



United Nations
Environment
Programme



Distr.
RESTRICTED

UNEP/WG.46/3 PART II
30 September 1980

Original: ENGLISH

Meeting of Experts to Evaluate the
Pilot Phase of MED POL and to Develop
a Long-Term Monitoring and Research
Programme for the Mediterranean
Action Plan

Geneva, 12 - 16 January 1981

CO-ORDINATED MEDITERRANEAN POLLUTION MONITORING AND
RESEARCH PROGRAMME (MED POL)
PART II : ADMINISTRATIVE REPORT
FEBRUARY 1975 - JUNE 1980



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS



WORLD HEALTH ORGANIZATION



WORLD METEOROLOGICAL ORGANIZATION



INTERNATIONAL ATOMIC ENERGY AGENCY



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

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I INTRODUCTION

The United Nations Environment Programme (UNEP) was established by the United Nations General Assembly "to serve as a focal point for environmental action and co-ordination within the United Nations system"^{1/}.

While it was recognized that environmental deterioration was far advanced in many areas of the globe, the Mediterranean region was selected by UNEP as a "concentration area" where UNEP would attempt to fulfil its catalytic role in assisting the coastal States in an ambitious and consistent manner.

After extensive preparatory activities involving a number of United Nations bodies, UNEP convened an Intergovernmental Meeting on the Protection of the Mediterranean (Barcelona, 28 January - 4 February 1975), which was attended by representatives of 16 States bordering on the Mediterranean Sea and the European Economic Community (EEC). The meeting discussed the various measures necessary for the prevention and control of pollution^{2/} of the Mediterranean Sea, and concluded by adopting an Action Plan^{2/} consisting of three substantive components:

- legal (framework convention and related protocols);
- scientific (research and monitoring);
- integrated planning.

All components of the Action Plan are interdependent and provide a framework for comprehensive action to promote both the protection and the continued development of the Mediterranean ecoregion. No component is an end in itself. The Action Plan is intended to assist the Mediterranean Governments in formulating their national policies related to the continuous development and protection of the Mediterranean area and to improve their ability to identify various options for alternative patterns of development and to make choices and appropriate allocations of resources.

The Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL), which constitutes the environmental assessment (scientific) component of the Mediterranean Action Plan, had, in its pilot phase (MED POL - PHASE I), the following overall objectives, as evolved through a series of expert and intergovernmental meetings:

- to formulate and carry out a co-ordinated pollution monitoring and research programme taking into account the goals of the Mediterranean Action Plan and the capabilities of the Mediterranean research centres to participate in it;

- to assist national research centres in developing their capabilities to participate in the programme;
- to analyse the sources, amounts, levels, pathways, trends and effects of pollutants relevant to the Mediterranean Sea;
- to provide the scientific/technical information needed by the Governments of the Mediterranean States and the EEC for the negotiation and implementation of the Convention for the Protection of the Mediterranean Sea against Pollution and its related protocols.

The pilot phase of MED POL (MED POL - PHASE I) was designed as the precursor of a long-term programme for pollution monitoring and research in the Mediterranean (MED POL - PHASE II) to be carried out according to the relevant provisions of the legal component of the Mediterranean Action Plan.

The present document is an administrative report on the preparatory activities related to MED POL and on the implementation of MED POL and MED POL-related activities covering MED POL - PHASE I in the period February 1975 - June 1980. It was prepared, primarily, with the co-operation of General Fisheries Council for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO) (sections on MED POL II, III, IV and IV), the World Health Organization (WHO) (section on MED POL VII), the International Atomic Energy Agency (IAEA) (sections on MED POL VIII and XI) and the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (sections on MED POL I and VI). A detailed description of the MED POL - PHASE I programme and of the scientific results obtained in that period are contained in documents UNEP/WG.46/3 (PART I), UNEP/WG.46/INF.5 and UNEP/WG.46/INF.6.

II BACKGROUND

The UNEP-sponsored International Workshop on Marine Pollution in the Mediterranean, convened in Monaco (9 - 14 September 1974) by IOC, FAO(GFCM) and the International Commission for the Scientific Exploration of the Mediterranean (ICSEM) reviewed the state of pollution of the Mediterranean Sea, the pollution monitoring and research programmes in the region, and recommended a number of activities which might improve the quality of information on the sources, levels and effects of pollution in the Mediterranean area^{3/}.

Based on the recommendations of the Monaco Workshop and on a subsequent study of the capabilities of existing national research institutions conducted by IOC on behalf of UNEP^{4/}, the 1975 Intergovernmental Meeting in Barcelona^{2/} approved a Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) consisting of seven pilot projects and requested UNEP to implement it in close collaboration with the relevant specialized United Nations bodies.

The following pilot projects were approved at the 1975 Barcelona Meeting as parts of MED POL - PHASE I:

- MED POL I : Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters;
- MED POL II : Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms;
- MED POL III : Baseline Studies and Monitoring of DDT, PCBs and Other Chlorinated Hydrocarbons in Marine Organisms;
- MED POL IV : Research on the Effects of Pollutants on Marine Organisms and their Populations;
- MED POL V : Research on the Effects of Pollutants on Marine Communities and Ecosystems;
- MED POL VI : Problems of Coastal Transport of Pollutants;
- MED POL VII : Coastal Water Quality Control.

Since the 1975 Barcelona Meeting, several other projects have been added or considered as collaterals to MED POL, either to broaden the scope of the original seven MED POL pilot projects or to provide the necessary support for them. They are :

- MED POL VIII : Biogeochemical Studies of Selected Pollutants in the Open Waters of the Mediterranean;

- MED POL IX : Role of Sedimentation in the Pollution of the Mediterranean Sea;
- MED POL X : Pollutants from Land-Based Sources in the Mediterranean;
- MED POL XI : Intercalibration of Analytical Techniques and Common Maintenance Services;
- MED POL XII : Input of Pollutants into the Mediterranean Sea through the Atmosphere;
- MED POL XIII : Modelling of Marine Systems.

The overall guidance and co-ordination of MED POL - PHASE I is carried out, according to the relevant decisions of the regular meetings of the States participating in the Mediterranean Action Plan and the meetings of UNEP's Governing Council, by UNEP's Regional Seas Programme Activity Centre (RS/PAC) as the Mediterranean component of UNEP's Regional Seas Programme.

Participants in the pilot projects are national research centres designated by the UNEP focal points in the States participating in the Mediterranean Action Plan.

Each of the pilot projects is based on an "operational document" formulated at meetings of experts from Mediterranean research centres identified by their Governments as participants in the pilot project. These documents specify all the substantive and methodological details needed for carrying out the pilot projects.

For the day-to-day co-ordination of the work of national research centres participating in the pilot projects, a specialized body of the United Nations system was selected. In certain pilot projects this co-ordination is carried out in co-operation with additional United Nations bodies and with the assistance of national institutions designated, in consultation with the States participating in the Mediterranean Action Plan, as Regional Activity Centres (RAC) for that pilot project.

The participation of the national research centres in the pilot projects is formalized through "research agreements" signed between the centres and the relevant specialized United Nations bodies responsible for the day-to-day co-ordination of the work.

Financial support to individual pilot projects is provided through "project documents" signed between UNEP and the United Nations bodies responsible for the day-to-day co-ordination of the work on individual pilot projects. In order to cover the costs of the overall co-ordination of MED POL and some of the common costs relevant to all pilot projects, an "internal project" (FP/0503-75-01) was established and administered directly by UNEP. Funds used to support MED POL are those from UNEP's regular budget and from the Mediterranean Trust Fund.

The funds provided through the project documents were used to support the research centres participating in the pilot projects:

- directly (fellowships for training; provision of equipment, spare parts and expendable materials; consultants and maintenance engineers visiting research centres at their request; financing of national experts' attendance at meetings; etc.);
- indirectly (organization of meetings; preparation of manuals, guidelines and reports; consultants used to analyse the results of the project and to co-ordinate its execution; etc.).

Indirect assistance was provided to participants in the pilot projects by the specialized United Nations bodies participating in MED POL through their staff time, expertise and services.

The national contributions to MED POL, provided through the professionals and supporting staff of the research centres participating in the pilot projects, through the operating cost of their equipment and the cost of expendable material used in the work, constitute a considerable part of the overall expenditures of MED POL.

III PREPARATORY ACTIVITIES

As preparatory activities for the adoption of the Mediterranean Action Plan, and MED POL as its scientific component, the following two projects have been carried out.

International Workshop on Marine Pollution in the Mediterranean

With the co-operation of IOC, FAO(GFCM) and ICSEM, the Workshop was organized in Monaco (9 - 14 September 1974). It was attended by 27 experts, 19 of them from 11 Mediterranean States.

The Workshop^{2/}:

- reviewed the main problems of marine pollution in the Mediterranean and the state of Mediterranean pollution studies and monitoring;
- identified high priority studies and the needs for co-ordinated activities;
- outlined several pilot projects and recommended their initiation.

The Workshop was co-sponsored by UNEP through the project FP/0501-73-03. The costs of the Workshop (in US dollars) were shared by co-sponsors as follows:

	1974	1975	1976	Total	Percentage
IOC	4,000	-	-	4,000	11.1
FAO(GFCM)	1,000	-	-	1,000	2.8
ICSEM	6,000	-	-	6,000	16.6
UNEP	-	25,040	69	25,109	69.5
TOTAL	11,000	25,040	69	36,109	100.0

These costs included:

- US \$ 13,800 for the organization of the meeting;
- US \$ 17,400 for attendance of experts;

- US \$ 3,000 for reporting costs;
- US \$ 1,909 for miscellaneous expenses.

The project successfully accomplished its goal in that it resulted in the first outline of projects which later became parts of MED POL.

Evaluation of Institutional Programmes

Through IOC a study was sponsored by UNEP to evaluate the institutional capabilities of the Mediterranean research centres, their programmes relevant to marine pollution monitoring and research, and their readiness to participate in MED POL-related activities.

The study was supported through project FP/0501-74-07. The costs of the study (in US dollars) were shared by the two co-sponsors as follows:

	1974	1975	1976	Total	Percentage
IOC	1,500	-	-	1,500	10.2
UNEP	-	12,838	337	13,175	89.8
TOTAL	1,500	12,838	337	14,675	100.0

These costs included:

- US \$ 1,500 for consultants;
- US \$ 9,575 for travel;
- US \$ 2,000 for reporting costs;
- US \$ 1,600 for miscellaneous expenses.

The project resulted in a comprehensive survey of the institutional infrastructure which could underly MED POL-related activities^{4/} and was later used as the basis for the Directory of Mediterranean Marine Research Centres^{5/}.

IV PROGRESS IN IMPLEMENTATION OF MED POL - PHASE I

This section of the document deals with the individual projects which became, or were contemplated to become, part of MED POL - PHASE I.

MED POL I : BASELINE STUDIES AND MONITORING OF OIL AND PETROLEUM HYDROCARBONS IN MARINE WATERS (IOC/WMO/UNEP)

The actual work of the national research centres on the pilot project started in November 1975.

1. Participants

Twenty-eight research centres from fourteen Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, 16 research agreements had been signed.

2. Operational document

The operational document of the pilot project was formulated at the IOC/WMO/UNEP Expert Consultation (Msida, 8 - 13 September 1975) attended by 36 participants from 12 Mediterranean States^{6/}. Certain provisions of the operational documents were modified at the IOC/WMO/UNEP Mid-term Review Meeting for MED POL I and MED POL VI (Barcelona, 23 - 27 May 1977) attended by 15 experts from 15 research centres participating in MED POL I^{7/}.

3. Co-ordinating arrangements

IOC, in co-operation with WMO, maintains the operational contacts with research centres participating in the pilot project.

The Department of Chemistry, University of Malta, Msida, Malta, was nominated in August 1976 to assist IOC as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0503-75-06 and FP/0503-76-03. Costs (in US dollars) were shared between the three co-sponsors of these projects as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
IOC	6,400	22,300	16,450	22,750	17,000	7,100	92,000	27.4
WMO	4,000	3,500	3,600	2,800	4,200	1,500	19,600	5.9
UNEP	8,808	14,036	91,487	34,403	73,728	1,400	223,862	66.7
TOTAL	19,208	39,836	111,537	59,953	94,928	10,000	335,462	100.0

*Estimate for the period 1 January - 30 June 1980

No detailed breakdown, showing the amounts spent for direct support of participants in MED POL I and for the indirect costs of the project, was made available by IOC.

5. National contributions

No estimate on the national financial contributions, through the participation of research centres in MED POL I was made available by IOC.

6. Documentation

Documents specifically developed for this pilot project include:

- Guidelines for the Implementation of Pilot Projects MED I and MED VI. Supplements 1 and 3 to IOC-WMO-UNEP/MED-MRM/3. UNESCO 1977;
- Manual for Monitoring Oil and Petroleum Hydrocarbons in Marine Waters and on Beaches. Supplement to manuals and guides No. 7. UNESCO 1977.

7. Meetings

Specific meetings held in connection with this pilot project:

- IOC/WMO/UNEP Mid-term Review Meeting (Barcelona, 23 - 27 May 1977) which also covered MED POL VI, was attended by 32 participants from 24 research centres in 12 States^{7/}.

8. Progress achieved

The formalization of the research agreements between IOC and the research centres was too slow, which hampered the early start of the work by all centres designated as participants in the pilot project.

The periodic reporting to IOC by the research centres was not satisfactory; less than 50 per cent of the centres respected the deadlines and even those who submitted their reports did not always follow the reporting format agreed upon.

Only three out of eight trainees submitted reports on the results of the training, which did not allow for a thorough evaluation of either the effectiveness of the training or the adequacy of administrative arrangements related to training.

No evaluation of the assistance provided by the Regional Activity Centre was made available by IOC.

MED POL II : BASELINE STUDIES AND MONITORING OF METALS, PARTICULARLY MERCURY AND CADMIUM, IN MARINE ORGANISMS (FAO(GFCM)/UNEP)

The actual work of the national research centres on the pilot project started in late autumn of 1975.

1. Participants

Thirty-six research centres from fifteen Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, 32 research agreements had been signed and one was cleared and ready for signature.

2. Operational document

The operational document of the pilot project was formulated at the FAO(GFCM)/UNEP Expert Consultation (Rome, 23 - 27 June 1975) attended by 35 participants from 13 Mediterranean States^{8/}. Certain modifications of the operational document were agreed upon at the FAO(GFCM)/UNEP Mid-term Expert Consultation for MED POL II and MED POL III (Dubrovnik, 2 - 6 May 1977) attended by 32 experts from 28 research centres participating in MED POL II^{9/}.

3. Co-ordinating arrangements

FAO(GFCM) maintains the operational contacts with the national research centres participating in the pilot project.

The Centre for Marine Research, "Rudjer Boskovic" Institute, Rovinj/Zagreb, Yugoslavia, was nominated in August 1976 to assist FAO(GFCM) as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0502-75-01 and FP/0503-75-07 (both projects covering activities relevant to MED POL II, III, IV and V). Costs relevant to MED POL II (in US dollars) were shared between the two co-sponsors of these projects as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
FAO(GFCM)	6,000	16,200	17,300	17,800	16,700	9,753	83,753	11.3
UNEP	8,422	131,640	175,050	130,450	146,720	68,419	660,701	88.7
TOTAL	14,422	147,840	192,350	148,250	163,420	78,172	744,454	100.0

*Estimate for the period 1 January - 30 June 1980

Direct support to participants in MED POL II up to 30 June 1980 amounted to US \$ 481,921 including:

- US \$ 312,082 for equipment, including 12 atomic absorption spectrophotometers;
- US \$ 93,999 for expendable materials;
- US \$ 34,922 for training of twenty trainees (total of 21 man/months) from twelve research centres in eight host institutions;
- US \$ 13,747 for attendance at meetings;
- US \$ 17,171 for consultants to participating research centres;
- US \$ 10,000 as assistance to the Regional Activity Centre.

Indirect support to participants in MED POL II up to 30 June 1980 amounted to US \$ 178,780. This sum included:

- US \$ 92,384 for the services of consultants to assist FAO(GFCM) in the organization and execution of the pilot project, and in the evaluation of its results;
- US \$ 15,395 for the organization of meetings;
- US \$ 68,901 for the preparation of manuals, guidelines and reports;
- US \$ 2,100 for miscellaneous expenses.

5. National contributions

The national contributions to the pilot project, estimated on the basis of incomplete information supplied by 25 participating research centres as equivalent to US \$ 1,100,400, included:

- 790 man/months of professional and supporting staff (US \$ 474,000 estimated at US \$ 600 per man/month);

- US \$ 277,850 as expendable materials;
- US \$ 348,550 as operating costs of equipment.

6. Documentation

Documents specifically developed for this pilot project include:

- Manual of Methods in Aquatic Environment Research. Part 3: Sampling and Analysis of Biological Material. FAO Fisheries Technical Paper No. 158. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 2: Guidelines for the Use of Biological Accumulators in Marine Pollution Monitoring. FAO Fisheries Technical Paper No. 150. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 5: Statistical Tests. FAO Fisheries Technical Paper No. 182. FAO 1979.

7. Meetings

Specific meetings held in connection with this pilot project:

- FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 2 - 6 May 1977), which also covered MED POL III, was attended by 44 participants from 32 research centres in 14 Mediterranean States^{9/}.

8. Progress achieved

Research agreements have been successfully negotiated with most of the research centres, and signed by 89 per cent of those designated as participants in the pilot project.

The periodic reporting to FAO by the research centres was generally inadequate in that most of the centres did not respect the deadlines and those who submitted their reports frequently did not follow the format agreed upon.

Information relevant to the effectiveness of the administrative and financial arrangements made by FAO in connection with the pilot project was received from 25 research centres (78 per cent of those with signed research agreements) and therefore only a partial evaluation of these arrangements is possible. According to the replies received, the pilot project was of great value to research centres in that it:

- increased the contacts between scientists working on similar problems and thus contributed to an exchange of results and a better understanding between scientists of the region;
- initiated or strengthened seasonal monitoring of heavy metals during longer span of time and provided the opportunity for the comparison of pollution levels between the different regions;

- stimulated research, particularly in younger scientists who gained confidence and accuracy in techniques of heavy metals analysis;
- introduced new analytical methods and improved the research and monitoring capability of the centres;
- stimulated the establishment of concrete national and/or institutional research and monitoring programmes and incorporated the existing ones in a regional network;
- provided the essential equipment and material needed for the work;
- trained national experts in analytical techniques enabling them to analyse heavy metals for the first time.

Practically all research centres indicated their continued interest in participating in follow-up activities. In several cases the continued participation of the research centres was conditional, and in most cases conditional on additional financial support from national and international sources.

Out of twenty trainees, only 2 failed to submit technical reports and fifteen of them submitted evaluation reports on the results of their training. The following is the analysis of their reports.

In most cases the training followed the programme agreed upon before the start of the training. In some cases, however, the training programme had to be modified on arrival of the trainee at the host institution either because the period during which training was performed did not coincide with the work programme of the host institution, or because the specific requirements of the trainee had not been realised clearly enough before the start of the training.

The training was particularly successful for scientists and technicians familiar with the basics of the atomic absorption spectrophotometry prior to training. Their training lasted for short periods (two weeks on an average) with the aim of improving their practice and/or experience from the analytical viewpoint. In the case of scientists trained for longer periods to learn new techniques, the outcome of the training, although generally successful, could have been better had the established training programme been more respected and had the training period been longer.

Trainees, in general, expressed their satisfaction with the arrangements made by FAO(GFCM) and with the programme followed by them in the host institution. Some trainees expressed the view that, prior to the training, closer contacts should have been established between the trainees and their supervisors.

There is no doubt that the training undertaken in the framework of MED POL II has considerably improved the capability of research centres to analyse heavy metals. The difficulties experienced in organizing the training were

mostly due to the time constraint under which it had to be organized and, in many cases, the prospective trainees did not (or could not) provide FAO(GFCM) and the host institution with sufficient previous information about the kind of training they wanted to have.

The assistance provided by the Regional Activity Centre to the efficient operation of the pilot project consisted of:

- hosting the FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 2 - 13 May 1977);
- collaboration with FAO(GFCM) in the analysis and evaluation of the interim and final reports of the MED POL II principal investigators.

A newsletter (three issues) bringing news relevant to MED POL II was issued by the RAC.

In view of the expertise available at the research centre selected as the RAC for this pilot project, its performance is evaluated as inadequate and of marginal importance to the pilot project.

MED POL III : BASELINE STUDIES AND MONITORING OF DDT, PCBs AND OTHER CHLORINATED HYDROCARBONS IN MARINE ORGANISMS (FAO(GFCM)/UNEP)

The actual work of the national research centres on the pilot project started in late autumn of 1975.

1. Participants

Thirty-one research centres from fifteen Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, 24 research agreements had been signed and one was cleared and ready for signature.

2. Operational document

The operational document of the pilot project was formulated at a joint FAO(GFCM)/UNEP Expert Consultation (Rome, ⁸23 - 27 June 1975) attended by 35 participants from 13 Mediterranean States⁸. Certain modifications of the operational document were agreed upon at the Mid-term Expert Consultation for MED II and MED III (Dubrovnik, 2 - 6 May 1977) which was attended by 20 experts from 16 research centres participating in MED POL III ⁹.

3. Co-ordinating arrangements

FAO(GFCM) maintains the operational contacts with the national research centres participating in the pilot project.

The Marine Science Department of the Middle East Technical University, Erdemli-Icel, Turkey, was nominated in August 1976 to assist FAO(GFCM) as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0502-75-01 and FP/0503-75-07 (both projects covering activities relevant to MED POL II, III, IV and V). Costs relevant to MED POL III (expressed in US dollars) were shared between the two co-sponsors of these projects as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
FAO(GFCM)	6,000	12,310	12,694	12,900	12,600	6,313	62,817	14.6
UNEP	8,422	57,870	106,200	68,850	86,192	39,584	367,118	85.4
TOTAL	14,422	70,180	118,894	81,750	98,792	45,897	429,935	100.0

*Estimate for the period 1 January - 30 June 1980

Direct support to participants in MED POL III up to 30 June 1980 amounted to US \$ 234,607 including:

- US \$ 151,907 for equipment, including 10 gas chromatographs;
- US \$ 24,258 for expendable materials;
- US \$ 30,618 for training of 18 trainees (total of 14 man/months) from thirteen research centres in eight host institutions;
- US \$ 7,031 for attendance at meetings;
- US \$ 10,793 for consultants to participating research centres;
- US \$ 10,000 as assistance to the Regional Activity Centre.

Indirect support to participants in MED POL III up to 30 June 1980 amounted to US \$ 132,511. This sum included:

- US \$ 69,288 for the services of consultants to assist FAO(GFCM) in the organization and execution of the pilot project, and in the evaluation of its results;

- US \$ 11,546 for organization of meetings;
- US \$ 51,677 for the preparation of manuals, guidelines and reports;

5. National contributions

The national contributions to the pilot project, estimated on the basis of information supplied by 17 participating research centres as equivalent to US \$ 542,600, included:

- 370 man/months of professional and supporting staff (US \$ 222,000 estimated at US \$ 600 per man/month);
- US \$ 201,050 as expendable materials;
- US \$ 119,550 as operating costs of equipment.

6. Documentation

Documents specifically developed for this pilot project include:

- Manual of Methods in Aquatic Environment Research. Part 3: Sampling and Analysis of Biological Material. FAO Fisheries Technical Paper No. 158. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 2: Guidelines for the Use of Biological Accumulators in Marine Pollution Monitoring. FAO Fisheries Technical Paper No. 150. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 5: Statistical Tests. FAO Fisheries Technical Paper No. 182. FAO 1979.

7. Meetings

Specific meetings held in connection with this pilot project:

- FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 2 - 6 May 1977), which also covered MED POL II, was attended by 44 participants from 32 research centres in 14 Mediterranean States^{9/}.

8. Progress achieved

Research agreements have been successfully negotiated with most of the research centres, and signed by 77 per cent of those designated as participants in the pilot project.

Information on the effectiveness of the administrative and financial arrangements made by FAO in connection with the pilot project was received from 17 research centres (71 per cent of those with signed research agreements).

Out of 18 trainees, only two failed to submit technical reports and 12 of them submitted evaluation reports on the results of their training.

The problems encountered by reporting to FAO, the participants' evaluation of the benefits they had from participation in MED POL III, as well as the evaluation of the benefits from training, are similar to those described under MED POL II.

The assistance provided by the Regional Activity Centre to the efficient operation of the pilot project consisted of collaboration with FAO(GFCM) in analysis and evaluation of the interim and final reports of the MED POL III principal investigators.

In view of the expertise available at the research centre selected as the RAC for this pilot project, its performance is evaluated as below expectation and of marginal importance to the pilot project.

MED POL IV : RESEARCH ON THE EFFECTS OF POLLUTANTS ON MARINE ORGANISMS
AND THEIR POPULATIONS (FAO(GFCM)/UNEP)

The actual work of the national research centres on the pilot project started in January 1976.

1. Participants

Twenty-seven research centres from thirteen Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, 19 research agreements had been signed and one cleared and ready for signature.

2. Operational document

The operational document of the pilot project was formulated a joint FAO(GFCM)/UNEP Expert Consultation (Rome, 30 June - 4 July 1975) attended by 25 participants from 13 Mediterranean States^{8/}. Certain modifications of the operational document were agreed upon at the Mid-term Expert Consultation for MED IV and MED V (Dubrovnik, 9 - 13 May 1977) which was attended by 16 experts from 12 research centres participating in MED POL IV^{9/}.

3. Co-ordinating arrangements

FAO(GFCM) maintains the operational contacts with the national research centres participating in the pilot project.

The Station Marine d'Endoume et Centre d'Océanographie, Marseille, France, was nominated in August 1976 to assist FAO(GFCM) as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0502-75-01 and FP/0503-75-07 (both projects covering activities relevant to MED POL II, III, IV and V). Costs relevant to MED POL IV (expressed in US dollars) were shared between the two co-sponsors of these projects as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
FAO(GFCM)	6,000	9,700	9,922	9,890	9,400	4,820	49,732	18.8
UNEP	8,421	44,696	52,628	48,300	47,813	11,894	213,752	81.2
TOTAL	14,421	54,396	62,550	58,190	57,213	16,714	263,484	100.0

*Estimate for the period 1 January - 30 June 1980

Direct support to participants in MED POL IV up to 30 June 1980 amounted to US \$ 108,846 including:

- US \$ 11,546 for equipment;
- US \$ 54,214 for expendable materials;
- US \$ 23,916 for training of 14 trainees (total of 23 man/months) for eight research centres in eight host institutions;
- US \$ 4,265 for attendance at meetings;
- US \$ 4,905 for consultants to participating research centres;
- US \$ 10,000 as assistance to the Regional Activity Centre;

Indirect support to participants in MED POL IV up to 30 June 1980 amounted to US \$ 104,906. This sum included:

- US \$ 54,853 for the services of consultants to assist FAO(GFCM) in the organization and execution of the pilot project, and in the evaluation of its results;
- US \$ 9,142 for the organization of meetings;
- US \$ 40,911 for the preparation of manuals, guidelines and reports;

5. National contributions

The national contributions to the pilot project, estimated on the basis of incomplete information supplied by 10 participating research centres as equivalent to US \$ 1,044,150, included:

- 1004 man/months of professional and supporting staff (US \$ 602,400 estimated at US \$ 600 per man/month)
- US \$ 320,000 as expendable materials;
- US \$ 121,750 as operating costs of equipment.

6. Documentation

Documents specifically developed for this pilot project include:

- Manual of Methods in Aquatic Environment Research. Part 3: Sampling and Analysis of Biological Material. FAO Fisheries Technical Paper No. 158. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 2: Guidelines for the Use of Biological Accumulators in Marine Pollution Monitoring. FAO Fisheries Technical Paper No. 150. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 4: Bases for Selecting Biological Tests to Evaluate Marine Pollution. FAO Fisheries Technical Paper No. 164. FAO 1977;
- Manual of Methods in Aquatic Environment Research. Part 5: Statistical Tests. FAO Fisheries Technical Paper No. 182. FAO 1979;
- Manual on Selected Bioassay Techniques. FAO (in preparation).

7. Meetings

Specific meetings held in connection with this pilot project:

- FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 9 - 13 May 1977), which also covered MED POL V, was attended by 25 participants from 17 research centres in 10 Mediterranean States.

8. Progress achieved

Research agreements have been successfully negotiated with most of the research centres, and signed by 70 per cent of those designated as participants in the pilot project.

Information relevant to the effectiveness of the administrative and financial arrangements made by FAO in connection with the pilot project was received only from 10 research centres (53 per cent of those with signed research agreements) and therefore only a partial evaluation of these arrangements is possible.

Out of 14 trainees, two failed to submit technical reports and only five of them have submitted evaluation reports on their training.

The problems encountered by reporting to FAO, the participants' evaluation of the benefits they had from participation in MED POL IV, as well as the evaluation of the benefits from training, are similar to those described under MED POL II.

The assistance provided by the Regional Activity Centre to the efficient operation of the pilot project consisted of:

- collaboration with FAO(GFCM) in analysis and evaluation of the interim and final reports of the MED POL IV principal investigators;
- preparation of a draft manual on selected bioassay techniques.

The importance of the assistance received from the research centre selected as the RAC for this pilot project was marginal to the pilot project.

MED POL V : RESEARCH ON THE EFFECTS OF POLLUTANTS ON MARINE COMMUNITIES AND ECOSYSTEMS (FAO(GFCM)/UNEP)

The actual work of the national research centres on the pilot project started in March 1976.

1. Participants

Twenty research centres from eleven Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, fifteen research agreements had been signed and one was cleared and ready for signature.

2. Operational document

The operational document of the pilot project was formulated at a joint FAO(GFCM)/UNEP Expert Consultation (Rome, 30 June - 4 July 1975) attended by 25 participants from 13 Mediterranean States^{8/}. Certain modifications of the operational document were agreed upon at the Mid-term Expert Consultation for MED IV and MED V (Dubrovnik, 9 - 13 May 1977) which was attended by 16 experts from 13 research centres participating in MED POL V ^{9/}.

3. Co-ordinating arrangements

FAO(GFCM) maintains the operational contacts with the national research centres participating in the pilot project.

The Centre de Recherche Océanographique et des Pêches, Alger, Algérie, was nominated in August 1976 to assist FAO(GFCM) as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0502-75-01 and FP/0503-75-07 (both projects covering activities relevant to MED POL II, III, IV and V). Costs relevant to MED POL V (expressed in US dollars) were shared between the two co-sponsors of these projects as follows;

	1975	1976	1977	1978	1979	1980*	Total	Percentage
FAO(GFCM)	6,000	6,900	8,168	7,800	6,700	3,695	39,263	15.6
UNEP	8,421	42,375	56,254	49,450	44,344	13,434	214,278	84.4
TOTAL	14,421	49,275	64,422	57,250	51,044	17,129	253,541	100.0

*Estimate for the period 1 January - 30 June 1980

Direct support to participants in MED POL V up to 30 June 1980 amounted to US \$ 131,439 and included the following:

- US \$ 20,477 for equipment;
- US \$ 46,318 for expendable materials;
- US \$ 6,147 for training of five trainees (total of 4.5 man/months) from four research centres in two host institutions;
- US \$ 5,912 for attendance at meetings;
- US \$ 2,585 for consultants to participating research centres;
- US \$ 50,000 as assistance to the Regional Activity Centre;

Indirect support to participants in MED POL V up to 30 June 1980 amounted to US \$ 82,839. This sum included:

- US \$ 43,325 for the services of consultants to assist FAO(GFCM) in the organization and execution of the pilot project, and in the evaluation of its results;
- US \$ 7,217 for the organization of meetings;
- US \$ 32,297 for the preparation of manuals, guidelines and reports;

5. National contributions

The national contributions to the pilot project, estimated on the basis of incomplete information supplied by 11 participating research centres as equivalent to US \$ 1,020,450, included:

- 1,083 man/months of professional and supporting staff (US \$649,800 estimated at US \$ 600 per man/month);
- US \$ 150,550 as expendable materials;
- US \$ 220,100 as operating costs of equipment.

6. Documentation

Documents specifically developed for this pilot project include:

- Manual of Methods in Aquatic Environment Research. Part 3: Sampling and Analysis of Biological Material. FAO Fisheries Technical Paper No. 158. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 2: Guidelines for the Use of Biological Accumulators in Marine Pollution Monitoring. FAO Fisheries Technical Paper No. 150. FAO 1976;
- Manual of Methods in Aquatic Environment Research. Part 5: Statistical Tests. FAO Fisheries Technical Paper No. 182. FAO 1979;
- Manual for Investigations of Pollution-Induced Modifications of Marine Ecosystems. FAO (in preparation).

7. Meetings

Specific meetings held in connection with this pilot project:

- FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 9 - 13 May 1977), which also covered MED POL IV, was attended by 25 participants from 17 research centres in 10 Mediterranean States^{9/}.

8. Progress achieved

Research agreements have been successfully negotiated with most of the research centres, and signed by 75 per cent of those designated as participants in the pilot project.

Information relevant to the effectiveness of the administrative and financial arrangements made by FAO in connection with the pilot project was received from 11 research centres (73 per cent of those with signed research agreements).

All five trainees submitted their technical reports but only 3 of them have submitted reports evaluating their training.

The problems encountered by reporting to FAO, the participants' evaluation of the benefits they had from participation in MED POL V and the evaluation of the benefits from training, are similar to those described under MED POL II.

The assistance provided by the Regional Activity Centre to the efficient operation of the pilot project consisted of:

- collaboration with FAO(GFCM) in analysis and evaluation of the interim and final reports of the MED POL V investigators;
- preparation of a draft manual on pollution induced ecosystem modifications;
- collaboration in the preparation of the MED V Data Inventory Form;
- contribution of 293 references for Mediterranean pollution bibliography.

In view of the initially insufficient expertise available at the research centre selected as the RAC for this pilot project, its performance is evaluated as good and of importance to the pilot project.

MED POL VI : PROBLEMS OF COASTAL TRANSPORT OF POLLUTANTS (IOC/UNEP)

The actual work of the national research centres on the pilot project started in February 1976.

1. Participants

Twenty-three research centres from thirteen Mediterranean States have been designated to participate in the pilot project.

By the end of June 1980, 13 research agreements had been signed and three were cleared and ready for signature.

2. Operational document

The operational document of the pilot project was formulated at a joint IOC/WMO/UNEP Expert Consultation (Msida, 8 - 13 September 1975) attended by 36 participants from 12 Mediterranean States^{6/}. Certain modifications of the operational documents were agreed upon at the Mid-term Review Meeting for MED POL I and MED POL VI (Barcelona, 23 - 27 May 1977) which was attended by 17 experts from 17 research centres participating in MED POL VI.

3. Co-ordinating arrangements

IOC maintains the operational contacts with the national research centres participating in the pilot project.

The Institute of Oceanography and Fisheries, Mediterranean Branch, Alexandria, Egypt, was nominated in August 1976 to assist IOC as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific financial support to the pilot project was provided through projects FP/0503-75-06 (providing also support to MED POL I) and FP/0503-76-04. Costs (in US dollars) were shared between the three co-sponsors of the project as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
IOC	3,500	8,600	12,300	16,100	10,000	4,000	54,500	20.2
UNEP	8,808	10,134	97,866	18,227	79,323	1,000	215,358	79.8
TOTAL	12,308	18,734	110,166	34,327	89,323	5,000	269,858	100.0

*Estimate for the period 1 January - 30 June 1980

No detailed breakdown, showing the amounts spent for direct support of participants in MED POL VI and for the indirect costs of the project, was made available by IOC.

5. National contributions

No estimate on the national financial contributions, through the participation of research centres in MED POL VI was made available by IOC.

6. Documentation

Documents specifically developed for this pilot project include:

- Guidelines for the Implementation of Pilot Projects MED I and MED VI. Supplements 1 and 3 to IOC-WMO-UNEP/MED-MRM/3. UNESCO 1977;
- Provisional Bibliography related to hydrography and Circulation in the Mediterranean Sea. IOC-WMO-UNEP/MED-MRM 24, UNESCO 1977.

7. Meetings

Specific meetings held in connection with this pilot project:

- IOC/WMO/UNEP Mid-term Review Meeting (Barcelona, 23 - 27 May 1977) which also covered MED POL VI, was attended by 32 participants from 24 research centres in 12 States^{7/}.

8. Progress achieved

No evaluation of the progress achieved and problems encountered was made available by IOC.

MED PDL VII : COASTAL WATER QUALITY CONTROL (WHO/UNEP)

The actual work of the national research centres on the pilot project started in late autumn 1976.

1. Participants

Thirty-one research centres from fourteen Mediterranean States have been designated to participate in the pilot project. One of them was officially withdrawn as participant in the project.

By the end of June 1980, 30 research agreements had been signed.

2. Operational document

The operational document of the pilot project was formulated at the WHO/UNEP Expert Consultation (Geneva, 15 - 19 December 1975) attended by 27 participants from 16 Mediterranean States^{10/}. Certain modifications of the operational document were proposed and agreed upon at the Group of Experts on Health Related Monitoring of Coastal Water Quality (Rovinj, 23 - 25 February 1977) attended by 10 experts from 9 research centres^{11/}, at the Group of Experts on Health Criteria and Epidemiological Studies Related to Coastal Water Pollution (Athens, 1 - 4 March 1977) attended by 8 experts from 8 research centres^{12/}, at the Mid-term Review Meeting of Principal Investigators of Collaborating Laboratories (Rome, 30 May - 1 June 1977) attended by 24 experts from 22 research centres^{13/}, at the Workshop on Coastal Water Pollution Control (Athens, 27 June - 1 July 1977) attended by 31 experts from 26 research centres^{14/}, at the Seminar on Monitoring of Recreational Coastal Water Quality and Shellfish Culture Areas (Rome, 4 - 7 April 1978) attended by 25 experts from 25 research centres^{15/}, at the Workshop on Coastal Quality Monitoring of Recreational and Shellfish Areas (Rome, 17 - 19 January 1979) attended by 31 experts from 27 research centres^{16/} and at the Workshop on Coastal Quality Monitoring of Recreational and Shellfish Areas (Rome, 20 - 23 November 1979) attended by 28 experts from 26 research centres^{17/}.

3. Co-ordinating arrangements

WHO maintains the operational contacts with the national research centres participating in the pilot project.

The Istituto Superiore di Sanita, Rome, Italy, was nominated in August 1976 to assist WHO as the Regional Activity Centre for this pilot project.

4. Financial arrangements (including commitments)

Specific support to the pilot project was provided through projects FP/0501-74-08, FP/0503-75-08 and FP/0503-76-05. Costs (in US dollars) were shared between the two co-sponsors of the project as follows:

	1974	1975	1976	1977	1978	1979	1980*	Total	Percentage
WHO	5,000	18,000	20,000	90,000	47,000	21,000	12,000	213,000	31.5
UNEP	11,284	20,866	24,525	86,540	170,001	100,415	49,084	462,715	68.
TOTAL	16,284	38,866	44,525	176,540	217,001	121,415	61,084	675,715	100.0

*Estimate for the period 1 January - 30 June 1980

Direct support to participants in MED POL VII up to 30 June 1980 amounted to US \$ 202,636 and included the following:

- US \$ 82,050 for equipment;
- US \$ 34,040 for expendable materials;
- US \$ 24,741 for training of 14 trainees (total of 9.5 man/months) from 10 research centres in 7 host institutions;
- US \$ 49,305 for attendance at meetings;
- US \$ 12,500 as assistance to the Regional Activity Centre.

Indirect support to participants in MED POL VII up to 30 June 1980 amounted to US \$ 473,079. This sum included:

- US \$ 160,559 for the services of consultants to assist WHO in the organization and execution of the pilot project and in the evaluation of its results;
- US \$ 105,838 for the organization of meetings;
- US \$ 175,382 for the preparation of manuals, guidelines and reports;
- US \$ 31,300 for miscellaneous expenses.

5. National contributions

The national contributions to the pilot project, estimated on the basis of information supplied by participating research centres as equivalent to US \$ 2,963,804, included:

- 1636 man/months of professional and supporting staff (US \$2,429,000 estimated as an average close to US \$ 1,500 per man/month);
- US \$ 214,260 as expendable materials;
- US \$ 320,544 as operating costs of equipment.

6. Documentation

Documentation specifically developed for this pilot project is contained in the reports of the various meetings mentioned in the paragraph describing the development of the operational document for MED POL VII.

7. Meetings

Specific meetings held in connection with this pilot project are mentioned in the paragraph describing the development of the operational document for MED POL VII.

8. Progress achieved

Research agreements have been successfully negotiated with all the research centres, and signed by 100 per cent of those designated as participants in the pilot project.

The periodic reporting to WHO by the research centres was weak until 1978 (only 62 per cent of the centres respected the deadlines and half of the submitted data was not in the agreed format), but afterwards the situation considerably improved (79 per cent of the centres submitted adequate reports in time).

Information relevant to the effectiveness of the administrative arrangements by WHO in connection with the pilot project was received from 27 research centres (90 per cent of those which signed research agreements). According to the replies received, the pilot project:

- greatly increased the ability of the research centres to control, on a routine basis, the quality of the national recreational and shellfish-growing waters;
- improved the research and monitoring methods used in research centres and harmonized the approach to the evaluation of the environmental quality of coastal waters;

- assisted in development of national programmes to control the quality of coastal waters;
- contributed, through personal contacts, to the exchange of views between experts and to the development of interim environmental quality criteria for recreational and shellfish-growing waters.

Most of the research centres expressed their appreciation for the assistance received through the project, although some indicated that it did not meet all their requirements. The administrative support was generally described as excellent, but a few centres suggested that the transfer of funds, equipment and material, should follow a simplified procedure. Practically all research centres expressed their desire to continue their participation in the follow-up activities to the project.

Only four (out of 10) trainees have submitted reports on the effectiveness of their training. They commented very favourably about the benefits derived from training and expressed satisfaction with the arrangements made by WHO and host institutions, as well as with the programme, of training carried out by the host institutions.

In addition to the individual on-the-job training, training was also provided through specific meetings and seminars (see paragraph on the development of the operational document for MED POL VII).

In view of the limited funds available, the training needs of the project have not been satisfied completely although, without any doubt, the training accomplished through the project greatly enhanced the quality of the work performed in the national research centres participating in the pilot project.

The assistance provided by the Regional Activity Centre to the efficient operation of the pilot project consisted of:

- hosting and co-organizing four meetings; (13/, 15/, 16/ and 17/)
- issuing a newsletter (five issues);
- visits of experts from RAC to 7 research centres participating in the pilot projects in order to assist their participation in the project;
- assistance in the development of data recording forms;
- development of a quality control scheme for microbiological examination of sea water;
- collation, analysis and evaluation of data submitted to WHO by research centres participating in the pilot project.

The contribution of the Regional Activity Centre to the successful day-to-day operation of the pilot project and to its overall success was essential.

MED POL VIII : BIOGEOCHEMICAL STUDIES OF SELECTED POLLUTANTS IN THE OPEN WATERS OF THE MEDITERRANEAN (IAEA/IOC/UNEP)

The project formally started in October 1976 as a specific extension of earlier work carried out by the IAEA International Laboratory of Marine Radioactivity in Monaco since 1974.

1. Participants

In addition to the IAEA Monaco Laboratory, five research centres from five Mediterranean States were selected as participants in the project.

By the end of June 1980, research agreements have been signed with all five research centres.

2. Operational document

The technical details of the project are formalized in the description contained in the project document signed between IAEA and UNEP (FP/0503-76-09).

3. Co-ordinating arrangements

The IAEA Monaco Laboratory maintains the operational contacts with the research centres participating in the project. IOC is associated, through the IAEA Monaco Laboratory, with the execution of the project.

4. Financial arrangements

Specific financial support to the project was provided through project FP/0503-76-09. Costs (in US dollars) were shared between the three co-sponsors of the project as follows:

	1976	1977	1978	1979	Total	Percentage
IAEA	2,000	150,000	95,000	95,000	342,000	58.7
IOC	-	5,000	7,500	7,500	20,000	3.4
UNEP	325	126,211	56,195	37,805	220,536	37.9
TOTAL	2,325	281,211	158,695	140,305	582,536	100.0

These costs included:

- US \$ 56,200 as direct assistance to the five national research centres;
- US \$ 51,000 for the operation of research vessels.

5. National contributions

The contributions in kind and services from the national research centres participating in the project are estimated at US \$ 52,600 and include:

- 12 man/months of professional and supporting staff estimated as equivalent to US \$ 33,600 (estimated at US \$ 2,800 per month);
- US \$ 8,500 as expendable materials;
- US \$ 10,500 as operating cost of equipment.

6. Documentation

No specific documents have been developed for or by the project.

7. Meetings

In view of the small number of research centres participating in the project and the highly specific and different contribution of each centre, no meetings were held in connection with the project.

Instead of meetings, personal contacts between IAEA Monaco Laboratory and the participating research centres were used to review the work.

8. Progress achieved

Research agreements have been successfully negotiated with research centres and signed by all of them.

The periodic reporting to the IAEA Monaco Laboratory by the research centres was generally satisfactory.

According to the information received from all the research centres, the project was of great value for them in that it:

- enabled widening of the scope of their research and monitoring activities;
- contributed to the efficiency of their work and to the quality of their results;
- introduced new techniques and harmonized their research with other research centres in the region;

- provided for exchange of data and for their comparison with those obtained in other research centres in the Mediterranean.

All research centres expressed their strong wish to continue their collaboration on this or similar marine pollution research and monitoring programmes.

No formal training activities were undertaken under the project.

MED POL IX : ROLE OF SEDIMENTATION IN THE POLLUTION OF THE MEDITERRANEAN SEA (UNESCO/UNEP)

The project was initiated in October 1975 and was later (1978) partly integrated into the activities carried out under project MED POL X.

1. Participants

National institutions in 17 Mediterranean States, selected through UNESCO country focal points, participated in the project.

2. Operational document

The technical details of the project were identified at the UNESCO/UNEP Meeting of Experts on Pollutants Entering the Mediterranean through Rivers (Paris, 17 - 21 May 1976).

3. Co-ordinating arrangements

UNESCO maintained the operational contacts with national institutions participating in the project.

4. Financial arrangements

Specific financial support to the project was provided through project document FP/1106-75-06. Costs (in US dollars) were shared between the co-sponsors of the project as follows:

	1976	1977	1978	Total	Percentage
UNESCO	6,000	9,500	1,500	17,000	25.1
UNEP	13,515	13,923	23,198	50,636	74.9
TOTAL	19,515	23,423	24,698	67,636	100.0

These costs included:

- US \$ 9,000 for project personnel;
- US \$ 15,000 for consultants;
- US \$ 1,500 for administrative support;
- US \$ 34,000 for meetings, including the cost of attendance to the meetings;
- US \$ 5,000 for reporting costs;
- US \$ 3,136 for miscellaneous expenses.

5. National contributions

No attempt was made to estimate the size of national contributions to the project through the participation of national institutions in its execution.

6. Documentation

Documents prepared for, or through, this project include:

- Role of Sedimentation in the Pollution of the Mediterranean Sea: Assessment of Knowledge and Development of Guidelines. Report of UNESCO/UNEP Meeting of Experts (Rome, 20 - 23 December 1976). UNESCO 1976.

7. Progress achieved

The progress achieved through MED POL IX is described under MED POL X.

MED POL X : POLLUTANTS FROM LAND-BASED SOURCES IN THE MEDITERRANEAN
(WHO/ECE/UNIDO/FAO/UNESCO/IAEA/UNEP)

The project was initiated in early 1976.

1. Participants

National focal points in the Mediterranean States and, through them, a large number of national institutions were involved in the project.

2. Operational document

The document (FP/0503-76-01) specifying all project operations was prepared by a series of interagency consultations and agreed upon among the six co-operating agencies and UNEP.

3. Co-ordinating arrangements

The project was a joint undertaking of six co-operating United Nations bodies (WHO, ECE, UNIDO, FAO, UNESCO and IAEA) each contributing in its specific field of competence and with WHO acting as the technical co-ordinator of the work.

4. Financial arrangements

Specific financial support to the project was provided through project FP/0503-76-01. Costs (in US dollars) were shared between the seven co-sponsors of the project as follows:

	1976	1977	1978	1979	Total	Percentage
WHO	15,500	52,500	12,000	-	80,000	16.3
ECE	-	12,000	4,000	-	16,000	3.2
FAO	1,000	9,000	6,000	-	16,000	3.2
IAEA	200	800	-	-	1,000	0.2
UNESCO	800	8,000	3,000	4,200	16,000	3.2
UNIDO	-	14,000	2,000	-	16,000	3.2
UNEP	24,862	281,561	34,212	6,957	347,592	70.7
TOTAL	42,362	377,861	61,212	11,157	492,592	100.0

5. National contributions

The national financial contributions to the project are not known but, judging from the large input from national institutions into the project, the size of this contribution (in kind and services) is estimated as equivalent to US \$500,000.

6. Documentation

Documents specifically developed for and by this project include:

- Pollutants from Land-Based Sources in the Mediterranean. UNEP/WG.18/INF.4. UNEP 1979.
- Principles and Guidelines for the Discharge of Wastes into the Marine Environment. WHO 1979.

7. Meetings

Specific meetings held in connection with this project:

- UNEP/WHO/ECE/UNIDO/FAO/UNESCO/IAEA Meeting of Experts on Pollutants from Land-Based Sources (Geneva, 19 - 23 September 1977), attended by 22 participants from 13 Mediterranean States.

8. Progress achieved

The project achieved all its objectives, i.e. it produced the first reliable and comprehensive assessment of the sources and amounts of pollutants entering the Mediterranean Basin from land-based sources (including through rivers), and of the current waste disposal and management practices in the coastal zones of the Mediterranean States.

The results of the project were of primary importance for the successful negotiation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources.

In spite of logistic problems involved in the execution of a project of such a complex nature, the co-ordinating arrangements between the co-sponsors of the project and the relevant national authorities were very efficient and exemplary.

MED POL XI : INTERCALIBRATION OF ANALYTICAL TECHNIQUES AND COMMON MAINTENANCE SERVICES (IAEA/FAO(GFCM)/IOC/UNEP)

The project formally started in late 1975 although the intercalibration/standardization activities are a specific extension of an earlier work carried out by the IAEA International Laboratory of Marine Radioactivity in Monaco since 1974 (FP/1301-74-07). Maintenance services became available in late 1976.

1. Participants

Participation in the intercalibration of analytical methods was mandatory for all national research centres participating in MED POL projects which involved analysis of dissolved petroleum hydrocarbons (MED POL I), metals (MED POL II) and chlorinated hydrocarbons (MED POL III).

The common maintenance services were available for all participants in MED POL.

2. Operational document

The technical details relevant to the intercalibration of analytical methods are outlined in the documentation indicated in paragraph 6 of this chapter.

3. Co-ordinating arrangements

The intercalibration of analytical methods relevant to metals and chlorinated hydrocarbons was co-ordinated by the IAEA Monaco Laboratory (which acts as an intercalibration centre for UNEP-sponsored marine pollution projects) in co-operation with FAO(GFCM). The intercalibration of analytical methods relevant to petroleum hydrocarbons was co-ordinated by IOC.

The provision of common maintenance services was co-ordinated by the IAEA Monaco Laboratory in co-operation with FAO(GFCM) and IOC.

4. Financial arrangements (including commitments)

Specific financial support to the project (excluding the costs of intercalibration for petroleum hydrocarbons) was provided through projects FP/1301-74-07 and FP/0503-75-04. Costs (in US dollars) were shared between the three co-sponsors of the project as follows:

	1975	1976	1977	1978	1979	1980*	Total	Percentage
IAEA	20,000	50,000	50,000	50,000	50,000	32,000	252,000	32.5
IOC	2,000	4,000	3,000	3,000	-	-	12,000	1.5
UNEP	88,673	33,714	150,707	7,791	193,000	37,073	510,958	66.0
TOTAL	110,673	87,714	203,707	60,791	243,000	69,073	774,958	100.0

*Estimate for the period 1 January - 30 June 1980

5. National contributions

The financial contributions of national research centres to the activities covered by MED POL XI are included in the estimates given in the sections dealing with MED POL I, II and III.

6. Documentation

Documents specifically developed in the framework of this project:

- Intercalibration of Analytical Methods in Marine Environmental Samples. Progress Report No. 13 (IAEA 1976), No. 15 (IAEA 1977), No. 16 (IAEA 1978), No. 18 (IAEA 1978), No. 19 (IEAE 1978), No. 20 (IAEA 1980).
- Intercalibration of Organochlorine Compound Measurements in Marine Environmental Samples. Report No. 1 (IAEA 1977), No. 2 (IAEA 1979).

7. Meetings

Specific meetings held in connection with this project:

- Meeting of Consultants on Organochlorine Intercalibration Measurements (Monaco, 3 - 5 November 1976), attended by 8 participants from 8 research centres.

8. Progress achieved

Through the services of the maintenance engineer of the IAEA Monaco Laboratory, efficient assistance was provided to a large number of research centres in installing, maintaining and repairing atomic absorption spectrophotometers, gas chromatographs, fluorometers, current meters and similar equipment.

Maintenance services, accomplished during visits of the maintenance engineer, consisted of:

- installation of equipment (frequently in co-operation with the expert provided by the supplier of the equipment);
- regular maintenance services (cleaning, adjustments, etc.);
- reparation or replacement of faulty components;
- instruction of local expert on maintenance procedures.

Visits to the research centres were undertaken:

- at the installation of the larger equipment provided to the research centre through MED POL;
- at regular intervals for routine check-ups of earlier-installed equipment;
- of emergency calls when an instrument broke down or did not perform satisfactorily.

The services of the maintenance engineer were, in principle, available only for the maintenance of instruments provided to the research centres through MED POL but, in exceptional cases, equipment used for but not provided through MED POL was also repaired.

During three and a half years through the project, 40 maintenance visits have been paid to 17 research centres in 10 Mediterranean States. The reports on these visits indicate that the services provided were very efficient and of high professional quality. In view of the prevailing conditions in most of the Mediterranean States, the project should be considered as an essential contribution to the successful work of many national research centres.

The MA-M-1 (oyster) sample was distributed in 1976; the SP-M-1 (sea-plant) and MA-A-1 (copepod) samples in 1977 and MA-A-2 (fish) sample in 1978. The intercalibration exercise on the MA-M-1 (oyster) sample was completed in 1977, that on SP-M-1 (sea-plant) and MA-A-1 (copepod) in 1978, and that on MA-A-2 (fish) in 1979.

During the intercalibration operations, major difficulties have been encountered in the covering reports of the analytical results from some research centres. While most of the participating laboratories reported their results punctually within specified deadlines, the result-reporting of some laboratories was much slower, so that the statistical treatment of the reported results as well as the feedback processes of the result-survey to individual laboratories tended to be delayed. From some laboratories the reports have not been received to date, despite the fact that the laboratories had been equipped with the necessary instruments and these instruments have been proved to be functioning. Except for a limited number of laboratories, the intercalibration exercises have proceeded very effectively and the participating laboratories received the necessary feedback for their analytical quality control.

MED POL XII : INPUT OF POLLUTANTS INTO THE MEDITERRANEAN SEA THROUGH
THE ATMOSPHERE (WMO/IAEA/WHO/UNIDO/ECE/UNEP)

This project, suggested by several Mediterranean expert groups^{18/} and by an intergovernmental meeting^{19/} remained in the planning phase only.

The first outline of a possible approach to the problem was formulated by the World Meteorological Organization (WMO) in consultation with IAEA, ECE, UNIDO, WHO and UNEP.

No specific expenses have been incurred by UNEP in connection with this project.

MED POL XIII : MODELLING OF MARINE SYSTEMS IN THE FRAMEWORK OF MED POL
(UNESCO/FAO/IOC/UNEP)

Several scientific and expert group meetings on ecosystem modelling^{20/}, ^{21/} have been convened since 1973 by UNESCO and this activity was expanded after 1976 with assistance from UNEP. At the Expert Consultation in Paris, the establishment of working groups was proposed, each concerned with one specific region in the Mediterranean. The group for the north-western Mediterranean gathered at Banyuls-Sur-Mer, January 1977, and elaborated the framework in which studies of marine processes would have to be undertaken

At the Mid-term Review Meetings on Individual Pilot Projects of MED POL in Dubrovnik (May 1977)^{9/}, Barcelona (May 1977)^{7/} and Monaco (1977)^{18/}, it was recommended that an interdisciplinary task team should be created to formulate conceptual models for the most critical pollutants in the Mediterranean, to advance these to the level of mathematical models for certain Mediterranean areas by using data generated in the various pilot projects of the Mediterranean Action Plan, and to test their predictive capabilities as a management tool.

Based on the guidance received at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)^{19/}, an outline of a project focusing on hydrodynamic, biogeochemical and ecosystem modelling, was drawn up jointly with UNESCO.

V SUPPORTING ACTIVITIES

Co-ordination

MED POL activities are organized in close collaboration between UNEP and the specialized United Nations bodies (ECE, UNIDO, GFCM of FAO, UNESCO, IOC of UNESCO, WHO, WMO, IMCO and IAEA) and selected non-United Nations organizations (IUCN, ICSEM), which have a major role in their implementation. Throughout the planning period, and in particular during the whole of the pilot phase, which has been extended to 31 April 1981, a high degree of co-operation has been, and is being, maintained by UNEP, acting as the overall co-ordinator, and these specialized organizations. The overall co-ordination of MED POL - PHASE I was and is carried out, on UNEP's behalf, by the UNEP Regional Seas Programme Activity Centre (RS/PAC) and was achieved through frequent contacts and consultations between RS/PAC and the relevant specialized organizations. In order to facilitate the co-ordination of the original seven MED POL pilot projects, an Inter-Agency Advisory Committee (IAAC) was established in 1975.

The co-ordination of MED POL with similar ongoing and planned programmes in the other regions of the globe (Caribbean, Kuwait Action Plan Region, South-East Pacific, Red Sea, West Africa and others) is performed by UNEP's Regional Seas Programme Activity Centre (RS/PAC).

Apart from the specific contributions to the individual projects described in Section IV of this document, and through them to the national research centres participating in them, additional support was provided to initiate and assist the implementation of MED POL-related activities through the RS/PAC and through the funds directly under its control (project documents FP/0503-75-01 and FP/0503-77-03).

This assistance was related to general MED POL-related activities or to activities involving more than one of the MED POL projects. The overall costs (in US dollars) of this is estimated as:

1975	1976	1977	1978	1979	1980*	Total
95,000	245,000	247,000	318,000	370,000	175,000	1,450,000

*Estimate for the period 1 January - 30 June 1980

Documentation

Apart from specific documents prepared for the various individual MED POL projects as guidelines and manuals for participants in these activities (see Section IV of this document) several documents of a general nature have been prepared or are in preparation. These include:

- Periodic reports on the progress of MED POL for the annual intergovernmental meetings reviewing the Mediterranean Action Plan (UNEP/IG.11/3, UNEP/IG.11/INF.3, UNEP/IG.14/4 and UNEP/IG.18/4). In most cases these reports are part of the reports submitted by the Executive Director of UNEP to these meetings.
- Data profiles for chemicals for the evaluation of their hazards to the Mediterranean Sea^{22/}. This two-volume publication was prepared by UNEP's International Register of Potentially Toxic Chemicals (IRPTC) in co-operation with RS/PAC in order to facilitate negotiation of the Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources.
- Draft reference methods for marine pollution studies in the Mediterranean (UNEP/WG.46/6).
- Bibliography of publications related to Mediterranean pollution studies and monitoring^{23/}. Building on a bibliography compiled by FAO and with the co-operation of FAO, IOC, IAEA and WHO, a comprehensive bibliography is being prepared^{24/}.
- Directory of Mediterranean Marine Research Centres. The first edition contained detailed descriptions of 50 research centres; the second edition^{5/} was enlarged and covers over 140 Mediterranean research centres.
- The scientific results of MED POL are published in the form of collated reports of research centres participating in MED POL (UNEP/IG.18/INF.3 and UNEP/WG.46/INF.6) or in synthesis reports prepared by UNEP and the specialized organizations of the United Nations system supporting the programme (UNEP/WG.46/3, PART I).
- A comprehensive account of the state of pollution in the Mediterranean is being prepared on the basis of the results obtained through MED POL and other sources. The first preliminary draft (UNEP/IG.11/INF.4) was distributed for comments in 1978, the second draft will be ready in the first half of 1981.
- Scientific results of MED POL activities are presented at joint meetings with ICSEM (Split, 22 - 23 October 1976; Antalya, 24 - 27 November 1978 and Cagliari, 9 - 13 October 1980) and are regularly published as proceedings of the joint ICSEM/UNEP Workshop on Pollution of the Mediterranean.
- A survey of pollution from land-based sources was accomplished and published (UNEP/WG.18/INF.4).
- A large number of technical documents was prepared, with the co-operation of IUCN and FAO, related to the development of a protocol on Mediterranean specially protected areas (UNEP/IG.20/3 and UNEP/IG.20/INF.5-10).

- A draft of the long-term programme for pollution monitoring and research in the Mediterranean (MED POL-PHASE II) was prepared (UNEP/WG.46/4) with the co-operation of several specialized organizations.
- Informative leaflets relevant to various MED POL activities, including a periodically updated list of available documents, are prepared occasionally and distributed in large amounts.
- The Siren, an informal quarterly publication, issued by UNEP since June 1978, presents news from UNEP's Regional Seas Programme. Due to its large and world-wide circulation, it assists in spreading general, non-technical information on MED POL.

Data handling

The rough estimate of the total number of primary data collected through MED POL is 1.5 million data items per year.

The first evaluation of the primary data is the task of the research centre which collected it. Secondary (reduced) data are reported periodically to the specialized United Nations body having the technical responsibility for the implementation of the project. The processing of the secondary data, including their validation and analysis is accomplished by the relevant specialized United Nations organizations which report them to RS/PAC.

The facilities of the Geneva-based United Nations International Computing Centre (ICC) were selected to be used on a trial basis as the central data repository and processing facility for the entire Mediterranean Action Plan. Approximately 60,000 items of reduced data have been reported to the Co-ordinating Centre.

Data are collected, handled and disseminated according to existing standard format and practices, making full use of the existing mechanisms for data exchange. Little progress has been made in this area, due to the following problems:

- (a) Many of the data forms were incorrectly or inadequately completed resulting in unusable data. The missing items cannot easily be completed now due to the long time interval between data generation and the detection of errors.
- (b) Major contributions to the Mediterranean Trust Fund have been delayed and this has caused delays in the recruitment of computer staff and the purchase of essential computer equipment for the Co-ordinating Unit.
- (c) Much of the data is of strictly local relevance and cannot be used in presenting a coherent and composite picture of Mediterranean conditions.

Work is still progressing on the data analysis, but the main lesson of MED POL seems to be that future data collection and evaluation procedures will need to be designed with better quality controls and with Mediterranean-wide objectives as the prime consideration.

VI SUMMARY AND CONCLUSIONS

In this section an attempt is made to summarize the facts contained in previous sections of the report and to analyse the common administrative and financial problems concerning the execution of the pilot phase of MED POL.

The large number of national research centres designated by their Governments to participate in MED POL (83 research centres from 15 Mediterranean States, and the EEC; see tables 1 and 2), the diversity of the programme (17 projects, see table 3 and UNEP/WG.46/INF.5) and its geographic coverage, the impressive number of Mediterranean scientists and technicians (about 200) and the number of co-operating agencies and supporting organizations (see table 3) involved in it, qualifies MED POL as certainly one of the largest and most complex co-operative scientific programmes with a specific and well-defined aim ever undertaken in the Mediterranean basin.

The selection of national research centres, made by national Government authorities, was in most cases fully justified, although some of the centres were, at the time of their nomination, not able to contribute effectively to the programme. The remarkable progress made by some centres in developing their ability to analyse the state of pollution in the Mediterranean and to embark on independent scientific research was made possible only by "risky" and "unsafe" investment in their instrumentation and in training of their experts.

Unfortunately, a few bad examples show that no amount of assistance can move those who are not genuinely motivated to participate in the agreed programme. Obviously they did not grasp the idea: namely, that they have been selected by their own Governments to do a job not "for UNEP" but for their Governments as part of a programme to which they are committed through a legally binding regional convention and that UNEP was their contractor only on behalf of their own Governments.

Contacts between the national research centres and the specialized organizations responsible for the day-to-day organization and supervision of the various projects was, in general, satisfactory, although many of the research centres did not respect the deadlines for reporting of results or the formats in which it was agreed data would be reported. This caused considerable problems in the consolidation of the results obtained through MED POL and in the evaluation of their significance by the secretariat.

The training of 82 national experts and technicians (87 man months), the deployment of capital equipment (table 4) and the donation of expendable material was of great value to research centres participating in MED POL. Problems encountered in organizing an effective training programme, that used almost exclusively research centres participating in MED POL as training centres, were more than offset by the benefits derived from the strengthened co-operation of Mediterranean scientists through their direct contacts during the training period.

A few years ago in most of the Mediterranean States there were no national centres capable of providing the scientific information required by the legal agreements approved by Governments in the framework of the Mediterranean Action Plan. Today, the situation has considerably changed. In spite of some initial doubts about its effectiveness, the policy followed was to give an equal chance to all participants in MED POL by channeling the resources to those who needed them most. The blame should not be placed upon UNEP and the organizations through which the assistance was actually provided (FAO, WHO and IOC, in particular) if this approach did not yield the same results in every case.

The total actual cost of MED POL, from its beginning until mid-1980, is estimated as US \$18.4 million (table 5), including the cash contribution from UNEP (US \$4,432,790) and from the Mediterranean Trust Fund (US\$543,100), the contributions (mostly in kind and services) of the various specialized organizations (US \$1,415,165) and the estimated costs to the national research centres participating in the programme (US \$12 million). Out of this sum, US \$1,465,181 was distributed, through UNEP and the relevant specialized agencies, as direct assistance to the national research centres participating in the various projects (table 6) in the form of equipment, expendable material, training and experts (only on request of the centres). A further sum of approximately US \$130,000 should be added to this figure, representing the amount spent by UNEP, directly and through the specialized agencies, on travel expenses of experts participating in various meetings called in connection with MED POL.

Indirect assistance to the participants in MED POL was provided: through the organization of the data quality control programme (intercalibration of analytical techniques) which ensured the Mediterranean-wide comparability of data (tables 7 and 8); through the common maintenance services (table 9) which kept the expensive analytical equipment (table 4) functioning even under most difficult conditions; through the preparation of numerous guidelines, manuals, surveys, bibliographies and directories; and through the organization of meetings of experts (table 10) which provided a required forum for free exchange of ideas, comparison of results and harmonization of approach to further work.

Last, but not least, the total cost of MED POL should include approximately US \$4 million for "co-ordination" which represents the expenses for the staff, experts and consultants working in UNEP and in the specialized organizations for MED POL (many of them were made available free of charge as a contribution in kind to MED POL) and the cost of meetings and their documentation.

The reported cost (table 5) to the national research centres (US \$7.2 million) for the participation of their staff and use of their equipment in the work, should be considered as grossly underestimated, as it is based on information received only from some of the principal investigators and on uneven estimates for the actual cost of the experts/technicians per month. An estimate of US \$10-15 million would seem more realistic, in the view of the secretariat, thus bringing the total contributions to MED POL, in the period up to June 1980, to:

- from Environment Fund (UNEP)	US \$ 4,432,790
- from the Mediterranean Trust Fund	US \$ 543,000
- from national research centres	US \$12,000,000 (estimate)
- from the specialized organizations	US \$ 1,415,165
Total	US \$18,390,955

The total figure might appear high, but should in fact be considered, when compared with values at stake, as a very modest investment in the future of the Mediterranean basin.

A programme as large-scaled and diversified as MED POL is, inevitably requires a complicated co-ordinating mechanism to cope with logistic problems that, from time to time, seemed insurmountable. Taking into account that there was no model to be followed and that the co-ordinating mechanism had to be built as the programme was developing, the effectiveness of this mechanism can be assessed as satisfactory. This general assessment should in no way be interpreted as a recommendation that no changes in the present arrangements should be made in order to improve its future functioning or in order to adapt it to the future needs of the programme.

The transfer of overall co-ordination of MED POL from UNEP's Regional Seas Programme Activity Centre (RS/PAC) to the Co-ordinating Unit for the Mediterranean Action Plan, envisaged by the recommendations of the first Meeting of Contracting Parties (UNEP/IG.14/9), has not yet even started as funds were not available (from the Mediterranean Trust Fund) for the appointment of the Unit's marine scientist. Therefore, RS/PAC, on behalf of UNEP (acting as the Secretariat of the Barcelona Convention), and in consultation with the Co-ordinator of the Mediterranean Action Plan on all policy issues, co-ordinated directly the various MED POL-related project activities (table 3) that were implemented through the specialized organizations which maintained the day-to-day contacts with national research centres.

Full credit should be given to the specialized organizations for the quality of their co-operation with RS/PAC and for the active role they played in MED POL. However, the increasing complexity of the work and the inherent interdependence of the projects handled by different organizations made this co-ordination more and more difficult as it required more frequent direct contacts of staff (working in Geneva, Rome, Copenhagen, Paris, etc.) in order to allow for efficient joint analysis of the results obtained and preparation of the long-term programme.

The experiment of establishing MED POL Regional Activity Centres proved that the creation of functional centres of excellence is not an easy task. Only two, out of seven, justified the expectations and made a real impact on the development of MED POL. Strange enough, one of these was probably the weakest at the moment of its selection (1976) but with great efforts by its staff remarkable progress was made under relatively unfavourable local conditions, thus proving that there were no "objective" reasons for the inactivity of those centres whose performance was assessed as inadequate.

Since 1977, and in particular starting from the second half of 1979, the financial support to MED POL became less than sufficient (figure 1) to sustain the initial enthusiasm of national research centres (figure 2). Due to the lack of adequate funds more time was spent (wasted) during the last meetings of the MED POL Interagency Advisory Committee on discussions related to financial matters than on real co-ordination of the MED POL's substantive work. Although the reasons for the financial problems (two-thirds of the cash contribution to the Mediterranean Action Plan was expected to come from the Mediterranean Trust Fund, one-third from the Environment Fund) were well understood by the organizations co-operating with UNEP on the implementation of the MED POL projects, they repeatedly expressed their inability to guarantee the quality of the work under those circumstances. The consequences of this situation are reflected, in particular, in the delayed and partly inadequate preparation of the meeting of experts to evaluate the pilot phase of MED POL and to consider the phase II of MED POL.

NOTES AND REFERENCES

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- 4/ Feasibility Study for the Execution of Mediterranean Co-ordinated Pollution Monitoring and Research Programme. UNEP/WG.2/INF.6. UNEP 1974.
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- 9/ Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL). 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.
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- 12/ Health Criteria and Epidemiological Studies Related to Coastal Water Pollution. Report of a meeting of WHO/UNEP Joint Group of Experts (Athens, 1 - 4 March 1977). WHO 1977.
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- 15/ Monitoring of Recreational Coastal Water Quality and Shellfish Culture Areas. Report of a joint WHO/UNEP Seminar (Rome, 4 - 7 April 1978). WHO 1978.
- 16/ Coastal Quality Monitoring of Recreational and Shellfish Areas. Report of a WHO/UNEP Workshop (Rome, 17 - 19 January 1979). WHO 1979.
- 17/ Coastal Quality Monitoring of Recreational and Shellfish Areas. Report of a WHO/UNEP meeting of MED POL VII principal investigators (Rome, 20 - 23 November 1979). WHO 1980.
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- 19/ Report of the Intergovernmental Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978). UNEP/IG.11/4. UNEP 1978.
- 20/ Marine Ecosystem Modelling in the Eastern Mediterranean. Report of a UNESCO Workshop (Alexandria, 2 - 8 December 1974). UNESCO Reports in Marine Science No. 1. UNESCO 1977.
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- 23/ Selected Bibliography on Studies and Research Relevant to Pollution in the Mediterranean. FAO Fisheries Technical Paper No. 165. FAO 1977.
- 24/ Selected Bibliography on the Pollution of the Mediterranean Sea (prepared in collaboration with FAO, WHO, IOC, WMO, IAEA and UNEP). UNEP (in preparation).
- 25/ Proceedings of ICSEM/UNEP Joint Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978). ICSEM 1979.

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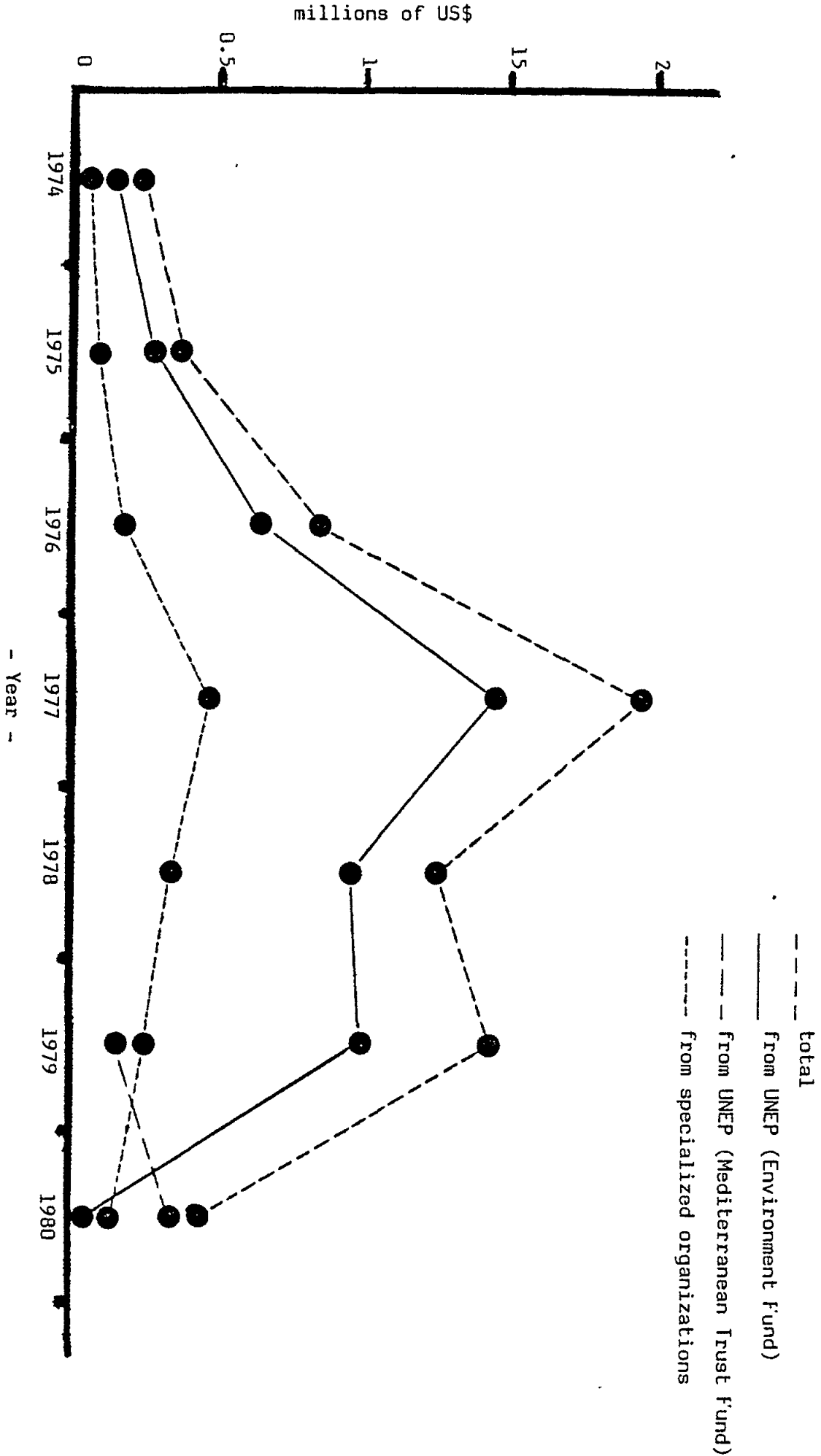


Figure 1 : Annual financial contributions to MED POL - PHASE I. For details see Table 5.

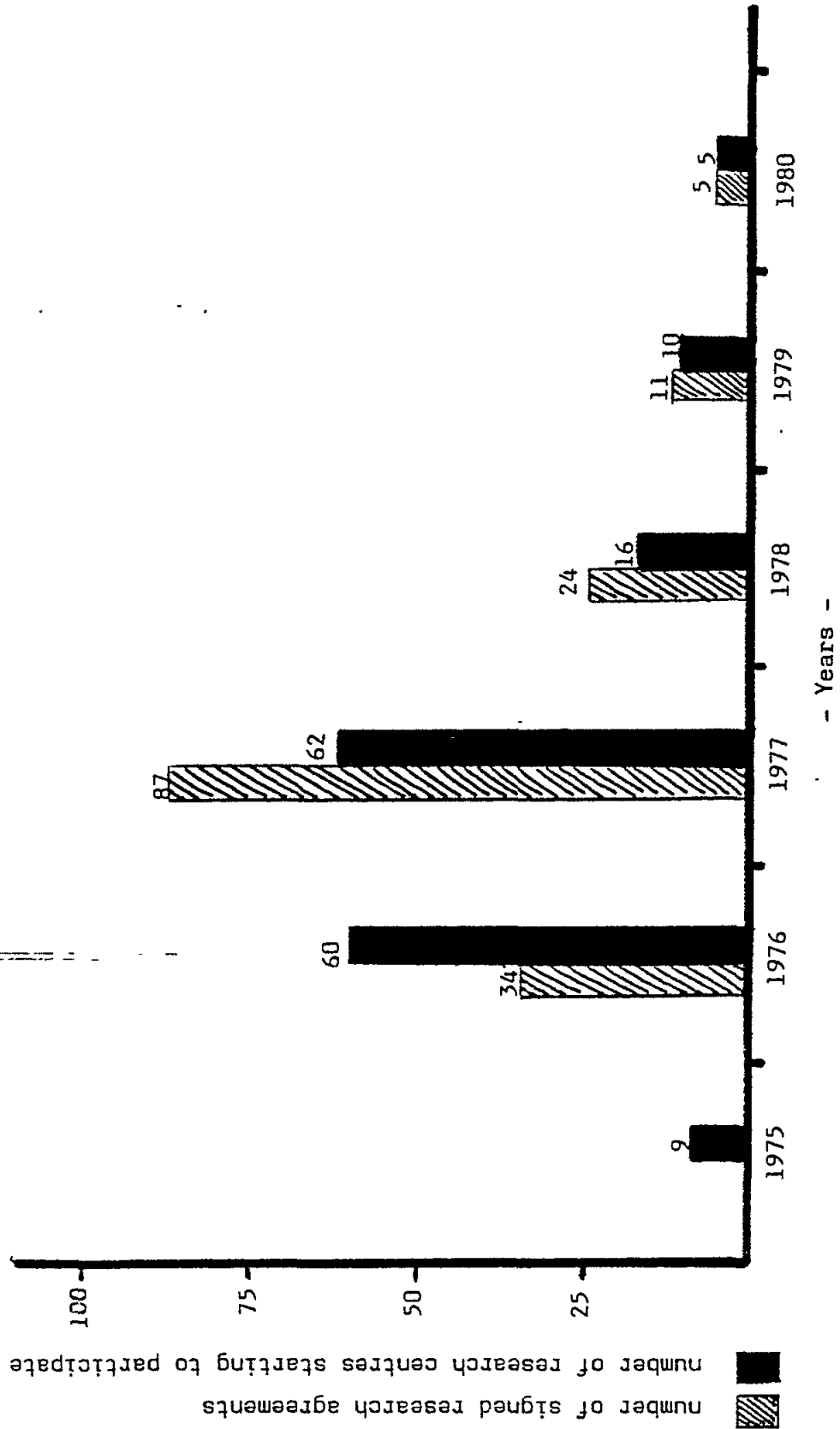


Figure 2 : Number of signed research agreements with designated MED POL participants and the number of research centres starting to participate in various pilot projects. For details see Table 1.

Table 1. National research centres participating in MED POL-related projects and the status of their participation (as at October 1980).

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>ALGERIE</u>				
Centre de Recherches océanographiques et des Pêches Jetée Nord B.P. 90 ALGER tel: 62 73 11, 62 66 59 Directeur: Dr. Rachid Semroud	Med II	M. A. Aissi	signed 18.10.76	Sept. 1976
	Med III		negotiating	
	Med V	Dr. R. Semroud	signed 18.10.76	Jan 1977
	Med VII	Dr. A. Fatila	signed 22.5.80	May 1980
	Med XI	intercalib. for Med II		
	RAC V	Dr. R. Semroud	signed 23.5.77	
<u>CYPRUS</u>				
Fisheries Department Ministry of Agriculture and Natural Resources Tagmatarchou Poulou 5-7 NICOSIA tel: 021-403279 Mr. Andreas Demetropoulos Fisheries Officer	Med I	Mr. A. Demetropoulos	signed 23.4.77	May 1976
	Med II	Mr. A. Demetropoulos	signed 11.8.76	Sept. 1976
	Med III	Mr. A. Demetropoulos	signed 20.12.77	
	Med IV		negotiating	
	Med V	Mr. A. Demetropoulos	signed 11.8.1976	March 1976
	Med VI	Mr. A. Demetropoulos	signed 29.6.77	Nov. 1976
	Med XI	intercalib. for Med II		

Table 1 (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>EEC</u>				
Centre Commun de Recherche (C.C.R.) d'Ispra Commission des Communautés Européennes Rue de la Loi 200 B-1049 Bruxelles BELGIQUE	Med			
tel: 735.00.40 / 735.80.40				
Directeur Général: M. S. Villani				
(M. M. Carpentier Directeur Général, Chef du Service Environnement et de la Protection des Consommateurs Commission des Communautés Européennes Rue de la Loi 200 B-1049 Bruxelles BELGIQUE)				
<u>EGYPT</u>				
Institute of Oceanography and Fisheries Mediterranean Branch Kayet Bey ALEXANDRIA	Med I	Dr. S.D. Wahby	signed 20.3.77	Jan. 1977
tel: 801-553, 801-449	Med II	Dr. H.I. Emara	signed 23.1.77	Dec. 1976
Deputy Director: Dr. Talaat Hashem				
	Med III	Dr. M. M. Abbas Aly	signed 23.1.77	Dec. 1976
	Med IV	Dr. H.H. Saleh	signed 23.1.77	Dec. 1976
	Med V	Dr. M. L. El-Hehyawi	signed 23.1.77	Dec. 1976
	Med VI	Dr. M.A. Gerges	signed 20.3.77	May 1976
	Med XI	intercalib. for Med II		
		intercalib. for Med III		

Table 1 (Cont.)

EGYPT (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
	RAC VI	Dr. M.A. Gerges	signed 14.11.77	
Centre for Post-graduate Studies and Research Alexandria University Horreya Avenue - Shatby P.O. Box 832 ALEXANDRIA tel: 25007	Med I	Dr. I.S. El-Kholy Dr. S. El-Adawy	negotiating	
	Med II	Prof.Dr. I.El-Sokkary	signed 14.5.79	March 1979
Director: Prof. A. R. El-Sadr	Med III	Prof.Dr.A.H. El-Sebae	signed 14.5.79	March 1979
	Med IV	Prof.Dr. A.Ezzat	signed 14.5.79	March 1979
	Med V	Prof.Dr. Y.Halim	signed 14.5.79	March 1979
	Med VI	Prof.Dr.S.H. Sharaf-El-Din	negotiating	
	Med VII	Prof.Dr.F.M. El-Sharkawi	signed 28.9.78	May 1978
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
<u>FRANCE</u>				
Laboratoire de Chimie appliquée à l'expertise Faculté de Pharmacie, Université de Montpellier I Avenue Charles Flshault B.P. 1103 34060 MONTPELLIER, CEDEX tel: (67) 635582	Med I	Dr. C. Causse	signed 15.5.77	Nov 1975
	Med III	Prof. R. Mestres	signed 22.12.76	Dec. 1976
	Med XI	intercalib. for Med III		
Directeur: Prof. Robert Mestres				

Table 1 (Cont.)

FRANCE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Laboratoire central d'Hygiène alimentaire Direction des Services vétérinaires Ministère de l'Agriculture 43 Rue de Dantzig 75015 PARIS	Med II	M. G. Cumont	signed 14.4.77	March 1977
tel: 5318210 Directeur: Dr. Jean Pantaléon	Med XI	intercalib. for Med II		
Laboratoire d'Océanographie physique Museum d'Histoire naturelle 43-45 Rue Cuvier 75231 PARIS, CEDEX	Med VI	Prof. B. Saint-Guily	negotiating	
tel: 707.85.44, 707.19.00 Directeur: Prof. Henri Lacombe	Med VII	Dr. A. Fruchart	signed 2.6.78	June 1978
Centre d'Etudes et de Recherches de Biologie et d'Océanographie médicale (CERBOM) Parc de la Cote Avenue Jean Lorrain 1 06300 NICE				
tel: 893292-897249 Directeur: Dr. Maurice Aubert	Med I		negotiating	
Station zoologique de Villefranche-sur-Mer Station marine de Villefranche-sur-Mer La Darse 06230 VILLEFRANCHE-SUR-MER	Med VI		negotiating	
tel: (93) 807165,808112 Directeur: Prof. Paul Bougis				

Table 1 (Cont.)

FRANCE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Laboratoire de Chimie analytique et Toxicologie Faculté de Pharmacie Université de Montpellier I Avenue Charles Flahault B.P. 1103 MONTPELLIER, CEDEX	Med II	Prof. S. Brun	signed 28.12.76	Dec. 1976
tel: (67) 635432				
Directeur: Prof. Suzanne Brun				
Institut français du Pétrole 1 et 4 Avenue de Bois Préau 92502 RUEIL MALMAISON	Med I	M. P. Renault	signed 29.3.77	Jan. 1977
tel: 967.11.10, 794.02.14				
Directeur: Dr. Jean-Claude Balaceanu				
Institut scientifique et technique des Pêches maritimes (ISTPM) Rue de l'Île d'Yeu B.P. 1049 44037 NANTES CEDEX	Med I		negotiating	
tel: (40) 749981	Med II	Dr. Y. Thibaud	signed 7.9.76	Sept. 1976
Directeur: Dr. Claude Maurin	Med III	Dr. C. Alzieu	signed 7.9.76	Sept. 1976
(I.S.I.P.M. Centre de Sète 1 Rue Jean Vilar 34200 SETE	Med VII	Dr. Y. Fauvel	signed 13.11.78	Jan. 1979
tel: (67) 742299	Med XI	intercalib. for Med II		
Chef du Centre: Dr. Yves Fauvel		intercalib. for Med III		
Laboratoire Arago 66650 BANYULS-SUR-MER	Med VI	Dr. J. Soyer	signed 3.5.77	Jan. 1977
tel: 383009, 383119, 383040				
Directeur: Dr. Jacques Soyer				

Table 1 (Cont.)

FRANCE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Station marine d'Endoume et Centre d'Océanographie Rue de la Batterie-des-Lions 13007 MARSEILLE	Med IV	Dr. G. Bellan	signed 13.12.76	Oct. 1976
tel: 521294	Med V	(a)Dr. F. Blanc et Dr. M. Leveau	(a) signed 13.12.76	(a)Jan.1977
Directeur: Prof. Jean-Marie Pérès		(b)Dr.D.Bellan- Santini	(b)signed 13.12.76	(b)Jan. 1977
	RAC IV	Prof.J.-M. Pérès	signed 20.5.77	
Laboratoire de Physique et Chimie marines Université Pierre et Marie Curie (Paris VI) 4 Place Jussieu 75230 PARIS, CEDEX 05	Med I		negotiating	
tel: 332525 - 4879				
Directeur: Prof. Alexandre Ivanoff				
Centre des faibles Radioactivités Laboratoire mixte CNRS-CEA B.P. No. 1 91190 GIF-SUR-YVETTE	Med VIII	Dr. R. Chesselet	signed 6.9.77	Oct. 1977
tel: 907.78.28				
Directeur: Dr. Jacques Labeyrie				
<u>GREECE</u>				
Institute of Oceanographic and Fisheries Research Ministry of Co-ordination Agios Kosmas-Ellinikon ATHENS	Med I	Dr. E. Verykokakis	signed 18.5.77	Jan 1977
tel: 9820211	Med II	Dr. F. Voutsinou	signed 20.4.77	Dec. 1976
Director General: Dr. Constantine E. Vamvakas	Med III	Dr. J. Satsmadjis	signed 1.12.77	Dec. 1976

Table 1 (Cont.)

GREECE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
	Med V	(a)Dr. C. Bogdanos	(a)signed 20.4.77	(a) Dec.1976
		(b)Dr. C.E. Vamvakas	(b)signed 27.4.77	(b) Feb.1977
	Med VI	Dr. E. Papageorgiou	signed 18.5.77	Jan 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Zoological Laboratory and Museum University of Athens Panepistimiopolis-Kouponia ATHENS 621 tel: 743.217 Director: Prof.Dr.Vassili Kiortsis	Med IV	Dr.M.Moraitou Apostolopoulou	signed 27.4.77	April 1977
Laboratory of Zoology Faculty of Science University of Thessaloniki THESSALONIKI tel: 2392.2449 Director: Prof. Dr. Marios E. Kattoulas	Med IV		negotiating	
	Med V	a)Prof.Dr.M.E. Kattoulas	signed 8.9.77	Dec. 1976
		b)Prof.Dr.M.E. Kattoulas	signed 8.9.77	Dec. 1976
Radioanalytical Laboratory Radiochemical and Nuclear Analysis group Department of Chemistry Nuclear Research Centre "Demokritos" Aghia Paraskevi Attikis, ATHENS tel: 6513111 ext. 336-335 Head of the Laboratory: Dr. Apostolos P. Grimanis	Med I	Dr. N. Mimicos	signed 15.3.78	March 1977
	Med II	Dr. A.P. Grimanis and Dr. C. Papadopoulos	signed 20.4.77	Oct. 1975
	Med VIII	Dr. C. Papadopoulos	signed 20.6.77	July 1977
	Med XI	intercalib. for Med II		

Table 1 (Cont.)

GREECE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
General Chemical State Laboratory Division of Environmental Pollution Control Ministry of Economic Affairs 16 A. Isocha Street 602 ATHENS	Med II	Dr. D. G. Marketos	signed 28.4.77	June 1976
tel: 6428211				
Head of Division Dr. Demis G. Marketos				
Department of Food Hygiene Faculty of Veterinary Medicine Aristotelian University of Thessaloniki THESSALONIKI	Med II	Dr. P. G Karaioannoglou	signed 9.8.77	March 1977
	Med III	Prof.Dr. S.D. Kilikidis	signed 9.8.77	March 1977
tel: 31.2392.2305				
Director: Prof. Dr. Achilles G. Panetsos	Med VII	Prof.Dr. A.J. Mantis	signed 21.10.77	February 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Laboratory of Hygiene Medical School Aristotle University of Thessaloniki THESSALONIKI	Med III		negotiating	
	Med VII	Prof.Dr. T. Edipides	signed 25.7.77	July 1977
tel: 2392-2339				
Director: Prof. Dr. Theodore Edipides	Med XI	intercalib. for Med III		
Laboratory of Analytical Chemistry Faculty of Physics and Mathematics University of Thessaloniki THESSALONIKI	Med II	Prof.Dr. G. Vasilikiotis	signed 4.7.77	Feb. 1977
	Med III	Prof.Dr. G. Vasilikiotis	signed 4.7.77	Feb. 1977
tel: (031) 2392-2482				
Director: Prof. Dr. George Vasilikiotis	Med XI	intercalib. for Med II		
		intercalib. for Med III		

Table 1 (Cont.)

GREECE (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Benaki Institute of Phythopathology 8 Delta Street ATHENS	Med III	Dr. N. Adam	signed 21.5.77	March 1977
tel: 8012376	Med IV	Dr. R. Fytizas	signed 21.5.77	March 1977
Director: Dr. Dimitrios S. Vassilopoulos	Med XI	intercalib. for Med III		
Laboratory of Organic Chemistry Aristotle University of Thessaloniki THESSALONIKI	Med I	Prof. N.E. Alexandrou	signed 22.3.78	Aug. 1977
tel: 2392.2497				
Director: Prof. Nicholas E. Alexandrou				
Environmental Pollution Control Project Ministry of Social Services 147, 28th October Street ATHENS 814	Med VII	Prof. J. Papadakis Dr. S. Sotiracopoulou Dr. M. Thalassinou- Izatzanis	signed 15.5.78	Nov. 1976
tel: 850111, 850476				
Project Manager: Dr. Gregory Markantonatos				
Department of Hydrology and Hydraulic Works National Technical University 42, 28th October Avenue ATHENS 147	Med VI		negotiating	
tel: 3607.603/3691.265				
Director: Prof. Dr. Themis S. Xanthopoulos				
Laboratory of Hydraulics and Hydraulic Works Department of Hydraulics School of Technology Aristotle University of Thessaloniki THESSALONIKI	Med VI	Prof. J. Ganoulis	signed 14.4.79	March 1979
Tel: 591.2697/96				
Director: Prof. J. Ganoulis				

Table 1 (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>ISRAEL</u>				
Israel Oceanographic and Limnological Research Ltd. Tel Shikmona P.O. Box 1793 HAIFA	Med I	Dr. O.H. Oren	signed 26.10.77	May 1976
tel: (04)515202	Med II	Dr. O.H. Oren	signed 14.9.76	Oct. 1975
Director: Mr. Yohay Ben-Nun	Med III	Dr.R. Ravid	signed 14.9.76	Oct. 1975
	Med IV	Dr. T. Shimon	signed 21.9.76	Sept. 1976
	Med VI	Dr. A. Hecht	signed 3.11.77	May 1976
	Med VIII	Dr. O. H. Oren	signed 13.8.77	July 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Environmental Health Laboratory Hadassah Medical School Hebrew University P.O. Box 1172 JERUSALEM	Med VII	Prof. H.I. Shuval	signed 16.10.77	Nov. 1977
tel: 233-821				
Director: Prof. H. I. Shuval				
Environmental and Water Resources Engineering Division Technion - Israel Institute of Technology Technion City HAIFA 32000	Med VII	Dr. N. Buras Prof. Y. Kott	signed 19.7.78	July 1978
tel: (04) 227.111 ext. 2359				
Head: Prof. Jacob Bear				

Table 1 (Cont.)

ISRAEL (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<p>The Dr. A. Felix Public Health Laboratory Ministry of Health Abu Kebir, P.O. Box 8255 TEL-AVIV</p> <p>tel: (03)821.777</p> <p>Director: Dr. Yonah Yoshpe-Purer (Mrs)</p>	Med VII	Dr. Y. Yoshpe-Purer	signed 16.6.78	June 1978
<p>Public Health Laboratory Public Health Department Ministry of Health P.O. Box 9526 HAIFA</p> <p>tel: (04)536201</p> <p>Director: Dr. Rachel Seligmann (Mrs)</p>	Med VII	Dr. R. Seligmann	signed 21.6.78	June 1978
<p>Biological Research Laboratories Institute of Evolution University of Haifa Mount Carmel 31999 HAIFA</p> <p>tel: (04) 240448</p> <p>Director: Prof. Eviatar Nevo</p>	Med IV	Prof. E. Nevo	signed 15.3.78	Jan. 1978
<p>Department of Zoology Tel Aviv University RAMAT AVIV</p> <p>tel: 033-426262 Ext. 812</p> <p>Head: Prof. Z. Yaron</p>	Med IV	Prof. Z. Yaron	signed 12.6.78	April 1978

Table 1 (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>ITALY</u>				
Institute of Hydrobiology and Fish Culture University of Messina Via dei Verdi 75 98100 MESSINA tel: 710617 Director: Prof. Sebastiano Genovese	Med VII	Prof. S. Genovese	signed 24.3.78	Jan 1978
Laboratory of Hydrobiology and Fish Culture Institute of Comparative Anatomy University of Siena Via delle Cerchia, 3 53100 SIENA tel: (0577) 288428 Director: Prof. Dr. Aristeo Renzoni	Med II	Prof. Dr. A. Renzoni	signed 1.9.76	Sept. 1976
	Med III	Prof. Dr. A. Renzoni	signed 8.5.78	March 1978
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Observatory for Experimental Geophysics - Marine Laboratory P. O. Box 2011 34016 TRIESTE tel: (040) 730276 Director: Dr. Ezio Accerboni	Med VI	Dr. E. Accerboni	cleared 30.8.78	June 1977
Institute of Marine Biology-CNR Riva Sette Martiri 1364/A 30122 VENICE tel: (041)707622 Director: Prof. Dr. Bruno Battaglia	Med III	Dr. V.U. Fossato	signed 27.7.77	July 1976
	Med IV	Dr. L. Dalla Venezia	signed 24.5.78	July 1978
	Med XI	intercalib. for Med III		

Table 1 (Cont.)

ITALY (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Marine Contamination Laboratory-CNEN 19030 FIASCHERINGO (La Spezia)	Med II	Dr. M. Bernhard	signed 11.8.77	Dec. 1975
tel: (0187) 966496/7	Med XI	intercalib. for Med II		
Director: Prof. P. Scoppa				
Centre for Study and Research in Sanitary Engineering Institute of Water Supply and Wastes Disposal University of Naples Via Claudio 21 80125 NAPLES	Med VII	Prof. L. Mendia	signed 28.5.79	1977
tel: 620344				
Director: Prof. Luigi Mendia				
and				
Zoological Station of Naples Villa Comunale 80125 NAPLES				
tel: 406222/406347				
Director: Prof. Alberto Monroy				
Centre for Radiochemistry and Activation Analysis - CNR Institute of General Chemistry University of Pavia 12 Viale Taramelli 27100 PAVIA	Med II	Prof. E. Orvini	signed 16.9.76	Sept. 1976
tel: (0382) 31-200/24-605	Med XI	intercalib. for Med II		
Director: Dr. Mario A. Rollier				
Group for Oceanographic Research - Genova Institute of Hydrobiology and Fish Culture University of Genova Via Balbi 5 12126 GENOVA	Med II	Prof. R. Capelli	signed 3.2.77	Dec. 1975
tel: (010) 280-955	Med IV	Dr. A. Viarengo	signed 2.6.78	June 1978
Chairman: Prof. Norberto Della Croce	Med VI	Prof. I. Dagnino	signed 12.8.77	May 1977
	Med XI	intercalib. for Med II		

Table 1 (Cont.)

ITALY (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Institute of Hygiene University of Trieste Via dell'Istria 65/1 34137 TRIESTE tel: (040) 728.303 Director: Prof. Luigi Majori	Med VII	Prof. L. Majori	signed 6.2.78	Feb. 1978
Istituto Superiore di Sanità Viale Regina Elena 299 00161 ROME tel: (06) 4990 Director: Prof. Francesco Pocchiari	Med VII RAC VII	Prof. L. Villa Prof. F. Pocchiari	signed 28.10.77 signed 15.6.77	May 1977
Institute for Water Research - CNR Via Reno 1 00198 ROME tel: (06) 84-48-741 Director: Prof. Roberto Passino	Med VI	Dr. M. Benedini	signed 30.10.78	Dec. 1976
Station for Marine Biology Institute of Zoology and Comparative Anatomy University of Messina Via dei Verdi 75 98100 MESSINA tel: 81-27-21 Director: Prof. Arturo Bolognari	Med II Med XI	Dr. L. Mojo intercalib. for Med II	signed 23.11.76	Dec. 1976 1975
Institute of Hygiene University of Genova Via A. Pastore 1 16132 GENOVA tel: 515052, 515013 Director: Prof. Fernando L. Petrilli	Med IV Med VII	Prof. S. De Flora Prof. S. De Flora	negotiating signed 3.1.78	1975

Table 1 (Cont.)

ITALY (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Institute of General and Inorganic Chemistry Faculty of Industrial Chemistry University of Venice Calle Larga S. Marta 2137 30123 VENICE tel: 706324 Director: Prof. L. Catalini	Med I	Prof. A.A. Orio	signed 29.9.78	
Institute of Organic Chemistry University of Genova Palazzo delle Scienze Corso Europa 16132 GENOVA tel: (010) 515.059 Director: Prof. G. Leandri	Med I	Prof. C. Dell'Erba	negotiating	
Departmental Institute of Chemistry and Industrial Chemistry University of Catania Viale A. Doria 8 95125 CATANIA tel: 330533 Director: Prof. S. Musumeci	Med I	Prof. S. Musumeci	negotiating	
<u>LIBAN</u>				
Centre de Recherche marine Conseil national de la Recherche scientifique B.P. 11-8281 BEYROUTH tel: 934763 Directeur: Dr. H. H. Kouyoumjian	Med I	Mr. R. Haber	signed 19.5.77	first half 1977
	Med II	Dr. H.H. Kouyoumjian	signed 19.5.77	
	Med III	Dr. H.H. Kouyoumjian	signed 19.5.77	
	Med IV		negotiating	
	Med V		negotiating	

Table 1 (Cont.)

LIBAN (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
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	Med VII	Dr. H.H. Kouyoumjian	signed 28.11.77	August 1977
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	Med XI	intercalib. for Med II		
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		intercalib. for Med III		
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MALTA

The University of Malta
MSIDA

tel: 36.450

Rector Magnificus
Dr. D. H. Walwyn-James

	Med I	Dr. M. Sammut	signed 23.3.77	July 1976
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	Med II	Dr. A. Storace	signed 30.7.76	Sept. 1976
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	Med III	Dr. A. Serracino-Inglott	signed 30.7.76	Sept. 1976
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	Med IV	Mr. V. Axiak	signed 30.7.76	July 1976
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	Med VI	Dr. D.A. Havard	signed 22.3.77	Feb. 1976
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	Med VIII	Dr. J. V. Bannister	signed 26.5.77	May 1977
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	Med XI	intercalib. for Med II		
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		intercalib. for Med III		
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	RAC I	Dr. M. Sammut	signed 15.11.77	
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Public Health Laboratory
Department of Health
15 Merchants Street
VALLETTA

tel: 24071

Chief Medical Officer:
Dr. A. Grech

	Med VII	Dr. L.J. Spiteri	signed 13.7.77	Aug. 1977
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Table 1 (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>MAROC</u>				
Institut scientifique des Peches maritimes Rue de Tiznit B.P. 21 CASABLANCA tel: 678.11 Directeur: Dr. Mohamed Azzou	Med II	Mme H. Idrissi	signed 17.5.77	March 1977
	Med III	Mme H. Idrissi	signed 17.5.77	March 1977
	Med IV		signed 23.1.78	The 1a partic
	Med VII	Dr. E. Gmira	signed 23.1.80	January 1980
	Med XI	intercalib. for Med II		
Faculté des Sciences Université Mohamed V Avenue Ibn Batouta S.P. 1014 RABAT tel: 718.34 Doyen: Prof. Dr. Drissi Khalil	Med I		negotiating	
	Med II		negotiating	
	Med III		negotiating	
	Med V		negotiating	
	Med VI	Prof. S. El-Kebir	cleared 30.8.79	
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Institut national d'Hygiène Ministère de la Santé Publique 335 Avenue Mohammed V RABAT tel: Directeur: Prof. Naoureddine Benmansour	Med II		negotiating	
	Med III		negotiating	
	Med IV		negotiating	
	Med V		negotiating	

Table 1 (Cont.)

MAROC (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
	Med VII	Prof. N. Benmansour	signed 2.10.79	June 1979
	Med XI	intercalib. for Med II		
		intercalib. for Med III		

PRINCIPAUTE DE MONACO

Centre scientifique de Monaco	Med VI	Dr. A. Vatrican	cleared 28.4.77	April 1977
Administration:- 16 Boulevard de Suisse MONTE CARLO	Med VII	Dr. R. Vaissière	signed 24.10.77	1975
Laboratoires:- Avenue Saint-Martin MONACO-VILLE				
tel: (93)302154/301514				
Président du Conseil d'Administration: S.E.M. César C. Solamito				

SPAIN

Instituto de Investigaciones Pesqueras Paseo Nacional, s/n BARCELONA 3	Med I	Dr. M. Calderon	signed 9.5.77	Jan. 1975
tel: 31 06 450	Med II	Dr. A. Ballester	signed 22.7.76	Jan. 1976
Director: Dr. Buenaventura Andreu	Med III	Dr. A. Ballester	signed 28.7.76	Jan. 1976
	Med IV	Dr. R. Establier	signed 28.7.76	Jan. 1976
	Med V		negotiating	
	Med VI	Dr. A. Cruzado	signed 2.3.77	March 1976
	Med VIII	Dr. A. Ballester	signed 26.7.77	August 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		

Table 1 (Cont.)

SPAIN (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Laboratorio Oceanografico del Mar Menor	Med I	Dr.F. Faraco	signed 25.4.78	May 1978
Instituto Espanol de Oceanografia Magallanes s/n	Med II	Dr. J. Guerrero	signed 1.10.78	May 1978
P.O. Box 22 SAN PEDRO DEL PINATAR (Murcia)	Med III		negotiating	
tel: 57 05 29				
Director: Dr. Argeo R. de Leon	Med IV	Dr. J. Ros	signed 1.4.79	May 1978
	Med VI		negotiating	
	Med VII		negotiating	
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Laboratorio Oceanografico de Baleares	Med I		negotiating	
Instituto Espanol de Oceanografia P.O. Box 291	Med V		negotiating	
PALMA DE MALLORCA				
tel: 230737				
Director: Dr. Miguel Duran				
Laboratorio Oceanografico de Malaga	Med VI		negotiating	
Instituto Espanol de Oceanografia Paseo de la Farola 27				
MALAGA				
tel: 212810				
Director: Mr. Natalio Cano				
Jefatura Provincial de Sanidad Avenida Maria Cristina, s/n	Med VII	Dr. R. Mujeriego	signed 25.8.77	April 1977
TARRAGONA				
tel: (977) 202645, 201150, 201522				
Director: Dr. Alfredo Bardaji				

Table 1 (Cont.)

SPAIN (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Jefatura Provincial de Sanidad Puente del Carmen 30 MALAGA tel: (952) 216590, 227806 Director: Dr. Marcelo Arce	Med VII	Dr. R. Mujeriego	signed 25.8.77	April 1977
Institute of Bio-organic Chemistry High Council of Scientific Investigations Calle Jorge Girona Salgado s/n BARCELONA 34 tel: Director:	Med I	Dr. J. Albaiges	negotiating	
Institute of Chemistry of Sarria Calle Instituto Chimico de Sarria s/n BARCELONA 17 tel: 2038900 Director: Dr. Miguel Montagut	Med II Med III Med XI	Dr. J. Obiols Dr. M. Gassiot intercalib. for Med II	signed 7.8.79 signed 7.8.79	Sept. 1979 Sept. 1979
		intercalib. for Med III		
<u>SYRIA</u>				
Centre for Marine Research of Latakia Supreme Council of Sciences Aboul-Alaa Al-Maari Avenue P.O. Box 4762 DAMASCUS tel: 339754 President:	Med I Med II Med III		negotiating negotiating negotiating	
	Med XI	intercalib. for Med II intercalib. for Med III		

Table 1 (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
<u>TUNISIE</u>				
Institut national scientifique et technique d'Océanographie et de Peche SALAMBO	Med I	M. M. H. A. Salem	cleared 2.4.77	June 1977
tel: 275.632	Med II	M. M. H. A. Salem	signed 5.11.76	Jan. 1977
Directeur: M. M. Hadj Ali Salem	Med III	M. M. H. A. Salem	signed 5.11.76	Jan. 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Laboratoire Central Ministère de l'Industrie des Mines et de l'Energie 23, Rue Jeweher Lel Nuhru (Ex. Rue Dr. Braqushaye) Montfleury - TUNIS	Med I	Mr. M. Berkhaies	signed 4.6.80	August 1980
tel: 494.252	Med IV		negotiating	
Directeur: Dr. Ridha Bouhalila	Med V		negotiating	
	Med VI	Mr. S. Rehalem	signed 4.6.80	August 1980
Institut Pasteur 13 Place Pasteur TUNIS	Med VII	Prof. A. Chadli Dr. S. Jakov Dr. C. Capapé	signed 9.5.79	May 1979
tel:				
Directeur: Prof. A. Chadli				
<u>TURKEY</u>				
Hydrobiological Research Institute Faculty of Science University of Istanbul Rumelihisari ISTANBUL	Med II	Mr. I. Artuz	signed 15.4.77	Dec. 1976
tel: 65 15 11	Med III	Mr. I. Artuz	signed 15.4.77	Dec. 1976
Director: Prof. Dr. Lutfi Biran				

Table 1 (Cont.)

TURKEY (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
	IV	Artuz	15.4.77	
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Marine Science Department Middle East Technical University P.K. 28 ERDEMLI-ICEL	Med I	Prof.Dr. T.I. Balkas	signed 28.2.77	June 1976
tel: Erdemli 342	Med II	Prof.Dr. T.I. Balkas	signed 3.9.76	Sept. 1976
Chairman: Prof. Dr. Turgut I. Balkas	Med III	Dr. T. Soylemez Dr. I. Salihoglu	signed 3.9.76	Sept. 1976
	Med VI	Dr. U. Unluata	signed 10.5.77	July 1976
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
	RAC III	Prof.Dr. T.I. Balkas	signed 26.4.77	
Department of Biological Oceanography and Institute of Hydrobiology Faculty of Science, Ege University Mithatpasha Cad. No. 564 BORNOVA/IZMIR	Med II	Dr. H. Uysal	signed 14.4.77	March 1977
tel: 180110	Med IV	Dr. H. Uysal	signed 14.4.77	Feb. 1977
Director: Prof. Remzi Geldiay	Med V	Dr. A. Kocatas	signed 14.4.77	Jan. 1977
	Med XI	intercalib. for Med II		

Table 1 (Cont.)

TURKEY (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Department of Water Pollution Control General Directorate of Fisheries Su Urunleri Genel Mudurlugu Olgunlar Sokak 10 ANKARA	Med II	Mr. H. Kulan	cleared 4.3.77	March 1977
tel:	Med III	Mr. N. Nazli	cleared 4.3.77	March 1977
Head: Miss Ulku Merter	Med IV	Mr. C. Cetin	cleared 4.3.77	
	Med V	Mr. E. Cerig	cleared 4.3.77	
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
Department of Environmental Engineering Faculty of Engineering Middle East Technical University ANKARA	Med VII	Prof. Dr. S.E. Ulug	signed 17.10.77	July 1977
tel: 237100				
Chairman Prof. Dr. S. Erol Ulug				
<u>YUGOSLAVIA</u>				
Laboratory for Trace Element Analyses	Med I	Dr. D. Juretic	signed 14.5.80	May 1980
Department of Physics and Mathematics	Med II	Prof. Dr. V. Valkovic and Dr. A. Ljubicic	signed 14.9.75	March 1976
Faculty of Industrial Pedagogy University of Rijeka Omladinska 14 RIJEKA	Med XI	intercalib. for Med II		
tel: 39-488, 39-983				
Head: Prof. Tomasic				

Table 1 (Cont.)

YUGOSLAVIA (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Institute for Oceanography and Fisheries Rt Marjana P.O. Box 114 SPLIT Tel: 46.682 Director: Mr. Rade Stijelja	Med I		negotiating	
	Med II	Dr. L. Stojanoski	signed 10.2.77	March 1977
	Med III	Dr. T. Vucetic	signed 10.2.77	March 1977
	Med IV	Dr. R. Muzinic	signed 10.2.77	March 1977
	Med V	Dr. T. Pucher-Petkovic	signed 30.6.77	April 1977
	Med VI	Dr. M. Zore-Armanda	signed 3.3.77.	Jan. 1977
	Med VII	Dr. S. Sobot	signed 7.10.77	Nov. 1976
	Med XI	intercalib. for Med II		
		intercalib. for Med III		
The Biological Institute Ivrđava Sv. Ivana P. O. Box 39 DUBROVNIK tel: (050) 27-937 Director: Prof. Dr. Tomo Gamulin	Med III	Mr. D. Vilicic	signed 13.10.76	Sept. 1976
	Med IV	Dr. F. Krsinic	signed 20.8.77	Nov. 1976
	Med V	Dr. A. Benovic	signed 27.1.77	Nov. 1976
	Med XI	intercalib. for Med III		

Table 1 (Cont.)

YUGOSLAVIA (Cont.)

PARTICIPATING INSTITUTION	PROJECT	PRINCIPAL INVESTIGATOR	STATUS OF AGREEMENT	STARTING DATE OF WORK
Centre for Marine Research "Rudjer Boskovic" Institute P.O. Box 1016, Bijenicka 54 ZAGREB tel: (041) 38.541/424.355 Director General: Mr. Vojno Kundic Director of Rovinj Centre: Dr. Marko Branica	Med I	Dr. V. Pravdic	signed 3.3.77	Jan. 1977
	Med II	Dr. M. Branica	signed 24.9.76	Sept. 1976
	Med III	Mr. N. Smodlaka	signed 24.9.76	June 1976
	Med IV	Dr. B. Kurelec	signed 24.9.76	June 1976
	Med V	Dr. D. Zavodnik	signed 24.9.76	July 1976
	Med VI	Dr. Lj. Jeftic	signed 18.4.79	Jan. 1977
	Med VII	Ms. D. Fuks	signed 4.8.77	June 1976
Marine Biological Station Institute of Biology University of Ljubljana P.O. Box 16 PORTOROZ tel: (066) 73-073 Director: Prof. Dr. Miroslav Zei (Director General:- Prof. Matija Gogala Institute of Biology University of Ljubljana P.O. Box 141, LJUBLJANA tel: (061) 22121)	Med XI	intercalib. for Med II		
	Med XI	intercalib. for Med III		
	RAC II	Dr. M. Branica	signed 21.4.77	
	Med II	Prof.Dr. S. Gomiscek	signed 23.8.76	June 1976
	Med III	Dr. J. Cencelj	signed 23.8.76	June 1976
	Med V	Dr. J. Stirn	signed 23.8.76	Sept. 1976
	Med VII	Ms. M. Lenarcic	signed 2.8.77	October 1977
	Med XI	intercalib. for Med II		
		intercalib. for Med III		

Table 2. Distribution of research centres participating in MED POL-related projects and (in brackets) the number of signed research agreements (as at 1 October 1980).

COUNTRY	MED I	MED II	MED III	MED IV	MED V	MED VI	MED VII	MED VIII	RAC	TOTAL*
ALGERIA	-	1 (1)	1	-	1 (1)	-	1 (1)	-	1 (1)	1 (4)
CYPRUS	1 (1)	1 (1)	1 (1)	1	1 (1)	1 (1)	-	-	-	1 (5)
EEC	-	-	-	-	-	-	-	-	-	1
EGYPT	2 (1)	2 (2)	2 (2)	2 (2)	2 (2)	2 (1)	1 (1)	-	1 (1)	2 (12)
FRANCE	5 (2)	3 (3)	2 (2)	1 (1)	1 (2)	3 (1)	2 (2)	1 (1)	1 (1)	12 (15)
GREECE	3 (3)	5 (5)	5 (4)	3 (2)	3 (4)	3 (2)	3 (3)	1 (1)	-	13 (24)
ISRAEL	1 (1)	1 (1)	1 (1)	3 (3)	-	1 (1)	4 (4)	1 (1)	-	7 (12)
ITALY	3 (1)	5 (5)	2 (2)	3 (2)	-	3 (2)	7 (6)	-	1 (1)	17 (19)
LEBANON	1 (1)	1 (1)	1 (1)	1	1	-	1 (1)	-	-	1 (4)
MALTA	1 (1)	1 (1)	1 (1)	1 (1)	-	1 (1)	1 (1)	1 (1)	1 (1)	2 (8)
MONACO	-	-	-	-	-	1	1 (1)	-	-	1 (1)
MOROCCO	1	3 (1)	3 (1)	3 (1)	2	1	2 (2)	-	-	3 (5)
SPAIN	4 (2)	3 (3)	3 (2)	2 (2)	2	3 (1)	3 (2)	1 (1)	-	8 (13)
SYRIA	1	1	1	-	-	-	-	-	-	1
TUNISIA	1 (1)	1 (1)	1 (1)	1	1	1 (1)	1 (1)	-	-	3 (5)
TURKEY	1 (1)	4 (3)	3 (2)	3 (2)	2 (1)	1 (1)	1 (1)	-	1 (1)	5 (12)
YUGOSLAVIA	3 (2)	4 (4)	4 (4)	3 (3)	4 (4)	2 (2)	3 (3)	-	1 (1)	5 (23)
TOTAL	28 (17)	36 (32)	31 (24)	27 (19)	20 (15)	23 (14)	31 (29)	5 (5)	7 (7)	83*(162)

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

Table 3. List of UNEP projects relevant to MED POL - PHASE I. For details see sections III, IV and V of this document. Projects marked with an asterisk have been terminated.

Project Number	Project title	Co-operating agency or supporting organization
*FP/0503-73-03	Mediterranean Regional Marine Pollution Workshop	IOC
*FP/0501-74-07	Evaluation of Institutional Programmes in Marine Pollution Research and Monitoring	IOC
*FP/0501-74-08	Workshop on Coastal Pollution and Other Environmental Health Problems	WHO
*FP/1301-74-07	Intercalibration and Ligurian Sea Baseline Measurements (MED POL XI)	IAEA, IOC
*FP/0502-75-01	Regional Co-operation on Protection of Living Aquatic Resources from Pollution and Basis for Biological Monitoring (MED POL II - V)	FAO
FP/0503-75-01	Implementation of the Action Plan Adopted at the Barcelona Meeting	Internal
FP/0503-75-04	Intercalibration Measurements for Pilot Projects Under the Co-ordinated Pollution Monitoring and Research Programme (MED POL XI)	IAEA, IOC
*FP/0503-75-06	Pilot Projects on Oil Pollution and Coastal Circulation in the Mediterranean (MED POL I and VI)	IOC, WMO
FP/0503-75-07	Monitoring the Levels and Effects of Selected Pollutants in the Mediterranean Marine Organisms and Ecosystems (MED POL II - V)	FAO
*FP/0503-75-08	Coastal Water Quality Control in the Mediterranean (MED POL VII)	WHO
*FP/1106-75-06	Role of Sedimentation in the Pollution of the Mediterranean Sea: Assessment of Knowledge and Development of Guidelines for Environmental Impact Assessment (MED POL IX)	UNESCO
*FP/0503-76-01	Pollutants from Land-Based Sources in the Mediterranean (MED POL X)	ECE, FAO, IAEA, UNESCO, WHO, UNIDO

Table 3 (Cont.)

Project Number	Project title	Co-operating agency or supporting organization
FP/0503-76-03	Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters (MED POL I)	IOC, WMO
FP/0503-76-04	Problems of Coastal Transport of Pollution (MED POL VI)	IOC
FP/0503-76-05	Coastal Water Quality Control in the Mediterranean (MED POL VII)	WHO
FP/0503-76-09	Biogeochemical Studies of Selected Pollutants in the Open Waters of the Mediterranean (MED POL VIII)	IAEA, IOC
FP/0503-77-03	Programme Activity Centre for Regional Seas	Internal

Table 4. Major analytical instruments installed in Mediterranean States through MED POL (until September 1980).

State and city	AAS (VARIAN 1250 or 175)	GC (VARIAN 2750 or 3700)
Algeria (Alger)	1	-
Cyprus (Nicosia)	1	1
Egypt (Alexandria)	2	1
Greece (Athens)*	1	-
Israel (Haifa)	1	-
Lebanon (Beirut)	-	1
Malta (Msida)	1	1
Morocco (Casablanca)	1	1
Spain (Barcelona)	-	1
Tunisia (Salambo)	1	-
Turkey (Erdemli-Icel, Istanbul, Izmir)	2	2
Yugoslavia (Rovinj, Portoroz)	2	2
Total	13	10

*Installation not completed.

Table 5. Total financial contributions to the MED POL - PHASE I from its beginning to June 1980 (expressed in US \$).
For details see sections III, IV and V of this document.

Year	U N E P		ECE	UNIDO	FAO	UNESCO	WHO	WMO	IAEA	IOC	ICSEM	National research centres*	TOTAL
	EF	MTF											
1974	11,284	-	-	-	1,000	-	5,000	-	-	5,500	6,000	n.d.	28,784
1975	293,719	-	-	-	24,000	6,000	18,000	4,000	20,000	11,900	-	n.d.	377,619
1976	643,098	-	-	-	46,110	800	35,500	3,500	52,200	34,900	-	n.d.	816,108
1977	1,485,427	-	12,000	14,000	57,084	17,500	142,500	3,600	200,800	36,750	-	n.d.	1,969,661
1978	959,077	-	4,000	2,000	54,390	4,500	59,000	2,800	145,000	49,350	-	n.d.	1,280,117
1979	1,008,297	178,000	-	-	45,400	4,200	21,000	4,200	145,000	34,500	-	n.d.	1,440,597
1980	31,888	365,000	-	-	24,581	-	12,000	1,500	32,000	11,100	-	n.d.	478,069
TOTAL	4,432,790	543,000	16,000	16,000	252,565	33,000	293,000	19,600	595,000	184,000	6,000	7,224,004*	13,614,959
Percentage	32.56	3.99	0.12	0.12	1.86	0.24	2.15	0.14	4.37	1.35	0.04	53.06	100

*Very conservative estimate based on partial information received through MED POL II, III, IV, V, VII and X only. A more realistic figure is US \$10 - 15 million.

Table 6. Direct financial assistance (in US \$) to the participants in MED POL for training, equipment, material and experts (as at October 1980)

Country	MED I	MED II	MED III	MED IV	MED V	MED VI	MED VII	MED VIII	RAC	OTHER	TOTAL
ALGERIA	-	28.125	-	-	22.500	-	2.280	-	50.000	-	102.905
CYPRUS	10.000	30.225	19.500	-	8.500	9.700	-	-	-	-	77.925
EGYPT	11.500	62.825	33.925	12.700	15.700	18.200	5.315	-	40.000	1.401	201.566
FRANCE	2.000	-	1.000	-	-	-	4.560	8.000	10.000	-	25.560
GREECE	12.000	41.225	4.500	6.500	6.300	11.000	10.760	9.200	-	561	102.046
ISRAEL	30.000	30.525	1.000	24.300	-	7.000	26.450	9.000	-	-	128.275
ITALY	2.500	19.800	6.000	3.000	-	14.100	25.300	-	10.000	-	80.700
LEBANON	9.500	8.100	14.500	-	-	-	4.740	-	-	1.370	38.210
MALTA	6.000	24.525	21.878	15.000	-	12.500	7.980	10.000	10.000	-	107.883
MONACO	-	-	-	-	-	-	6.635	-	-	-	6.635
MOROCCO	-	29.525	17.000	-	-	2.500	4.560	-	-	-	53.585
SPAIN	2.500	4.500	18.053	4.500	-	-	9.560	10.000	-	-	49.113
TUNISIA	12.500	30.725	5.500	-	-	3.500	2.280	-	-	-	54.505
TURKEY	10.000	75.970	46.350	10.900	11.200	10.500	10.900	-	10.000	837	186.657
YUGOSLAVIA	7.000	67.050	34.156	32.200	41.100	16.000	41.335	-	10.000	775	249.616
TOTAL	115.500	453.120	223.362	109.100	105.300	105.000	162.655	46.200	140.000	4.944	1.465.181

Table 7. Status of the result-reporting in the intercalibration exercise related to MED POL II as at April 1980 (R = results reported; 0 = no report received).

Country	Institute	Principal Investigator	MA-M-1 (oyster)	SP-M-1 (sea plant)	MA-A-1 (copepod)	MA-A-2 (fish)
ALGERIA	Centre de Recherches océanographiques et des Pêches Alger	H.A. Aissi	R	R	R	R
CYPRUS	Fisheries Department Ministry of Agriculture and Natural Resources Nicosia	A. Demetropoulos	0	R	R	R
EGYPT	Institute of Oceanography and Fisheries Alexandria	H.I. Emara	not sent	0	0	0
	Centre for Post-graduate Studies and Research Alexandria	I. El-Sokkary	not sent	not sent	0	0
FRANCE	Laboratoire central d'Hygiène alimentaire Ministère de l'Agriculture Paris	G. Cumont	not sent	R	R	R
	Laboratoire de Chimie analytique et Toxicologie Montpellier	S. Brun	not sent	not sent	0	0
	Institut scientifique et technique des Pêches maritimes (ISTPM) Nantes	Y. Thibaud	R	R	R	R
GREECE	Institute of Oceanographic and Fisheries Research Athens	F. Voutsinou	R	R	R	R
	Radioanalytical Laboratory Nuclear Research Centre "Demokritos" Athens	A.P. Grimanis C. Papadopoulou	R	R	R	R
	General Chemical State Laboratory Division of Environmental Pollution Control Athens	D.G. Marketos	R	R	R	R
	Faculty of Veterinary Medicine Department of Food Hygiene Thessaloniki	P.G. Karaioannoglou	R	R	R	R
	Laboratory of Analytical Chemistry Faculty of Physics and Mathematics Thessaloniki	G. Vasilikiotis	R	R	R	R
ISRAEL	Israel Oceanographic and Limnological Research Ltd. Haifa	O.H. Oren	R	R	R	R
ITALY	Laboratory of Hydrobiology and Fish Culture Institute of Comparative Anatomy Siena	A. Renzoni	R	R	R	R
	Marine Contamination Laboratory-CNEN Fiescherino (La Spezia)	M. Bernhard	R	R	R	R
	Institute of General Chemistry-CNR Pavia	E. Orvini	R	R	R	0
	Institute of Hydrobiology and Fish Culture University of Genova Genova	R. Capelli	R	R	R	R

Table 7 (Cont.)

Country	Institute	Principal Investigator	MA-M-1 (oyster)	SP-M-1 (sea plant)	MA-A-1 (copepod)	MA-A-2 (fish)
ITALY (Cont.)	Institute of Zoology and Comparative Anatomy Messina	L. Mojo	R	R	R	R
LEBANON	Centre de Recherche marine-CNRS Beyrouth	H.H. Kouyoumjian	not sent	0	0	not sent
MALTA	The University of Malta Msida	A. Storace	not sent	R	R	R
MOROCCO	Institut scientifique des Peches maritimes Casablanca	H. Idrissi	not sent	0	R	0
	Faculté des Sciences Université Mohamed V Rabat	E. Saadi	not sent	0	0	not sent
SPAIN	Instituto de Investigaciones Pesqueras Barcelona	A. Ballester	R	R	R	R
	Laboratorio Oceanografico del Mar Menor San Pedro del Pinatar	J. Guerrero	R	R	R	0
	Institute of Chemistry of Sarria Barcelona	J. Obiols	not sent	not sent	R	R
TUNISIA	Institut national scientifique et technique d'Océanographie et de Peche Salambo	H.A. Salem	not sent	R	R	R
TURKEY	Hydrobiological Research Institute University of Istanbul Istanbul	I. Artuz	not sent	R	R	R
	Marine Science Department Middle East Technical University Erdemli-Icel	T.I. Balkas	R	R	R	R
	Department of Biological Oceanography and Institute of Hydrobiology, Ege University Bornova-Izmir	H. Uysal	not sent	R	R	R
	General Directorate of Fisheries Ankara	H. Kulan	not sent	0	0	not sent
YUGOSLAVIA	Department of Physics and Mathematics Faculty of Industrial Pedagogy Rijeka	V. Valkovic A. Ljubicic	R	0	0	not sent
	Institute for Oceanography and Fisheries Split	L. Stojanovski	not sent	0	0	not sent
	"Rudjer Boskovic" Institute Zagreb - Rovinj	M. Branica	R	R	R	R
	Marine Biological Station University of Ljubljana Portoroz	S. Gomiscek J. Stirn	R	R	R	R
No. of samples sent			20	31	34	29
No. of results reported			19	24	26	23

Table 8. Status of result-reporting in the intercalibration exercise related to MED POL III as at April 1980 (R = results reported; 0 = no report received).

Country	Institute	Principal Investigator	MA-M-1 (oyster)	MA-A-1 (copepod)	MA-A-2 (fish)
CYPRUS	Fisheries Department Ministry of Agriculture and Natural Resources Nicosia	A. Demetropoulos	0	not sent	not sent
EGYPT	Institute of Oceanography and Fisheries Alexandria	M.M. Abbas Aly	0	not sent	not sent
	Centre for Post-graduate Studies and Research Alexandria	El Sebae	0	0	0
FRANCE	Laboratoire de Chimie appliquée à l'expertise Montpellier	R. Mestres	R	R	R
	Institut scientifique et technique des Pêches maritimes (ISTPM) Nantes	C. Alzieu	R	R	R
GREECE	Laboratory of Hygiene University of Thessaloniki Thessaloniki	Th. Edipides	R	R	R
	Laboratory of Analytical Chemistry Thessaloniki	G. Vasilikiotis	0	not sent	not sent
	Department of Food Hygiene College of Veterinary Medicine Thessaloniki	A.G. Panetsos	R	R	0
	Institute of Phytopathology Benaki Athens	N. Adam	R	R	0
	Institute of Oceanographic and Fisheries Research Athens	J. Satsmadjis	R	R	R
ISRAEL	Israel Oceanographic and Limnological Research Ltd. Haifa	R. Ravid	R	R	R
ITALY	Institute of Marine Biology-CNR Venice	V.U. Fossato	R	R	R
	Laboratory of Hydrobiology and Fish Culture Institute of Comparative Anatomy Siena	A. Renzoni	R	0	not sent
LEBANON	Centre de Recherche marine-CNRS Beyrouth	H.H. Kouyoumjian	0	not sent	not sent
MALTA	The University of Malta Msida	J.V. Bannister	0	not sent	not sent
MOROCCO	Institut scientifique des Pêches maritimes Casablanca	H. Idrissi	0	not sent	not sent
SPAIN	Instituto de Investigaciones Pesqueras Barcelona	A. Ballester	R	R	0
	Institute of Chemistry of Sarria Barcelona	M. Cassiot	R	R	0

Table 8 (Cont.)

Country	Institute	Principal Investigator	MA-M-1 (oyster)	MA-A-1 (copepod)	MA-A-2 (fish)
TUNISIA	Institut national scientifique et technique d'Océanographie et de Pêche Salambo	H.A. Salem	0	not sent	not sent
TURKEY	Marine Science Department Middle East Technical University Erdemli-Icsl	T. Soylemez	R	R	R
	Hydrobiological Research Institute University of Istanbul Istanbul	I. Artuz	R	0	not sent
	General Directorate of Fisheries Ankara	N. Nazli	0	not sent	not sent
YUGOSLAVIA	Marine Biological Station Portoroz	J. Cencelj	R	R	R
	Centre for Marine Science "Rudjer Boskovic" Institute Rovinj	N. Snodlaka	-	-	-
	Institute for Oceanography and Fisheries Split	T. Vucatic	-	not sent	not sent
	Centre for Marine Research "Rudjer Boskovic" Institute Zagreb	M. Picer	R	R	R
	The Biological Institute Dubrovnik	D. Vilicic			
No. of samples sent			24	16	14
No. of results reported			15	13	9

Table 9. Maintenance services provided to participants in MED POL.
(November 1976 - May 1980).

Institution	Date	Services provided
Marine Biological Station, Portoroz, Yugoslavia	22-25 November 1976	Installation of AAS and GC received through MED POL. Joint visit with Varian engineer.
Centre for Marine Research, "Rudjer Boskovic" Institute Rovinj, Yugoslavia	11-14 January 1976	Installation of AAS and GC received through MED POL - Joint visit with Varian engineer.
Marine Science Department, Mersin, Turkey	9-13 May 1977	Installation of AAS and GC received through MED POL - Joint visit with Varian engineer.
General Chemical State Laboratory, Athens, Greece	5 July 1977	Adjustment of Mercury Analyzer owned by the Institute.
Institute of Oceanographic and Fisheries Research, Athens, Greece	6 July 1977	Discussion on maintenance problems of the Aanderaa current meters owned by the Institute.
Analytical Chemistry Laboratory, University of Thessaloniki, Thessaloniki, Greece	7 July 1977	Maintenance of Hewlett-Packard GC and of Perkin-Elmer AAS owned by the Institute.
Centre for Marine Research, "Rudjer Boskovic" Institute Rovinj, Yugoslavia	9-12 July 1977	1st regular service on GC received through MED POL. Emergency service on AAS received through MED POL. DVM found defective but spare part not available.
Marine Biological Station, Portoroz, Yugoslavia	13 July 1977	1st regular service on GC and AAS received through MED POL.
Centre de recherche oceanographiques et des peches, Alger, Algeria	7-9 August 1977	Installation of AAS received through MED POL. Joint visit with Varian engineer.
Fisheries Department, Nicosia, Cyprus	15-18 August 1977	Installation of AAS received through MED POL. Joint visit with Varian engineer.
Israel Oceanographic and Limnological Research Ltd., Haifa, Israel	19-23 August 1977	1st regular service on AAS received through MED POL and repair of the read out unit. Repair of Varian GC owned by the Institute. Discussion on maintenance problems of the Aanderaa current meters owned by the Institute.
Centre for Marine Research, "Rudjer Boskovic" Institute, Rovinj, Yugoslavia	24-26 August 1977	Emergency service and repair of AAS received through MED POL. Replacement of defective DVM. IC MAS2 found defective but spare part not available.
Marine Biological Station, Portoroz, Yugoslavia	5-7 October 1977	Emergency service and repair of AAS received through MED POL. Service on Carbon Rod Atomizer Unit. PM preamplifier found defective but spare part not available.
Centre for Marine Research, "Rudjer Boskovic" Institute Rovinj, Yugoslavia	6-7 October 1977	Emergency service on AAS received through MED POL. Replacement of IC MAS2.
Hydrobiological Research Institute, Istanbul, Turkey	25-26 October 1977	Installation of GC received through MED POL. Joint visit with Varian engineer. Repair of Hilger-Watts AAS owned by the Institute.
Institute of Hydrobiology, Izmir, Turkey	27 October 1977	Installation of AAS received through MED POL. Joint visit with Varian engineer. Carbon Rod Unit and Gas box missing.

Table 9 (Cont.)

Institution	Date	Services provided
Marine Science Department, Mersin, Turkey	28 October 1977	1st regular service on AAS and GC received through MED POL. Replacement of IC MA53 of AAS.
Marine Biological Station Portoroz, Yugoslavia	19-21 December 1977	Emergency service and repair of AAS received through MED POL. Replacement of PM Preamplifier.
The University of Malta, Msida, Malta	6 February 1978	Emergency service and repair of AAS received through MED POL. Background Corrector Lamp and Timer PCB replaced. Service on Hewlett-Packard GC owned by the Institute.
Israel Oceanographic and Limnological Research Ltd., Haifa, Israel	7-9 February 1978	2nd regular service on AAS received through MED POL. Replacement of H ₂ -lamp and of carbon-rod work-head. Emergency service on GC received through MED POL. Inspection of the whole system.
Fisheries Department, Nicosia, Cyprus	10-11 February 1978	1st regular service on AAS received through MED POL. Installation of Turner fluorometer owned by the Institute.
Institut scientifique des peches maritimes, Casablanca, Morocco	17-20 September 1978	1st regular service and repair of AAS received through MED POL. Replacement of trigger transistor.
Institut national scientifique et technique d'oceanographie et de peche, Salambo, Tunisia	21-22 September 1978	1st regular service on AAS received through MED POL. Replacement of H ₂ -lamp.
Centre de recherche oceanographiques et des peches, Alger, Algeria	12-14 November 1978	1st regular service on AAS received through MED POL. Replacement of H ₂ -lamp.
Centre for Marine Research "Rudjer Boskovic" Institute Rovinj, Yugoslavia	21-24 November 1978	Emergency service on AAS received through MED POL. Replacement of Control PCB.
Institute of Oceanography and Fisheries Alexandria, Egypt	16-20 January 1979	Installation of AAS and GC received through MED POL. Joint visit with Varian engineer. Installation of GC only provisional.
Institute national scientifique et technique d'Oceanographique et des Peche Salambo, Tunisia	9-12 April 1979	2nd regular service on AAS received through MED POL. Replacement of H ₂ -lamp.
Hydrobiological Research Institute Istanbul, Turkey	26 - 27 June 1979	1st regular service on GC received through MED POL.
Marine Sciences Department Erdemli-İcel, Turkey	28 June - 1 July 1979	Emergency service on AAS and GC received through MED POL. Calibration of background corrector and automatic gas box units. Replacement of H ₂ -lamp. Repair of automatic gas box, carbon rod and HCL power supply units and of indicating module of a VARIAN AAS model AA-6 owned by the laboratory. Repair of two chart recorders and of a BECKER-PACKARD GC owned by the laboratory. Inspection of four Aanderaa current meters owned by the Institute.
Institute of Hydrobiology Izmir, Turkey	1-3 July 1979	Emergency service on AAS received through MED POL. Calibration of automatic gas box unit. Replacement of air-solenoid valve.
Marine Biological Station Portoroz, Yugoslavia	4-7 July 1979	Emergency service on GC received through MED POL. Inspection of the whole system.
Fisheries Department Nicosia, Cyprus	9-11 October 1979	2nd regular service on AAS received through MED POL. Replacement of Amplifier board and HCL 2 switch. Installation of GC received through MED POL. Joint visit with Varian engineer.

Table 9 (Cont.)

Institution	Date	Services provided
Centre for Post-graduate studies and Research Alexandria, Egypt	13-15 October 1979	Installation of AAS received through MED POL. Joint visit with Varian engineer. Only provisional installation. Acetylene gas cylinder missing.
Institute of Oceanography and Fisheries Alexandria, Egypt	15 October 1979	1st regular service on AAS received through MED POL. Completion of installation of GC received through MED POL. Pure nitrogen still missing. Emergency service on Turner fluorometer owned by the Institute. Realignment of xenon lamp.
The University of Malta, Msida, Malta	16-19 October 1979	2nd regular service on AAS received through MED POL. Repair of gas-box unit M-80. Installation of GC received through MED POL. Joint visit with Varian engineer.
VARIAN Zug, Switzerland	2 November 1979	Calibration of peak PCB for AASs in Erdemli-Icel and Nicosia.
Institut scientifique des peches maritimes Casablanca, Morocco	3-7 December 1979	Installation of GC received through MED POL. Joint visit with Varian engineer. Emergency visit on AAS received through MED POL. Replacement of transistors on PCB Amplifier and BCD Decoder. Recalibration of M-80 gas box unit.
Centre de Recherches oceanographiques et des Peches Alger, Algeria	31 March - 2 April 1980	2nd service on AAS received through MED POL.
Centre for Marine Research "Rudjer Boskovic" Institute Rovinj, Yugoslavia	9-11 April 1980	Service of two current meters and the chart recorder owned by the Institute and used for MED POL.
Marine Biological Station Portoroz, Yugoslavia	14 April 1980	Inspection of AAS and GC received through MED POL.
Institute of Oceanography and Fisheries Alexandria, Egypt	28-30 May 1980	Emergency service on AAS received through MED POL. Replacement of transistors of PM preamplifier. Repair of the two multi-pin connectors of PM-preamplifier. Calibration of M-80 gas box unit.
Centre for Post-graduate studies and Research Alexandria, Egypt	30 May 1980	1st regular service on AAS received through MED POL. Installation and location of the instrument still provisional.

Table 10: List of meetings, specifically related to MED POL.
Intergovernmental meetings which reviewed MED POL and
Interagency meetings not listed.

1. IOC/FAO(GF'CM)/ICSEM International Workshop on Marine Pollution in the Mediterranean, Monte-Carlo, 9-14 September 1974
2. UNESCO Workshop on Marine Ecosystem Modelling in the Eastern Mediterranean, Alexandria, 2-8 December 1974
3. FAO(GF'CM)/UNEP Expert Consultation on the Joint Co-ordinated Project on Pollution in the Mediterranean (Baseline Studies and Monitoring of Metals and Chlorinated Hydrocarbons in Marine Organisms), Rome, 23-27 June 1975
4. FAO(GF'CM)/UNEP Expert Consultation on the Joint Co-ordinated Projects on Pollution in the Mediterranean (Research on the Effects of Pollutants on Marine Organisms and their Populations, and on Marine Communities and Ecosystems), Rome, 30 June - 4 July 1975
5. IOC/WMO/UNEP Expert Consultation on the Joint Co-ordinated Projects on Pollution in the Mediterranean, Msida, 8-13 September 1975
6. WHO/UNEP Expert Consultation on the Coastal Water Quality Control Programme in the Mediterranean, Geneva, 15-19 December 1975
7. UNESCO/UNEP Meeting of Experts on Pollutants from Land-Based Sources in the Mediterranean: Pollutants entering the Mediterranean through rivers, Paris, 17-21 May 1976
8. UNESCO/UNEP Workshop on Marine Ecosystem Modelling in the Mediterranean, Dubrovnik, 18-22 October 1976
9. IAEA/UNEP Meeting of Consultants on Organochlorine Intercalibration Measurements, Monaco, 3-5 November 1976
10. UNESCO/UNEP Meeting of Experts of Mediterranean Countries on Pollutants from Land-Based Sources, Rome, 20-23 December 1976
11. WHO/UNEP Group of Experts: Guidelines for Health Related Monitoring of Coastal Water Quality, Rovinj, 23-25 February 1977
12. WHO/UNEP Group of Experts: Consultation on Health Criteria and Epidemiological Studies related to Coastal Water Pollution, Athens, 1-4 March 1977

Table 10 (Cont.)

13. FAO(GFCM)/UNEP Mid-Term Expert Consultation on the Joint FAO(GFCM)/UNEP Co-ordinated Projects on Pollution in the Mediterranean (Review of Pilot Projects MED II and MED III Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms, and Baseline Studies and Monitoring of DDT, PCBs and other Chlorinated Hydrocarbons in Marine Organisms), Dubrovnik, 2-6 May 1977
14. FAO(GFCM)/UNEP Mid-Term Expert Consultation on the Joint FAO(GFCM)/UNEP Co-ordinated Projects on Pollution in the Mediterranean (Review of Pilot Projects MED IV and MED V Research on the Effects of Pollutants on Marine Organisms and their Populations, and Research on the Effects of Pollutants on Marine Communities and Ecosystems), Dubrovnik, 9-13 May 1977
15. IOC/WMO/UNEP Mid-Term Review Meeting on the Co-ordinated Mediterranean Pollution Monitoring and Research Programme, Barcelona, 23-27 May 1977
16. WHO/UNEP Mid-Term Review Meeting of the Joint WHO/UNEP Co-ordinated Pilot Project on Coastal Water Quality Control in the Mediterranean, Rome, 30 May - 1 June 1977
17. WHO/UNEP Workshop on Coastal Water Pollution Control, Athens, 27 June - 1 July 1977
18. UNEP/FAO/WHO/WMO/IOC Mid-Term Review Meeting on the Progress of the Co-ordinated Mediterranean Pollution Monitoring Programme (MED POL) and related Projects of the Mediterranean Action Plan, Monaco, 18-22 July 1977
19. UNEP/WHO/ECE/UNIDO/FAO/UNESCO/IAEA Meeting of Experts on Pollutants from Land-Based Sources, Geneva, 19-23 September 1977
20. WHO/UNEP Seminar on Monitoring of Recreational Coastal Water Quality and Shellfish Culture Areas, Rome, 4-7 April 1978
21. IMCO/UNEP Workshop on Oil Pollution Contingency Planning, Malta, 4-7 September 1978
22. UNESCO Meeting of National Committees for the International Hydrological Programme of Mediterranean Countries, Rome, 9-13 October 1978
23. UNESCO/WHO/WMO/UNEP Workshop on the Assessment of Particulate Matter Contamination in Rivers and Lakes, Budapest, 13-17 November 1978

Table 10 (Cont.)

24. ICSEM/UNEP Workshop on Pollution of the Mediterranean, Antalya, 24-27 November 1978
25. WHO/UNEP Workshop on Monitoring of Recreational Water Quality and Shellfish Culture Areas, Rome, 17-19 January 1979
26. WHO/UNEP Meeting on Shellfish and Recreational Coastal Water Quality Monitoring (MED VII), Rome, 2-23 November 1979
27. WHO/UNEP Expert Consultation on Development of Guidelines and Criteria for dealing with Article 7 and Annex III of the Land-Based Sources Protocol, Copenhagen, 2-4 September 1980
28. WHO/UNEP Expert Consultation on Development of Quality Criteria and Epidemiological Studies, Copenhagen, 9-11 September 1980
29. ICSEM/UNEP Workshop on Pollution of the Mediterranean, Cagliari, 9-13 October 1980
30. UNEP/FAO/WHO Meeting of Experts on Environmental Quality Criteria for Mercury in Mediterranean Seafood, Geneva, 3-6 November 1980
31. UNEP/FAO/WHO/WMO/IAEA/IOC Meeting of Experts to Evaluate the Pilot Phase of MED POL and to Develop a Long-Term Monitoring and Research Programme for the Mediterranean Action Plan, Geneva, 12-16 January 1981.