Intergovernmental Review Meeting of Mediterranean Coastal States and First Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its related protocols

Geneva, 5 - 10 February 1979

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

ADMINISTRATIVE REPORT:

FEBRUARY 1975 - SEPTEMBER 1978
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INTRODUCTION

The Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) was launched as part of the Mediterranean Action Plan initiated at the Intergovernmental Meeting on the Protection of the Mediterranean, convened by UNEP in Barcelona from 28 January to 4 February 1975\(^1\). The activities approved at this meeting were later elaborated in detail, expanded and modified following the recommendations and the decisions of numerous expert and intergovernmental meetings, referred to in the text of this document.

This document is only an administrative report on the implementation of the MED POL and MED POL-related activities, covering the period February 1975 – September 1978. The description of the MED POL programme, as well as the scientific results obtained until September 1978, are contained in documents UNEP/IG.14/INF.3 and UNEP/IG.14/INF.5 respectively.

BACKGROUND

The 1975 Intergovernmental Meeting in Barcelona approved, as part of MED POL, seven pilot projects:

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 OOT, 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 then, the following projects have been added, or are considered to be added to MED POL, as collateral or supporting activities:

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 Via Atmosphere;

MED POL XIII : Modelling of Marine Systems.

Under the overall co-ordination of UNEP, these projects are carried out by co-operative networks of national institutions designated by their national authorities as participants in the programme. The day-to-day guidance to these institutions is provided by specialized bodies of the United Nations system which are assisted, in some projects, by national institutions designated as Regional Activity Centres (RAC) for these projects.

PROGRESS IN IMPLEMENTATION

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

The operational document for this pilot project was developed at a joint IOC/WMO/UNEP Consultation (Msida, 8-13 September 1975)\textsuperscript{2}, which was attended by 36 participants from 12 Mediterranean countries.

At present 14 countries\textsuperscript{3} have expressed a wish to participate in the pilot project and nominated 28 national laboratories as participants in the network dealing with the pilot project (Annex I).
The work on this project was started during 1976 and, by the end of November 1978, 13 research agreements had been signed with institutions designated as participants in the project, 3 cleared and are ready for signature, while the remaining 12 research agreements are still being negotiated.

On the basis of the research agreements signed, a training programme has been initiated. To date a total of 20 m/m training has been granted, of which, by the end of November 4 m/m have been completed. The participating laboratories are aided by field and laboratory equipment, such as fluorescence spectrophotometers, neuston nets, sampling bottles and solvents.

Methodological guidelines for the implementation of the project, based on those prepared for ICOLIS, have been developed.

The methodological questions related to the project and the preliminary results obtained through the pilot project were presented and reviewed at the IOC/WMO/UNEP Mid-term Review Meeting (Barcelona, 22 - 26 May 1977), at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977), at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978), and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978).

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

The operational document for this pilot project was formulated at a joint FAQ(GFCM)/UNEP Expert Consultation (Rome, 23-27 June 1975) attended by 35 participants from 13 Mediterranean countries.

Fifteen countries have expressed a wish to take part in the pilot project and nominated 35 national laboratories as participants in the network dealing with the pilot project (Annex I).

The work on this pilot project started in late autumn 1975 and, by the end of November 1978, 30 research agreements had been signed, 1 cleared and ready for signature, while the remaining 4 research agreements are still being negotiated with institutions designated as participants in the project.

As part of the pilot project's implementation, a training programme has been initiated. To date a total of 45 m/m has been granted, of which by the end of November 1978, 25 m/m have been completed. In
addition, participating research centres have already received equipment (11 atomic absorption spectrophotometers and other instruments) and material to facilitate their participation in the pilot project.

Guidelines for sampling and analyses of biological material and for the use of biological accumulators in marine pollution monitoring have been prepared\textsuperscript{15,16,17}, for the use of participants in the pilot project.

A common reference methodology for analytical procedures to be followed in measuring the concentration of metals was adopted by participants in the project. The comparability of the results obtained by the various research centres is assured by a mandatory and permanent intercalibration exercise through which reference materials and standards are distributed to the participants in the project.

The methodological questions related to the project and the results obtained from the first phase of the pilot project were presented and reviewed at the FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 2 - 6 May 1977)\textsuperscript{18}, at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)\textsuperscript{19}, at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)\textsuperscript{20,21}, and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)\textsuperscript{22}.

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

The operational document for the pilot project was developed by the same Expert Consultation\textsuperscript{23} that formulated the preceding pilot project.

Currently, 14 countries\textsuperscript{17} have nominated 29 national laboratories to participate in the pilot project (Annex I).

The first samples to be analysed were collected in late autumn 1975 and, by the end of November 1976, 22 research agreements had been signed, 1 cleared and is ready for signature, while the remaining 6 research agreements are still being negotiated.

Since not too many Mediterranean research institutions have been able to analyse marine samples for chlorinated hydrocarbons, a total of 34 m/m training was granted to the participants in the pilot project and by the end of November 1978, 8 m/m of training had been carried through. Eight gas chromatographs have been delivered to selected Mediterranean laboratories in addition to other types of equipment and material necessary for monitoring of chlorinated hydrocarbons.
Guidelines for sampling and analyses of biological material and for the use of biological accumulators have been prepared \(^{(15)}\) \(^{(14)}\) \(^{(13)}\) for the use of participants in the pilot project.

A common reference methodology for analytical procedures to be followed in measuring the concentration of chlorinated hydrocarbons was adopted by participants in the project. The comparability of the results obtained by the various research centres is assured by a mandatory and permanent intercalibration exercise through which reference materials and standards are distributed to the participants in the project.

Methodological questions and the first results obtained through the project were presented and reviewed at the FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 2 - 6 May 1977)\(^{(16)}\), at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)\(^{(17)}\), at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)\(^{(8)}\)\(^{(9)}\), and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)\(^{(10)}\).

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

The operational document for this pilot project was developed at a joint FAO(GFCM)/UNEP Expert Consultation (Rome, 30 June - 4 July 1975)\(^{(11)}\) attended by 25 participants from 13 Mediterranean countries.

At present 13 countries\(^{(18)}\) have expressed a desire to participate in the pilot project and nominated 28 national laboratories as participants in the network dealing with the pilot project (Annex I).

The work on this pilot project started in late autumn 1975 and, by the end of November 1978, 16 research agreements had been signed, 3 cleared and are ready for signature, while the remaining 9 research agreements are still being negotiated with institutions designated as participants in the project.

To facilitate the participation of the nominated research centres in the work, a total of 26 m/m training was granted up to November 1978 of which 17 m/m have been completed. Additional assistance provided to the participants included donation of specific laboratory equipment (e.g. research microscopes, analytical balances, and laboratory centrifuges) and material.
Several manuals have been developed\textsuperscript{13, 15, 19} as guidelines for the participants in the pilot project.

Methodological questions and the preliminary results relevant to this project were presented and reviewed at the FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 9 - 13 May 1977)\textsuperscript{16}, at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)\textsuperscript{17}, at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)\textsuperscript{18}, \textsuperscript{19}, and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)\textsuperscript{20}.

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

The operational document for this pilot project was formulated at the same Expert Consultation\textsuperscript{11} that developed the previous pilot project.

At present, 13 countries\textsuperscript{20} have expressed a wish to participate in the project and nominated 22 national laboratories as participants in the network dealing with the pilot project (Annex I).

The work started in late autumn 1975 and, by the end of November 1978, 14 research agreements had been signed, 1 cleared and is ready for signature, while the remaining 9 research agreements are still being negotiated.

The training programme for participants in this pilot project is under way. Until November 1978, a total of 19 m/m training up to November 1978 was agreed upon of which 5 m/m have already been fulfilled. Further assistance is provided to many of the participants in this project by donation of equipment and material, which include such items as salinometers, dredge samplers, portable pH meters and many others.

The preliminary results of this project and the methodological questions related to it were presented and reviewed at the FAO(GFCM)/UNEP Mid-term Expert Consultation (Dubrovnik, 9 - 13 May 1977)\textsuperscript{16}, at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)\textsuperscript{17}, at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)\textsuperscript{18}, \textsuperscript{19}, and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)\textsuperscript{20}.
MED POL VI: PROBLEMS OF COASTAL TRANSPORT OF POLLUTANTS
(IJC/UNEP)

The operational document for this pilot project was developed in Msida by the same Expert Consultation that formulated the pilot project on Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters (MED POL I).

At present 13 countries have expressed a desire to participate in the project and nominated 23 national laboratories as participants in the network dealing with the pilot project (Annex I).

The work on this project started in 1976 and, by the end of November 1978, 10 research agreements had been signed, 3 cleared and are ready for signature, while the remaining 10 research agreements are still being negotiated with institutions designated as participants in the project.

The need for training was early recognized and as an aid to the participants in the project 16 m/m of training were granted up to the end of November 1978, of which 2 m/m have been completed. As a further aid, current meters, salinometers and other types of equipment were, or soon will be, put at the disposal of the institutions participating in the project.

Methodological guidelines for the implementation of the project have been developed.

The first results of the project and the relevant methodological problems were reviewed and discussed at the IJC/WMO/UNEP Mid-term Review Meeting (Barcelona, 23 - 27 May 1977), at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977), at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978), and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978).

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

The operational document for this pilot project was prepared at a joint WHO/UNEP Expert Consultation (Geneva, 15-19 December 1975) attended by 35 participants from 15 countries.

At present 13 countries have expressed a desire to participate in the project and nominated 30 national institutions as participants in the network dealing with the pilot project (Annex I).
The work on this pilot project started in late autumn 1976 and, by the end of November 1978, 23 research agreements had been signed, 2 were cleared and ready for signature, while 4 research agreements were still being negotiated.

The training programme for participants in this pilot project is under way. A total of 40 m/m training was approved up to the end of November 1978, of which 6 m/m of individual training have been accomplished. More emphasis was given to group training in the form of seminars and workshops. Assistance to the research centres participating in the pilot project was provided, including laboratory equipment and material.

For the use of participants in the project, guidelines and manuals were prepared and adopted by participants in the project for monitoring the quality of recreational and shellfish growing waters[24, 25, 28, 27, 28].

Interim microbiological criteria for coastal waters have been adopted by participants in the project and were recommended to be used in assessment of the sanitary quality of recreational waters.

The results of the project and the methodological problems were presented and reviewed at the WHO/UNEP Mid-term Review Meeting (Rome, 30 May - 1 June 1977)[29], at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)[30], at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)[31, 32], and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)[33].

MED POL VIII : BIOGEOCHEMICAL STUDIES OF SELECTED POLLUTANTS IN THE OPEN WATER 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.

In addition to the IAEA Laboratory in Monaco, which is the co-ordinator of the project, five research institutions from five Mediterranean countries[30] participate in collecting, analysing and interpreting data on pollution of open waters (Annex I).

Five cruises have been completed in the framework of this project by scientists from Egypt, Greece, Israel, Monaco, Spain, Turkey and Yugoslavia and effectively covered all the principal open waters of the Mediterranean, with the major exception of the Adriatic. The
ATLANTIS II cruise from Suez to Malta (14-23 April 1977) collected 36 open ocean samples at various depths and 10 samples of sediments from four stations. The USNS KANE cruise (11-18 April 1977) from Greece to Monaco collected over 100 water samples from the surface down to the bottom. The USNS HAYES undertook a cruise (13-23 June 1977) from Greece to Corsica. The eight-day SHIKMONA cruise from Haifa to Crete (5-12 July 1977) collected water samples, plankton and sediments, and the CORNIDE DE SAAVEDRA completed a cruise (15-26 July 1977) from Civitavecchia, near Rome, to Barcelona.

Under the sponsorship of ICSEM, the CALYPSO visited several Mediterranean countries and made investigations relevant to the pollution of the Mediterranean Sea. The samples obtained by this cruise have been analysed as part of the open water programme.

The scientific programme for a 4-6 month cruise (MED CRUISE) of Mediterranean scientists has been formulated under the co-ordination of the IAEA Monaco laboratory but did not receive the support of the Mediterranean Governments.

The results obtained through MED POL VIII were presented and reviewed at the Mid-term Review Meeting on the Progress of the MED POL and Related Projects of the Mediterranean Action Plan (Monaco, 18 - 22 July 1977)1, at the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, 9 - 14 January 1978)2, and at the Joint ICSEM/UNEP Workshop on Pollution of the Mediterranean (Antalya, 24 - 27 November 1978)3.

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

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

Through an expert group meeting in May 19764, the technical details of the project were identified, including the substance to be monitored and a small number of rivers was suggested for sediment sampling.

As assistance to the participants in this project, guidelines were prepared5 for sampling methods and for the use of selected analytical techniques.

Collection of sediment samples and their analysis has been carried out on a restricted number of rivers. In some cases, sediment samples were sent to the International Laboratory of Marine Radioactivity (IAEA, Monaco), for analysis. In addition, technical and financial assistance is being provided to the countries requesting it.
MED POL X : POLLUTANTS FROM LAND-BASED SOURCES IN THE MEDITERRANEAN
(WHO/ECE/UNIDO/FAO/UNESCO/IAEA/UNEP)

The document specifying all project operations was prepared by a series of inter-agency consultations and agreed upon among the six co-operating agencies and UNEP.

Concurrence of Mediterranean Governments for participation in the project was sought by UNEP in March 1976 and the majority of the riparian countries designated a special contact point for this task. UNEP focal points provided the contact in the remaining countries.

The project was a joint undertaking to which each co-operating agency contributed according to its field of expertise and geographical representation as follows:

- municipal waste sources, including tourist development areas, disposal and management practices: WHO;

- industrial waste sources, disposal and management practices: ECE and UNIDO, respectively;

- assessment of pollution stemming from agricultural run-off: FAO;

- waste loads carried by rivers as well as the contribution of suspended sediments: UNESCO;

- the amount of radio-active discharges in the Mediterranean: IAEA.

During the first phase of the project, ending October 1976, common methodology was developed for the collection of compatible data from Mediterranean countries. This includes standard forms for reporting on municipal, industrial and agricultural pollution sources as well as on rivers and nuclear installations.

During the second phase of the project, ending July 1977, sectoral surveys of existing information on all the above-listed categories of pollution sources were being conducted in almost all countries concerned, either directly through collaborating national institutions or with the assistance of consultant missions. Detailed source inventories have been established which will contribute to the assessment of the contribution of pollutants from land-based sources to the total pollution load of the Mediterranean.

A comprehensive summary report providing a quantitative picture of all waste sources and pollutant categories for the entire basin was prepared, reviewed by the Meeting of Experts on Pollutants from Land-Based Sources (Geneva, 19 - 23 September 1977) and presented in
its final form to the Intergovernmental Review Meeting of Mediterranean Coastal States on the Mediterranean Action Plan (Monaco, January 1978)."
The service of the engineer was not limited to the instruments installed through MED POL, but was also available for the repair of other instruments used in the MED POL projects.

Until mid-November 1976, through the assistance of the common maintenance services, ten atomic absorption spectrophotometers and six gas chromatographs have been installed at research centres in various parts of the Mediterranean. Twenty-five visits have been paid by the maintenance engineer to fifteen institutions in Algeria, Cyprus, Greece, Israel, Malta, Morocco, Tunisia, Turkey and Yugoslavia (Annex II).

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

This project, suggested by several Mediterranean expert groups and intergovernmental meetings, is still in the planning phase.

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

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

Several scientific and expert group meetings on ecosystem modelling have been convened since 1973 by UNESCO and this activity was expanded after 1976 with assistance from UNEP. At the Expert Consultation in Paris, working groups were proposed, each concerned with one specific region in the Mediterranean. The group for the north-western Mediterranean gathered at Saintes-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), Barcelona (May 1977) and Monaco (July 1977), 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), an outline of a project on modelling has been drawn up jointly with UNESCO. The project focuses attention on hydrodynamic, biogeochemical and ecosystem modelling.
INSTITUTIONAL AND FINANCIAL ARRANGEMENTS

The institutional arrangements relevant to the described projects are described in document UNEP/IG.14/INF.3.

The financial support to the same projects is provided from various sources:

- UNEP (indirectly through joint projects with the specialized bodies of the United Nations system responsible for the implementation of the project and directly through internal UNEP projects);

- specialized bodies of the United Nations system (mainly in the form of services and staff time);

- Governments of the Mediterranean States (as direct support to their national institutions participating in the projects);

- national institutions participating in the project (as staff time, services, shiptime, equipment and materials).

While it is difficult to provide precise figures for the financial support provided to the projects from the Governments of the Mediterranean States and from the institutions participating in the projects, the contribution from UNEP and the specialized bodies of the United Nations system are listed in Table I of Annex IV to the document UNEP/IG.14/4.
NOTES AND REFERENCES


3) Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Morocco, Spain, Syria, Tunisia, Turkey and Yugoslavia


12) Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Morocco, Spain, Syria, Tunisia, Turkey and Yugoslavia


17) Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Morocco, Spain, Syria, Tunisia, Turkey and Yugoslavia

18) Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Morocco, Spain, Tunisia, Turkey and Yugoslavia


20) Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Morocco, Spain, Tunisia, Turkey and Yugoslavia.

21) Cyprus, Egypt, France, Greece, Israel, Italy, Malta, Monaco, Morocco, Spain, Tunisia, Turkey and Yugoslavia


23) Egypt, France, Greece, Israel, Italy, Lebanon, Malta, Monaco, Morocco, Spain, Tunisia, Turkey and Yugoslavia


30) France, Greece, Israel, Malta and Spain


PARTICIPANTS IN THE CO-ORDINATED MEDITERRANEAN POLLUTION
MONITORING AND RESEARCH PROGRAMME (MED POL)

This Annex contains the reproduction of computerized information on the participants in the pilot projects of the Co-ordinated Mediterranean Pollution Monitoring and Research Programme (MED POL) and an information on the Regional Activity Centres (RAC) for MED POL projects.

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<td>Mr. Andreas Demetriopoulos</td>
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**EGYPT**

Institute of Oceanography and Fisheries
Mediterranean Branch
Kasr El Ainy
ALEXANDRIA
tel: 801-555, 801-449

Deputy Director:
Dr. Yalmut Rashem

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Centre for Post-graduate Studies and Research
Alexandria University
Shatby Avenue - Shatby
S.O. Box 872
ALEXANDRIA
tel: 22908, 25007

Director:
Prof. A. R. El-Sadr

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**UNEP/IG.14/Inf. 4**
ANNEX I.
FRANCE

Laboratoire de Chimie appliquée à l'expertise scientifique universitaire, Université de Montpellier I
Avenue Charles Flahault 83-1104
Montpellier, CEDEX

Tel: (67) 635082

Directeur: Prof. Robert Mestres

Med I Dr. C. Causse signed Nov 1975

Med III Prof. R. Mestres signed Dec. 1976

Med XI intercalib. for Med III analyses reported

Laboratoire central d'Hygiène alimentaire
Direction des Services vétérinaires
Ministère de l'Agriculture
63 Rue de Dantzig
75015 PARIS

tel: 5318210

Directeur: Dr. Jean Pantaléon

Med II M. G. Cumant signed March 1977

Med XI intercalib. for Med II sea-plankton, copepods analyses reported

Laboratoire d'Océanographie physique
Musée d'Histoire naturelle
43-45 Rue Cuvier
75231 PARIS, CEDEX

tel: 707.85.44, 707.19.00

Directeur: Prof. Henri Lacombé

Med VI Prof. B. Saint-Gally negotiating

Centre d'Études et de Recherches de Biologie et d'Océanographie médicale (CEABOM)
Parc de la Cité
Avenue Jean Lorrain 1
69300 NOL

tel: 893292-897249

Directeur: Dr. Maurice Aubert

Med VII Dr. A. Fruchart signed June 1978

Station zoologique de Villefranche-sur-Mer
Station marine de Villefranche-sur-Mer
La Conque
65230 VILLEFRANCHE-SUR-MER

tel: (93) 807165, 808112

Directeur: Prof. Paul Bougis

Med I negotiating

Med VI negotiating

Laboratoire de Chimie analytique et Toxicologique
Faculté de Pharmacie
Université de Montpellier I
Avenue Charles Flahault 83-1103
Montpellier, CEDEX

tel: (67) 635082

Directeur: Prof. Suzanne Brun

Med II Prof. S. Brun signed Dec. 1976

Med XI intercalib. for Med II analyses reported
FRANCE (Cont.)

Institut français du Pétrole
1 et 3 Avenue de Beix Préau
52302 AUIL MALMAISON

tel: 967.11.10, 794.02.14

Directeur:
Dr. Jean-Claude Balaneau

Institut scientifique et technique
des Pêches maritimes (ISTPM)
Rue de l'île d’Yeu
87, 1049
44037 NANTES CEDEX

tel: (40) 749981

Directeur:
Dr. Claude Maurin

(I.S.T.P.M.
Centre de Sète
1 Rue Jean Pallar
34200 Sète)

tel: (67) 742299

Chef du Centre:
Dr. Yves Fauvel

Laboratoire Arago
66630 SANTOS-SUR-MER

tel: 383009, 383119, 383040

Directeur:
Dr. Jacques Soyer

Station marine d'Endoume
et Centre d'Océanographie
Rue de la Batterie-cès-Lions
13007 MARSEILLE

tel: 521294

Directeur:
Prof. Jean-Marie Parkes

Laboratoire de Physique et Chimie
marines
Université Pierre et Marie Curie
(Paris VI)
4 Place Jussieu
75230 PARIS, CEDEX 05

tel: 532525 - 4879

Directeur:
Prof. Alexandre Ivanoff
FRANCE (Cont.)

Centre des faibles Radioactivités Laboratoire mixte CNRS-CEA
B.P. No. 1
91190 GIF-SUR-YVETTE
tel: 907.78.28
Directeur:
Dr. Jacques Labeyrie

Greece

Institute of Oceanographic Research and Fisheries Research
Ministry of Co-ordination
Agios Kosmas-Ellinikon
ATHENS
tel: 9820211
Director General:
Dr. Constantine E. Vamvakas

Zoological Laboratory and Museum
University of Athens
Panepistimiopolis-Kauponia
ATHENS 621
tel: 743.211
Director:
Prof. Dr. Vassili Klortzas

Laboratory of Zoology
Faculty of Science
University of Thessaloniki
THESSALONIKI
tel: 2392.2449
Director:
Prof. Dr. Marios E. Kattoulas
GREECE (Cont.)

Radioanalytical Laboratory
Radiochemical and Nuclear Analysis group
Department of Chemistry
Nuclear Research Centre
"Demokritos"
Agni Paraskevi Attalikis,
ATHENS

tel: 6513111 ext. 376-375

Head of Laboratory:
Dr. Apostolos P. Gramianis

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General Chemical State Laboratory
Division of Environmental Pollution Control
Ministry of Economic Affairs
16 A. Patachha Street
602 ATHENS

tel: 6426311

Head of Division
Dr. Desis G. Markatos

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<th>Med</th>
<th>Dr. D.G. Markatos</th>
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Department of Food Hygiene
Faculty of Veterinary Medicine
Aristotelian University of
Thessaloniki

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Director:
Prof. Dr. Achilles G. Panetsos

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Laboratory of Hygiene
Medical School
Aristotelian University of
Thessaloniki

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Director:
Prof. Dr. Theodore Edipides

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Laboratory of Analytical Chemistry
Faculty of Physics and Mathematics
University of Thessaloniki

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Director:
Prof. Dr. George Vasilikiotis

| Med | intercalib. for Med III |

oyster, sea-giant, copepod and fish analyses reported

Sample analyses recorded
GREECE (Cont.)

Senski Institute of Phytopathology
8 Delta Street
ATHENS

tel: 5012376

Director:
Dr. Dimitrios S. Vassilopoulos

Med III
Dr. N. Adam
signed
21.7.77
March 1977

Med IV
Dr. R. Fytizes
signed
21.5.77
March 1977

Med XII
sample analyses reported

Laboratory of Organic Chemistry
Aristotle University of
THESSALONIKI

tel: 2392.2497

Director:
Prof. Nicholas E. Alexandrou

Med I
Prof. N.E. Alexandrou
cleared
8.5.78
Aug. 1977

Environmental Pollution Control Project
Ministry of Social Services
107, 28th October Street
ATHENS 814

tel: 850111, 850476

Project Manager:
Dr. Gregory Markantonatos

Med VII
Prof. J. Papadakis
signed
15.5.78
Nov. 1976

Dr. S. Sotiracopoulou
Dr. M. Thalassinou-Tzatzinis

Department of Hydrology and Hydraulic Works
National Technical University
42, 28th October Avenue
ATHENS 147

tel: 3607.603/3691.265

Director:
Prof. Dr. Themis S. Xanthopoulos

Med VI
negotiating

Laboratory of Hydraulics and Hydraulic Works
Department of Hydraulics
School of Technology
Aristotle University of
THESSALONIKI

Tel: 591.2697/96

Director:
Prof. Dr. J. Ganoulis

Med VI
negotiating
ISRAEL

Israel Oceanographic and Limnological Research Ltd.
Tel Shikona
P.O. Box 1733
HAIFA

tel: (04)539.258/9

Director:
Mr. Yehay Ben-Nun

Environmental Health Laboratory
Hadassan Medical School
Hebrew University
P.O. Box 1172
JERUSALEM

tel: 233-421

Acting Director:
Prof. Michael Davis

Environmental and Water Resources Engineer Division
Technion - Israel Institute of Technology
Technion City
HAIFA 32000

tel: (04) 227.111 ext. 2359

Head:
Prof. Jacob Sear

The Dr. A. Felix Public Health Laboratory
Ministry of Health
Abu Kabir
P.O. Box 8255
TEL-AVIV

tel: (03)821.777

Director:
Dr. Yohay Yeshpe-Purer (Mrs)
ISRAEL (Cont.)

Public Health Laboratory
Public Health Department
Ministry of Health
P.O. Box 9526
HAIFA
tel: (04) 536201

Director:
Dr. Rachel Seligmann (Mrs)

Biological Research Laboratories
Institute of Evolution
University of Haifa
Mount Carmel
31999 HAIFA
tel: (04) 240448

Director:
Prof. Eviatar Nevo

Department of Zoology
Tel Aviv University
RAMAT AVIV
tel: 033-426262 Ext. 812

Head:
Prof. Z. Yaron

ITALY

Institute of Hydrobiology and Fish Culture
University of Messina
Via dei Verdi 73
98100 MESSINA
tel: 710617

Director:
Prof. Sebastiano Genovesi

Laboratory of Hydrobiology and Fish Culture
Institute of Comparative Anatomy
University of Siena
Via delle Carie, 3
53100 SIENA
tel: (0577) 288428

Director:
Prof. Dr. Aristeo Renzoni

Laboratory of Hydrobiology and Fish Culture
for Med II

Laboratory of Hydrobiology and Fish Culture
for Med III

Integrated for Med II

Integrated for Med III

UNEPI/IG.14/Inf. 4
ANNEX I

Dr. A. Seligmann signed 21.6.78 June 1978

Prof. E. Nevo signed 19.3.78 Jan. 1978

Prof. Z. Yaron cleared 22.5.78 April 1978

Prof. P. Crisafi negotiating

Prof. S. Genovesi signed 24.3.78 Jan 1978

Prof. Dr. A. Renzoni signed 1.9.78 Sept. 1976

Prof. Dr. A. Renzoni signed 8.3.78 March 1978

Oyster, seaplant, copepod and fish analyses reported
**ITALY (Cont.)**

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<td>University of Pavia</td>
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<td>12 Viaia Taramelli</td>
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ITALY (Cont.)

Group for Oceanographic Research - Genova
Institute of Hydrobiology and Fish Culture
University of Genova
Via Balbi 1
12126 GENOVA
tel: (010) 280-953

Chairman:
Prof. Norberto Della Croce

Institute of Hygiene
University of Trieste
Via dell'Istria 65/1
34137 TRIESTE
tel: (040) 728.303

Director:
Prof. Luigi Majori

Istituto Superiore di Sanità
Viale Regina Elena 299
00161 ROME
tel: (06) 4990

Director:
Prof. Francesco Pocchiari

Institute for Water Research - CNR
Via Renai 1
00198 ROME
tel: (06) 84-48-741

Director:
Prof. Roberto Passino

Station for Marine Biology
Institute of Zoology and Comparative Anatomy
University of Messina
Viale dei Verdi 75
98100 MESSINA
tel: 81-27-21

Director:
Prof. Arturo Balagnari

Institute of Zoology
"Federico Raffaele"
University of Rome
Viale dell'Università 32
00185 ROME
tel: (06) 4958259/4958254

Director:
Prof. Eri Manelli
<table>
<thead>
<tr>
<th>Country</th>
<th>Collaborator</th>
<th>Position</th>
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<td>ITALY</td>
<td>Institute of Hygiene, University of Genova</td>
<td>Prof. S. De Flora</td>
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<td>1975</td>
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<td></td>
<td>Institute of General and Inorganic Chemistry, Faculty of Industrial Chemistry, University of Venice</td>
<td>Prof. A.A. Orio</td>
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<td>Institute of Organic Chemistry, University of Genova</td>
<td>Prof. C. Dell'Erba</td>
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<tr>
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<td>Prof. S. Musumeci</td>
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For Med II: Negotiating
For Med III: Negotiating
For Med II: Signed August 1977
For Med III: Intercalib:
### MALTA

**The University of Malta**
**MSIDA**
tel: 36.450

Rector Magnificus
Prof. Edwin J. Borg-Constanza

<table>
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**Public Health Laboratory**
**Department of Health**
15 Merchants Street
VALLETTA
tel: 24071

Chief Medical Officer:
Dr. A. Grech

<table>
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<td>Spiteri</td>
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### MAROC

**Institut scientifique des Pechés maritimes**
Rue de Tiznit
B.P. 21
CASABLANCA
tel: 678.11

Directeur:
Dr. Mohamed Azzou

<table>
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The document includes a list of signatures and dates for various individuals in the fields of Med I, II, III, IV, VI, VIII, XI, and VII. The signatures are accompanied by dates, and the document is dated July 1976 for Med I, September 1976 for Med II, and so forth. The signatures are associated with individuals from the University of Malta and the Public Health Laboratory in Malta, as well as from the Institut scientifique des Pechés maritimes in Morocco. The text also includes a note that the dates are for specific reports or agreements, such as for Med II and Med III.
ANNEX I

**MAROC** (Cont.)

Faculté des Sciences
Université Mohamed V
Avenue Ibn Batouta
B.P. 1014
RABAT

**Doyen:**
Prof. Dr. Driss Khallal

**Professor:**
Prof. S. El-Kabir


Institut national d'Hygiène
Ministère de la Santé Publique
375 Avenue Mohamed V
RABAT

**Directeur:**
Prof. Moureidane Boumessadour


**PRINCIPIAUTE DE MONACO**

Centre scientifique de Monaco
Administration:
16 Boulevard de Suisse
MONTE CARLO

Laboratoires:
Avenue Saint-Martin
MONACO-VILLE

tel: (93) 302154/301514

**Président du Conseil d'Administration:**
S.E.M. César C. Stelmo
SPAIN

Instituto de Investigaciones Pesqueras
Paseo Nacional, s/n
BARCELONA 3
tel: 31 06 450

Director:
Dr. Buenaventura Andreu

<table>
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Laboratorio Oceanográfico del Mar Menor
Instituto Español de Oceanografía Magallanes s/n
P.O. Box 22
SAN PEDRO DEL PINATAR (Murcia)
tel: 57 05 29

Director:
Dr. Argeo R. de Leon

<table>
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Laboratorio Oceanográfico de Palma de Mallorca
Instituto Español de Oceanografía
P.O. Box 291
PALMA DE MALLORCA
tel: 230737

Director:
Dr. Miquel Duran

<table>
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Laboratorio Oceanográfico de Málaga
Instituto Español de Oceanografía
Paseo de la Farola 27
MÁLAGA
tel: 212810

Director:
Mr. Natalio Cano

<table>
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</table>
SPAIN (Cont.)

Jefatura Provincial de Sanidad
Avenida Maria Cristina, s/n
TARRAGONA

tel: (977) 202645, 201150, 201522

Director:
Dr. Alfredo Sardaj

Jefatura Provincial de Sanidad
Puente del Carmen 30
MALAGA

tel: (952) 216590, 227806

Director:
Dr. Marcelo Arce

Institute of Applied Organic
Chemistry
High Council of Scientific
Investigations
Calle Jorge Girona Salgado
BARCELONA 34

tel: 204.06.00

Director:
Prof. Dr. Manuel Gallester

SYRIA

Centre for Marine Research of
Latakia
Supreme Council of Sciences
Abou-Iisaa Al-Maari Avenue
P.O. Box 8762
DAMASCUS

tel: 339754

President:

TUNISIE

Institut national scientifique
et technique d'Oceanographie
et de Pesca
SALAMBO

tel: 275.632

Director:
M. Medj Ali Salem

UNEPI/IG.14/Inf.4
ANNEX I

(16)

Med VII Dr. R. Mujeriego signed April 1977

Med VII Dr. R. Mujeriego 25/8.77

Med VI Dr. J. Albaiges negotiating

Med VII Dr. J. Albaiges

Med IV intercalib. for Med II

Med XI intercalib. for Med III

Med III M. H.A. Salem signed 3.11.76 Jan. 1977

Med I M. H.A. Salem cleared 2.1.77 June 1977

Med III M. H.A. Salem signed 3.11.76 Jan. 1977

Med XI intercalib. for Med II

Med XI intercalib. for Med III
TUNISIE (Cont.)

Laboratoire Central
Ministère de l'Industrie des Mines et de l'Énergie
23, Rue Jawhara Leil Nuhru
(Ex, Rue Dr. Braquehaye)
Montfleury - TUNIS

tel: 244 322

Directeur:
Dr. Ridha Boualilil

Institut Pasteur
13 Place Pasteur
TUNIS

tel:

Directeur:
Prof. A. Chadli

TURKEY

Hydrobiological Research Institute
Faculty of Science
University of Istanbul
Rumelifeneri
ISTANBUL

tel: 65 15 11

Director:
Prof. Dr. Lutfi Biran

Marine Science Department
Middle East Technical University
P.O. Box 28
ERDEM E-ICEL

tel: Erdemli 342

Chairman:
Prof. Dr. Turgut I. Balkas

(17)
TURKEY (Cont.)

Department of Biological Oceanography and Institute of Hydrobiology
Faculty of Science, Ege University
Mevlana Cad. No. 26
SÜREN/İZMİR

tel: 180110

Director:
Prof. Münir Geldiay

Med II
Dr. S. Uysal
signed 14.4.77
March 1977

Med IV
Dr. S. Uysal
signed 14.4.77
Feb. 1977

Med V
Dr. A. Kocatas
signed 14.4.77
Jan. 1977

Med XI
intercalib. For Med II
sea-plank and copepod analyses reported

General Directorate of Fisheries
Su Usunlari Genel Mudurlugu
Sanlılık Sokak 21
SİHİLE/ANKARA

tel:

Director:
Mr. Elma Ozal

Med II
Mr. H. Kulan
cleared 4.3.77
March 1977

Med III
Mr. N. Nazli
cleared 4.3.77
March 1977

Med IV
Mr. C. Cethin
cleared 4.3.77
after the completion of training

Med V
Mr. E. Gürğ
cleared 4.3.77
after the completion of training

Med XI
intercalib. For Med II

intercalib. For Med III

Department of Environmental Engineering
Faculty of Engineering
Middle East Technical University
ANKARA

tel: 237100

Chairman
Prof. Dr. S. Erol Ulug

YUGOSLAVIA

Laboratory for Trace Element Analyses
Department of Physics and Mathematics
Faculty of Industrial Pedagogy
University of Ljubljana
Osikinska 14
LJUBLJANA

Med IV

Med II
Prof. Dr. V. Valkovic
signed 14.9.76
March 1976

and Dr. A. Cjubic

Med XI
intercalib. For Med II
oyster analysis reported

Med
negotiating

Head:
Prof. Dr. Vlada Valkovic

tel: (051) 23.296
YUGOSLAVIA (Cont.)

Institute for Oceanography and Fisheries
At Marjan
P.O. Box 114
SPLIT
Tel: 46.682

Director:
Mr. Rade Stijelja

Med I
Dr. L. Stojanowski
signed 10.2.77
March 1977

Med II
Dr. T. Mucetic
signed 10.2.77
March 1977

Med III
Dr. R. Mazic
signed 10.2.77
March 1977

Med IV
Dr. T. Pucher-Petkovic
signed 30.6.77
April 1977

Med V
Dr. M. Zore-Armanda
signed 3.3.77
Jan. 1977

Med VI
Dr. S. Sobot
signed 7.10.77
Nov. 1976

Med VII
intercalib. for Med II

Med XI
intercalib. for Med III

The Biological Institute
J. G. Dovoranic
P.O. Box 39
Dubrovnik

Tel: (020) 27-937

Director:
Prof. Dr. Tomo Gavulin

Med II
Dr. D. Vilibic
signed 13.10.76
Sept. 1976

Med IV
Dr. F. Kranich
signed 20.8.77
Nov. 1976

Med V
Dr. A. Benovic
signed 27.1.77
Nov. 1976

Med XI
intercalib. for Med III

samples analyzed
reported
YUGOSLAVIA (Cont.)

Centre for Marine Research
"Adujer Boskovic" Institute
P.O. Box 1016, Bajenicka 94
ZAGREB

tel: (041) 38.541/424.355

Director General:
Mr. Vojno Kundac

Director of Rovinj Centre:
Dr. Marko Brancic

---

Date: Med 
Dr. V. Prvulic 
signed 3.3.77 
Jan. 1977

Date: Med II
Dr. M. Branica 
signed 24.9.76 
Sept. 1976

Date: Med III
Mr. N. Smolakca 
signed 24.9.76 
June 1976

Date: Med IV
Dr. S. Kurelec 
signed 24.9.76 
June 1976

Date: Med V
Dr. D. Zavodnik 
signed 24.9.76 
July 1976

Date: Med VI
Dr. Lj. Jefitis 
signed 8.9.76 
Jan. 1977

Date: Med VII
Ms. D. Fuksa 
signed 4.8.77 
June 1976

---

Date: Med XII
intercalib. 
For Med II

---

Date: RAC I
Dr. M. Brancic 
signed 21.4.77 

---

Marine Biological Station
Institute of Biology
University of Ljubljana
P.O. Box 16
PORTOROZ

tel: (066) 73-373

Director:
Prof. Dr. Miroslav Zecevic

(Director General:)
Prof. Matija Gogala
Institute of Biology
University of Ljubljana
P.O. Box 141
LIBLJANA

tel: (061) 22121

Date: Med II
Prof Dr. S. Gasparin 
signed 23.8.76 
June 1976

Date: Med III
Dr. J. Gencelj 
signed 23.8.76 
June 1976

Date: Med V
Dr. J. Stirm 
signed 23.8.76 
Sept. 1976

Date: Med VII
Ms. M. Lenarcic 
signed 2.8.77 
October 1977

---

Date: Med XII
intercalib. 
For Med II

---

Date: Med XIII
intercalib. 
For Med III
REGIONAL ACTIVITY CENTRES (RAC) FOR MED POL PROJECTS

1. For pilot project on Baseline Studies and Monitoring of Oil and Petroleum Hydrocarbons in Marine Waters:

   University of Malta
   Msida
   Malta

   Responsible for RAC I: Dr. M. Sammut

2. For pilot project on Baseline Studies and Monitoring of Metals, particularly Mercury and Cadmium, in Marine Organisms:

   Centre for Marine Research
   "Rudjer Boskovic" Institute
   Rovinj/Zagreb
   Yugoslavia

   Responsible for RAC II: Dr. M. Granica

3. For pilot project on Baseline Studies and Monitoring of DDT, PCBs and Other Chlorinated Hydrocarbons in Marine Organisms:

   Marine Science Department
   Middle East Technical University
   Erdemli - Içel
   Turkey

   Responsible for RAC III: Prof. Dr. T. I. Balkas

4. For pilot project on Research on the Effects of Pollutants on Marine Organisms and their Populations:

   Station Marine d'Endoume
   Marseille
   France

   Responsible for RAC IV: Prof. J.-M. Pérès
5. For pilot project on Research on the Effects of Pollutants on Marine Communities and Ecosystems:

Centre de Recherches Océanographiques et des Pêches
Alger
Algérie

Responsible for RAC V : Dr. A. Semruda

6. For pilot project on Problems of Coastal Transport of Pollutants:

Institute of Oceanography and Fisheries
Mediterranean Branch
Alexandria
Egypt

Responsible for RAC VII : Dr. M. A. Gerges

7. For pilot project on Coastal Water Quality Control:

Istituto Superiore di Sanità
Rome
Italia

Responsible for RAC VII : Prof. F. Pooniieri
INTERCALIBRATION OF ANALYTICAL TECHNIQUES
AND COMMON MAINTENANCE SERVICES

The tables of this annex are based on reports submitted by the
IAEA International Laboratory of Marine Radioactivity in Monaco.

Contents

Table 1 : State of the result reporting in the intercalibration
exercises related to MED POL II project on
15 September 1978

Table 2 : State of the result reporting in the intercalibration
exercises related to MED POL III project on
15 September 1978

Table 3 : Maintenance services provided to participants in MED POL
(November 1976 - November 1978)
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<td>F. Voutsinou</td>
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<td>A. P. Grimanis</td>
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<td>Gen. Chem. Stats Lab., Div. of Env. Poll. Cont., Athens</td>
<td>O. G. Markettas</td>
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| Nr. of samples sent | 19 | 31 | 31 | 20 |
| Nr. of results reported | 17 | 20 | 20 | 9 |
Table 2. State of the result reporting in the intercalibration exercises related to MED POL III project on 15 September 1978

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No. of samples sent | 25 | 13 | 9 |
No. of results reported | 10 | 7 | 5 |
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