protocols),

Activity C (Formulation of the scientific rationale for Mediterranean Environmental Quality Criteria), and,

Activity E (Guidelines and criteria for the application of the Land-Based Sources Protocol)

14. These activities are directly related to the implementation of the LBS protocol, and their orientation will be based on the recommendations of the expert group meeting on the technical implementation of the protocol.

Activity D (Epidemiological studies related to Environmental Quality Criteria)

15. It is intended to convert the present loose network of Mediterranean institutions working on the correlation between coastal water quality (recreational and shellfish-growing waters) and health effects into a more coherent one, with maximum complementarity between institutions, all of which will be working according to the same guidelines and towards one common objective. Liaison will also be ensured to the fullest extent possible with similar programmes outside the region to avoid duplication and minimize overlap. It is proposed to convene a consultation meeting in 1987 with the main objectives of (a) assessing and harmonizing the results of individual institutions, (b) reviewing the impact of such results on the requirements of the monitoring programme, and (c) discussing the scientific rationale required to evaluate the effect of the applications of environmental quality criteria for the relevant parameters.

16. By the beginning of 1986, the project on evaluation of methylmercury in Mediterranean populations and related health hazards is expected to be fully operational in at least four Mediterranean countries (Egypt, Greece, Italy and Yugoslavia). During 1986 and 1987, this project will continue its course, together with supporting studies, with possible expansion to other areas which might present mercury anomalies. In at least one country, the second phase of the project (the clinical epidemiological phase) is expected to commence in 1986. It is proposed to hold a consultation meeting during the second half of 1986 with the aims of (a) assessing results obtained to date, and (b) providing an interim report to the Contracting Parties, on the basis of which appropriate control and health protection measures could be carried out.

Activity F (Research on oceanographic processes)

17. It is proposed to continue and complete the review on oceanographic processes affecting pollutant distribution in the Mediterranean, and to prepare a consolidated bibliography on research in this field.

Activity G (Research on the toxicity, persistence, bioaccumulation, carcinogenicity and mutagenicity)

18. The ongoing research projects on the carcinogenicity and mutagenicity of pollutants will be more intimately linked with the WHO/UNEP/ILO and WHO/EURO programmes on chemical safety and other activities being carried out at the WHO International Agency for Research on Cancer (IARC) to ensure that no duplication or overlap take place. The conclusions and recommendations of the Rovinj meeting on toxicity and bioaccumulation (5-9 November 1984) will be taken into consideration when approving new research proposals.

19. Two reference methods will be developed relevant to this field. The first one concerns acute toxicity testing and the second one testing sub-lethal effects of toxic substances on marine organisms (see also paragraph 11).

Activity H (Eutrophication and concomittant plankton blooms)

20. Based on UNESCO's guidelines for the assessment of receiving capacity of waters for eutrophating substances, a meeting will be convened to agree on appropriate methods for eutrophication assessment and identify markedly eutrophied areas. A pilot project proposed to start in 1987, should include comparative studies in eutrophication of several coastal areas and will serve as a basis for a long-term eutrophication monitoring programme.

21. Depending on the analysis of the results obtained through the jellyfish programme, the programme may be extended for the 1986-1987 biennium.

Activity I (Pollution-induced ecosystems modifications)

22. The conclusions and recommendations of the meeting planned to be convened in autumn 1985 to review the progress of the ongoing projects and to suggest common methodology for the interpretation of results will be taken into account for the further development of this activity.

Activity J (Effects of thermal discharges on coastal organisms and ecosystems)

23. The two ongoing projects approved as case studies are expected to be completed in 1986. Taking into account the results of these studies and the GESAMP Report No. 24, a decision will be taken on the future of this activity.

Activity K (Biogeochemical cycles of specific pollutants)

24. Future research will be directed to fill the gaps identified by the Siena meeting (27-31 August 1984) on the biogeochemical cycle of mercury. Projects relevant to these gaps will be solicited.

25. A small expert consultation is planned to be convened to review the results of ongoing projects on biogeochemical cycles of lead in order to evaluate the present state of knowledge and to determine further research needs.

26. Studies will be continued on the survival of selected pathogens, particularly, those identified in Annex II of the Land-Based Sources protocol.

Activity L (Pollutant-transfer processes)

27. In addition to the continuation of ongoing research projects, a review on pollutant transfer through the straits is proposed as well as the development of a pilot project to determine such exchanges as a basis for overall mass balance assessment of selected pollutants. A pilot project for sampling of surface microlayer for petroleum and other pollutants will be initiated.

28. A pilot project on studying air pollutant depositions into the Mediterranean region and pollutant concentrations in air should be initiated in 1986 in as many countries as possible on the basis of programme proposals agreed upon by experts nominated by national co-ordinators. The WMO Background Air Pollution Monitoring Network (BAPMON) stations could be used for sampling. Provision of appropriate sampling equipment should be envisaged, if necessary. A workshop should be held in 1987 to review the preliminary results of these activities.

29. A small expert meeting is planned to be convened in 1987 to review the results of ongoing research projects on work of transport of pollutants by sedimentation and to determine further research needs.

BUDGETARY REQUIREMENTS FOR THE BIENNIUM 1986-1987

30. The activities envisaged in the preceding sections are to be covered with financial allocations which should be approved by the forthcoming Fourth Meeting of the Contracting Parties to be held in September 1985.

31. The Working Group is requested to examine and endorse, as appropriate, the budget presented in annexes I and II.

Annex I

Proposed allocations for MED POL monitoring activities during 1986-1987

(Presented in US dollars and in format requested by the Contracting Parties in UNEP/IG.43/6, Annex VII)

	1986	1987
1. PERSONNEL <u>A/</u>		
<u>Experts/Consultants</u>		
- FAO Fishery Expert, P-5	12mm 65,000	12mm 67,000
- WHO Senior Scientist, P-5	12mm 78,000	12mm 80,000
- IAEA Maintenance Engineer, P-3	12mm 60,000	12mm 62,000
<u>Administrative Support</u>		
- FAO Secretary, Athens, Local G-4	12mm 12,000	12mm 14,000
- WHO Secretary, Athens, Local G-4	12mm 14,000	12mm 15,000
- WHO Secretary, Copenhag., Loc.G-4	6mm 8,000	6mm 9,000
- IAEA Lab. Assist., Monaco, Local G-5	12mm 25,000	12mm 27,000
Component Total	262,000	274,000
2. TRAVEL <u>B/</u>		
- WHO	10,000	10,000
- FAO	10,000	10,000
- IOC/UNESCO	5,000	5,000
- WMO	5,000	5,000
- IAEA	20,000	20,000
Component Total	50,000	50,000

A/ Cost of UNEP staff involved in MED POL covered through Chapter I (Co-ordination) of MAP budget.

B/ Cost of travel of UNEP staff related to MED POL covered through Chapter I (Co-ordination) of MAP budget.

	1986	1987
3. SUBCONTRACTS		
- Intercalibration of petroleum hydrocarbon analytical methods (through IOC)	12,000	-
- Intercalibration of microbiological reference methods (through WHO)	12,000	-
- Printing of VIII ICSEM/IOC/UNEP proceedings (ICSEM through the secretariat)	-	25,000
- Assistance through agreements	316,600	431,000
Component Total	340,600	456,000
4. MEETINGS/TRAINING/WORKSHOPS/FELLOWSHIPS		
<u>Meetings:</u>		
- Working Group for Scientific and Technical Co-operation	45,000	50,000
<u>Training:</u>		
- On-job training (through the secretariat)	80,000	80,000
<u>Fellowships:</u>		
- Fellowships for attendance at meetings:		
- VIII ICSEM/IOC/UNEP Workshops	45,000	-
- Consultation meeting to assess results of monitoring activities	-	40,000
- Consultation meeting on LBS monitoring (WHO)	-	15,000
- Other meetings	30,000	30,000
Component Total	200,000	215,000

	1986	1987
5. EQUIPMENT <u>C/</u> <u>Expendable</u> - Spare parts for common maintenance service (through IAEA)	25,000	30,000
<u>Non-expendable</u> - Laboratory equipment (to ILMR)	18,000	20,000
Component Total	43,000	50,000
6. RENTAL AND MAINTENANCE OF PREMISES ^{D/}	-	-
Component Total	-	-
7. OPERATION AND MAINTENANCE OF EQUIPMENT <u>E/</u> - IAEA	1,800	2,000
Component Total	1,800	2,000
8. REPORTING COSTS <u>F/</u> - IAEA	1,300	1,500
Component Total	1,300	1,500
9. SUNDRY <u>G/</u> - IAEA	1,300	1,500
Component Total	1,300	1,500
GRAND TOTAL	900,000	1,050,000

C/ Equipment committed through Agreements included in Section 3 (Sub-contracts).

D/ No direct costs to MED POL.

E/ This item covers only the cost of operation and maintenance of equipment used by ILMR for common maintenance service

F/ Costs of translation and printing of UNEP documents related to MED POL covered through Chapter I (Co-ordination) of MAP budget.

G/ Cost of sundry items related to MED POL incurred by UNEP covered through Chapter I (Co-ordination) of MAP budget.

Annex II

Proposed allocations for MED POL research activities during 1986-1987

(Presented in US dollars and in format requested by the Contracting Parties in UNEP/IG.43/6, Annex VII)

	1986	1987
SUBCONTRACTS		
Activity A	35,000	36,000
B	16,000	18,000
C	16,000	18,000
D	25,000	36,000
E	16,000	18,000
F	20,000	26,000
G	20,000	26,000
H	25,000	26,000
I	12,000	20,000
J	15,000	16,000
K	25,000	30,000
L	25,000	30,000
Sub-total	250,000	300,000
MEETINGS		
Activity A	12,500	12,500
D	12,500	12,500
H	12,500	-
K	12,500	-
L (two meetings)	-	25,000
Sub-total	50,000	50,000
GRAND TOTAL	300,000	350,000