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PROGRESS REPORT ON THE IMPLEMENTATION OF THE MED POL-PHASE II
IN 1985-1986 AND PLANNED ACTIVITIES FOR 1986-1987

In Co-operation with



FAO



UNESCO



WHO



WMO



IAEA



IOC

UNEP

Athens, 1986

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INTRODUCTION

1. The present document was prepared for the Fourth Meeting of the Working Group by the secretariat, in close collaboration with the MED POL co-operating agencies (FAO, UNESCO, WHO, WMO, IAEA and IOC). The document contains information on the progress achieved in the implementation of MED POL during the period January 1985 - March 1986. The layout of the document follows the relevant structure of the MED POL - PHASE II programme description, as adopted by the Second Meeting of the Contracting Parties (UNEP/IG.23/11).

2. The Working Group is invited to review the contents of the document, to evaluate the achieved results and to advise UNEP on technical and policy matters, as needed for the further implementation of the work.

3. Since the last meeting of the Working Group, MED POL continued to develop taking into account its general objectives and principles approved by the Contracting Parties and the specific guidance received from the previous meetings of the Working Group.

4. By the end of March 1986, 104 collaborating MED POL research centres have been involved in the monitoring and research activities, six scientific meetings have been organised or sponsored by UNEP and the co-operating agencies, US\$ 214,500 have been provided as direct assistance to participants in the monitoring programmes, US\$ 376,160 have been provided for the research activities and US\$ 44,000 have been spent for training and fellowships.

MONITORING

5. By the end of March 1986 the secretariat received descriptions of twelve national monitoring programmes from the MED POL National Co-ordinators. A formal agreement on these programmes was reached (and signed) between the secretariat and the relevant national authorities in eight States (Algeria, Cyprus, Israel, Lebanon, Libya, Malta, Morocco and Yugoslavia). It is expected that during 1986 four new agreements (Egypt, Greece, Tunisia and Turkey) will be signed for the first time. The status of national monitoring programmes is summarized in annex I, tables 1 and 2. The national institutions and scientists designated by their MED POL Co-ordinators as participants in the monitoring programme are listed in annex II.

6. A number of National Co-ordinators did not provide the secretariat with either a proposal for their national monitoring programmes or with the complementary information requested by the secretariat and thus agreements on monitoring activities could not be established with all Contracting Parties (annex I, table 2).

7. The main difficulties encountered in involving all Contracting Parties in the monitoring programme are:

- lack of adequate co-ordinating mechanisms at national level,
- lack of either funds or of administrative arrangements at national level for institutions to be involved in monitoring activities, and,
- in a few cases, the national monitoring programmes submitted to UNEP did not follow the agreed guidelines or were submitted in incomplete form, delaying the processing of their contents and the establishment of signed agreements.

8. These difficulties resulted in delays in the progress of the programme and, more important, in the provision of assistance under the coverage of the agreements between UNEP and the relevant national authorities. Thus, assistance was provided by the secretariat only to institutions in those countries where agreements had been signed by the two sides.

9. In particular, the countries who benefited of MED TRUST FUND assistance and the amounts provided in terms of equipment and materials for 1985 programmes are as follows: Algeria US\$ 30,000, Cyprus US\$ 22,500, Israel US\$ 38,000, Lebanon US\$ 20,000, Malta US\$ 20,000, Morocco US\$ 40,000, Yugoslavia US\$ 44,000. In some countries, as at March 1986, equipment and material relative to the indicated amounts are still being purchased.

10. The parameters as well as the number of stations for the sampling at the sources of pollution, in the coastal waters and in the reference areas covered by the ongoing national monitoring programmes are given in annex III.

Monitoring of sources of pollution

11. No inventories of the major sources of pollution (expected according to Art. 13.2 of the LBS protocol) have been received.

12. Reports providing data on the monitoring of some selected effluents (expected according to Art. 13b of the LBS protocol) have been received from Cyprus, Malta, Morocco and Yugoslavia (annex I).

13. The data received are being entered into the data bank of the Co-ordinating Unit of the MAP.

Monitoring of coastal waters, including estuaries

14. Data reports on the monitoring of coastal waters and estuaries have been received from Cyprus, Israel, Lebanon, Malta, Morocco and Yugoslavia (annex I).

15. The data received are being entered into the data bank of the Co-ordinating Unit of the MAP.

Monitoring of reference areas (open sea)

16. Data reports on the monitoring of reference areas have been received only from Yugoslavia (annex I).

17. The data received are being entered into the data bank of the Co-ordinating Unit of the MAP.

Monitoring of the transport of pollutants through the atmosphere

18. Following the decision of the Contracting Parties to consider the first phase of this monitoring as research (UNEP/IG.23/11, paragraph 41), the implementation of this activity has been included under research activity 'I' (paragraphs 44-45).

19. At the request of UNEP, the GESAMP Working Group on Interchange of Pollutants between the Atmosphere and the Oceans defined the transport processes towards and into the Mediterranean Sea, reviewed the relevant scientific literature and assessed the atmospheric pathways and fluxes of pollutants important for the Mediterranean Sea (GESAMP Reports and Studies No. 26).

20. Based on GESAMP's recommendations, an attempt is being made to build up a small monitoring network. During the Third Meeting of the Working Group for Scientific and Technical Co-operation for MED POL (Athens, May 1985), the implementation of a pilot project to study air pollutant deposition into the Mediterranean region was discussed. The World Meteorological Organization (WMO) expressed the willingness to assist in the implementation of the project and invited National Co-ordinators to nominate by 1 September 1985 the national experts who would participate in the project (UNEP/WG.118/9, para 32c).

21. Furthermore, the Fourth Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Related Protocols (Genoa, September 1985) recommended that "a pilot project on studying air pollutant depositions into the Mediterranean region and pollutant concentrations in air should be initiated in 1986 in as many countries as possible on the basis of programme proposals agreed upon by experts nominated by National Co-ordinators" (UNEP/IG.56/5, page 32).

22. A reminder was sent to all Contracting Parties in February 1986 and, as a result, institutions and experts from Algeria, Cyprus, Israel, Italy, Libya, Spain, Tunisia and Yugoslavia were designated to participate in the pilot project.

RESEARCH AND STUDY TOPICS

23. As a follow-up to the decisions of the Third Meeting of the Working Group, the secretariat contacted all MED POL National Co-ordinators soliciting new research proposals for 1985. The procedures followed by the secretariat and the relevant MED POL co-operating agencies in selection and funding of projects were those endorsed by the Third Meeting of the Working Group (UNEP/WG.118/9).

24. During 1985 there were 133 ongoing research projects carried out by 80 research centres in 13 Mediterranean States, with US\$ 376,160 provided to them as 1985 assistance from the MAP. Annex IV lists all the ongoing research projects by activity and indicates the assistance provided to them in 1985 as well as the co-operating agency assisting their implementation.

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

25. During 1985 there were twelve ongoing projects from eleven laboratories in five countries and total assistance amounted to US\$ 42,000.

26. In parallel to some research work on new methodologies carried out in Israel, Italy and Yugoslavia, work continued on the development, testing and updating of the reference methods on the determination of halogenated hydrocarbons and arsenic in marine organisms and on the current microbiological methods, especially those connected with determination of faecal coliforms and faecal streptococci in sea-water, in the light of new developments regarding the advantages/disadvantages of recommended culture media and the effect on results. New reference methods were issued on the determination of total coliforms, faecal coliforms and faecal streptococci in sea-water by the MPN method in both english and french versions. Six other methods dealing with pathogenic organisms in sewage, sea-water, sediments and/or sand, with guidelines for health-related monitoring and with statistical evaluation of results were finalized. The development of four other methods (BOD/COD, nitrogen and phosphorus in estuarine waters and mercury and selenium in human hair) continued. Preparations started on the reference methods for the determination of the lethal and sub-lethal toxicity of selected substances on marine organisms.

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

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

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

27. The Meeting of Experts on the Technical Implementation of the Land-based Sources Protocol (Athens 9-13 December 1985), agreed to start implementing as from 1986 the above research activities, which had been kept in abeyance as a decision of the Contracting Parties. A reminder was sent to all National Co-ordinators soliciting research proposals relevant to the year 1986.

Activity D (Epidemiological studies related to Environmental Quality Criteria)

28. During 1985 there were fifteen ongoing projects from ten laboratories in six countries and total assistance amounted to US\$ 63,500.

29. Work continued on the correlation between coastal water quality and health effects on swimmers, and it is now becoming increasingly evident that (a) non-enteric diseases are assuming more importance in a number of countries, as opposed to the normal enteric diseases associated with swimming, and (b) a number of diseases might have no correlation with water quality in terms of exposure to sewage effluents. A consultation meeting on the correlation of coastal water quality and health effects was convened by WHO/UNEP in Follonica, Italy from 21 to 25 October 1985. During this meeting, relevant international experience on epidemiological studies was reviewed, and a protocol for the conduct of such studies under Mediterranean conditions finalized. Work also continued on the correlation between bacterial indicators and pathogens, and on virus concentrations in sea-water.

30. Progress continued in the project on methylmercury intake through seafood and health effects, which became operational in Greece and Italy in addition to Yugoslavia. Preliminary results indicated that in the areas selected, a proportion of sample populations have a higher intake of mercury than the accepted limits. The draft protocol for epidemiological studies, which will form the second phase of the project, was revised, and will be discussed at a consultation meeting to be held in Athens from 15 to 19 September 1986. The meeting will also review the status of the project, with a view to submitting an interim report to the 1987 Working Group Meeting. In at least one country, the project has stimulated considerable interest on the part of national authorities, which are currently actively considering an extra input from national and international sources to expand it.

Activity F (Research on oceanographic processes)

31. During 1985 there were ten ongoing projects from nine laboratories in four countries and total assistance amounted to US\$ 60,300.

32. Various projects were implemented dealing with mathematical modelling, current measurements, study of oceanographic processes and air-sea interaction and studying suspended matter and its role in the transfer of substances in various areas. A review aiming at an assessment of the role of physical processes in relation to monitoring and control of pollution of the Mediterranean sea was initiated. A consultation of experts was held to discuss the content and structure of the review, dividing the work between experts and deciding on a time schedule for the work. The present knowledge on processes will be reviewed together with the methodologies and technological developments and gaps identified.

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

33. During 1985 there were twenty-six ongoing projects from twenty-three laboratories in ten countries and total assistance amounted to US\$ 64,000.

34. Work continued under this activity on the various aspects of toxicity to marine organisms and a number of new projects were approved. A number of final reports of these projects were received and are being evaluated for publication in the MAP Technical Reports Series. The projects dealt with the toxicity of heavy metals, halogenated hydrocarbons, oil, oil dispersants and organosilicons to marine organisms.

35. Work also continued on mutagenicity and carcinogenicity of marine pollutants, taking into account the potential end-effects on man. The projects currently ongoing stimulated interest from the private sector in one country, and resulted in the acquisition by the relevant national institutions of 5 research fellowships as well as additional research funds from private national sources. Initial contact was established with the International Agency for Research on Cancer (IARC) in Lyon, and as from 1986, individual projects will form part of a complementary network, which will have improved access to already-existing international work.

Activity H (Eutrophication and concomitant plankton blooms)

36. During 1985 there were seven ongoing projects from five laboratories in three countries and total assistance amounted to US\$ 3,000.

37. Projects under this activity deal with the relationship between phytoplankton blooms and dissolved organic matter, the modelling of eutrophication processes and the presence of toxic dinoflagellates in blooms. Some of the projects were completed, the final reports of which will be published in the MAP Technical Reports Series after evaluation. Guidelines for the assessment of receiving capacity for eutrophication substances are being prepared by UNESCO in co-operation with FAO.

Activity I (Pollution-induced ecosystems modifications)

38. During 1985 there were fourteen ongoing projects from twelve laboratories in six countries and total assistance amounted to US\$ 11,000.

39. The ongoing projects under this activity deal with the effects of pollution on marine communities. A meeting took place in Blanes, Spain (7-11 October 1985) at which Mediterranean scientists had the opportunity to present their work on the effects of pollution on marine ecosystems and discuss the various methodological problems. The ways of treating the results as well as the criteria used for evaluating pollution effects were also discussed. The meeting recommended inter alia the setting up of a small working group to co-ordinate and carry out inter-laboratory exercises involving the evaluation of specific methods for sampling data analysis. The need for formal training courses was also recognized, the most urgent need being in the analysis and interpretation of data.

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

40. During 1985 there were two ongoing projects from two laboratories in two countries and no assistance was provided.

41. The two case-studies approved in 1983 are still in progress. One of them studies the effects of thermal effluents on the littoral, benthic and fish communities in Vasiliko area of Cyprus and the other one studies the mid-littoral algal population and the foraminiferous epiphytic population of the P. oceanica laminae in the area of Civitavecchia, Italy, with an aim to illustrate the possible effects of the thermal discharges of a new power plant.

Activity K (Biogeochemical cycles of specific pollutants)

42. During 1985 there were twelve ongoing projects from twelve laboratories in eight countries and total assistance amounted to US\$ 28,000.

43. Work continued on the survival of bacterial indicators and pathogenic organisms under conditions prevailing in the Mediterranean. The results are now under evaluation with a view to providing an input into other studies connected with the implementation of the LBS protocol, particularly the study on submarine outfall structures commencing in 1986. There are also ongoing projects under this activity dealing with the various aspects of the biogeochemical cycle of mercury.

Activity L (Pollutant-transfer processes)

44. During 1985 there were twelve ongoing projects from twelve laboratories in six countries and total assistance amounted to US\$ 70,360.

45. A number of projects were carried out covering various types of processes associated with physical and geochemical pollutant transfer. Additional information on work related to this activity is given in paragraphs 18-22.

Jellyfish programme

46. During 1985 there were twenty-three ongoing projects from twenty-two laboratories in six countries and total assistance amounted to US\$ 34,000.

47. During 1985 a number of projects were implemented following the main subjects adopted as part of the jellyfish programme. Work continued on the monitoring of mass occurrences of jellyfish in the Adriatic, the Aegean, the Ionian, the Tyrrhenian and the Ligurian seas. Research work was conducted on the biological and behavioural aspects of the various life stages of jellyfish as well as on the co-relations between the different environmental parameters and mass occurrences of jellyfish. A small review meeting of government-selected scientists participating in the programme was held in Trieste (27-29 January 1986) to discuss the progress made in the implementation of the programme and to propose follow-up actions (UNEP/WG.145/3).

ENVIRONMENTAL QUALITY CRITERIA

48. Work on the preparation of environmental quality criteria continued. In September 1985, environmental quality criteria for mercury in seafood and for microbial pollution in bathing waters were adopted by the Fourth Meeting of the Contracting Parties (UNEP/IG.56/5). Since then work continued for a number of pollutants on the scientific rationale which will eventually lead to the formulation of environmental quality criteria. In particular, this meeting will examine the assessment of the present state of pollution by petroleum hydrocarbons (UNEP/WG.144/9), microbial pollution of shellfish and shellfish growing waters (UNEP/WG.144/10), cadmium, copper, zinc and lead (UNEP/WG.144/11) and used lubricating oils (UNEP/WG.144/12). Work on the preparation of environmental quality criteria for other pollutants is progressing in accordance with the adopted workplan and timetable for the implementation of the Land-based Sources Protocol (UNEP/WG.144/6).

REFERENCE METHODS

49. The work on the preparation or the updating of reference methods to be used in the monitoring programme continued in 1985 under the over-all co-ordination of the Ocean and Coastal Areas Programme Activity Centre (OCA/PAC) of UNEP with the active collaboration of all co-operating agencies. As in the previous years, the International Laboratory for Marine Radioactivity of the IAEA in Monaco carried out the technical co-ordination of the development and testing of the reference methods. Information on the status of preparation of the methods is given in paragraphs 25-26 while a complete list of the methods is presented in annex V.

DATA ANALYSIS AND DISSEMINATION

50. A number of data have been gathered as a result of the MED POL - PHASE II activities. With regard to the monitoring, as at March 1986, six countries have submitted data which cover the work carried out since 1982 (annex I, table 1 and annex III). Through the research projects, including the jellyfish programme, data have also been obtained from the progress and final reports on laboratory and field experiments. In addition, a large number of data is expected during 1986 through the implementation of the Survey of Land-based Sources and Amounts of Pollutants reaching the Mediterranean Sea (UNEP/WG.144/7).

51. All the data received have been or are being entered into the data bank of the Unit. Extensive work has been carried out to prepare or update the necessary computer programmes to be able to receive and process the expected data.

52. As in the past, during 1985 the data bank of the Unit was extensively used for the preparation of the various assessment of pollutants (UNEP/WG.144/9, UNEP/WG.144/10 and UNEP/WG.144/11), as requested for the implementation of the Land-based Sources Protocol. The assessments represent the scientific rationale needed for the formulation of environmental quality criteria.

53. As to the dissemination of the data, during 1985 and 1986 extensive editorial work has been carried out to allow the launching of the MAP Technical Reports series. The series covers selected reports obtained through the implementation of the various MAP activities: the Long-term Programme for Pollution Monitoring and Research, Blue Plan, Priority Action Programme, Regional Oil Combating Centre and Specially Protected Areas. MED POL - PHASE I reports have been published (reference documents) and, at present, a large number of MED POL - PHASE II research reports are being edited and will be published during 1986.

INTERCALIBRATION AND QUALITY CONTROL OF DATA

54. In the effort to improve the quality and reliability of analytical data, the intercalibration exercise was made mandatory to all countries participating in the MED POL programme. The Monaco Laboratory of IAEA organized during 1985 two intercalibration exercises covering petroleum hydrocarbons, trace metals and halogenated hydrocarbons (UNEP/WG.144/Inf.3 and UNEP/WG.144/Inf.4). In addition, individual requests for intercalibration samples were met according to the availability of the samples (annex VI).

55. The first series of intercalibration exercises on microbiological methods in coastal water quality control, organized by WHO in co-operation with the secretariat was concluded in 1985 with two exercises in Split, 15-20 April (UNEP/WG.144/Inf.5) and Marseille, 18-23 November. Standard reference methods were used, and the exercises combined with consultation meetings to review results. A comprehensive review of the whole series of intercalibration exercises is presented in document UNEP/WG.144/Inf.6.

56. In order to make full use of the results of the various intercalibration exercises, contacts have been made with laboratories where the results had shown methodological problems in the handling of the samples (sampling and/or analysis) The intention of the secretariat is to strengthen this link with the participating laboratories and to use, as much as possible, the training component of MED POL as needed.

MAINTENANCE

57. Maintenance services of analytical instruments, organised during the pilot phase of MED POL by UNEP in collaboration with IAEA's International Laboratory for Marine Radioactivity (ILMR) in Monaco, continued to be provided to the MED POL participating institutions in various countries. In addition to the regular and emergency service visits carried out by the maintenance engineer from ILMR for instruments provided through MED POL, other instruments used for the programme were serviced (annex VII). In addition to laboratory and field instruments, during 1985 the ILMR maintenance engineer was in charge of the installation of the WANG computers provided to the SPA/RAC in Tunis, ROCC in Malta and PAP/RAC in Split. Maintenance of these systems will be continued in 1986 through the ILMR engineer.

ASSISTANCE, TRAINING AND FELLOWSHIPS

58. Assistance has been provided to MED POL participants in the form of individual and group training, support for participation at MED POL meetings (workshops and intercalibration exercises) and travel grants for attendance at meetings related to the MED POL programme. The list of those who benefited from MAP support is given in annex VIII.

CO-ORDINATION

59. Based on the decisions of the Contracting Parties or of their Bureau, as appropriate, and the guidance provided by the meetings of the Working Group, the overall co-ordination and organization of MED POL continued to be ensured by UNEP, through the Co-ordinating Unit for the Mediterranean Action Plan (MAP), as an integral part of MAP and UNEP's Oceans and Coastal Areas Programme Activity Centre (OCA/PAC).

60. The monitoring activities of MED POL are co-ordinated by the secretariat directly through direct contacts with the MED POL National Co-ordinators and with the participation of the relevant co-operating agencies (FAO, UNESCO, WHO, WMO, IAEA, IOC).

61. While the overall co-ordination of MED POL research activities rests with the secretariat, the relevant co-operating agencies provide the guidance for research projects through direct contacts with the national research centres.

62. The active support of and close collaboration with the co-operating agencies remained an important factor contributing very significantly to the implementation of MED POL. In addition to the frequent ad hoc contacts between the secretariat and the co-operating agencies, two meetings of the Inter-Agency Advisory Committee (IAAC) for MED POL took place since the Third Meeting of the Working Group, in order to ensure harmonious co-operation in the implementation of MED POL:

- XVIII Meeting of IAAC (Athens, 26 May 1985): it was held in conjunction with the Third Meeting of the Working Group and reviewed the activities of MED POL carried out during 1984 and agreed on the 1985-1987 workplan and modalities of co-operation;
- XIX Meeting of IAAC (Athens 13-17 January 1986): it reviewed the activities carried out during 1985 and the procedure for the implementation of all the actions recommended by the Third Meeting of the Working Group (May 1985), the Fourth Ordinary Meeting of the Contracting Parties (September 1985) and the Meeting of Experts of the Technical Implementation of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources (December 1985).

63. The report of the Third Meeting of the Working Group (UNEP/WG.118/9), including its recommendations, was submitted to the Fourth Ordinary Meeting of the Contracting Parties (Genoa, 9-13 September 1985). The recommendations of the Working Group as approved by the Contracting Parties are contained in document UNEP/IG.56/5.

BUDGETARY CONSIDERATIONS

64. The MED POL budget for 1985, as approved by the Extraordinary Meeting of the Contracting Parties (Athens, 10-13 April 1984) and the budget for 1986-1987, as approved by the Fourth Ordinary Meeting of the Contracting Parties (UNEP/IG.56/5) are presented in annex IX to this document for the Working Group's information. The approved budget for 1986-1987 relevant to the implementation of the Land-based sources Protocol activities is contained in document UNEP/WG.144/6.

ACTIVITIES PLANNED FOR 1986-1987

Recommendations of the Contracting Parties

65. The monitoring and research activities of MED POL - PHASE II during the biennium 1986-1987 are those recommended by the Fourth Ordinary Meeting of the Contracting Parties (UNEP/IG.56/5, pages 27-32). These recommendations, extracted from the above mentioned document are presented in paragraphs 66-67 here below.

66. Monitoring:

- (a) Continuation of negotiations with the MED POL National Co-ordinators in order to increase the contributions to MED POL - PHASE II through their National Monitoring Programmes; specific efforts will be made to improve the presently insufficient coverage of the Mediterranean with the monitoring programme and to achieve a more efficient and meaningful regular reporting on the obtained results;
- (b) Continuation of contacts with national research centres designated as participants in the monitoring activities of MED POL - PHASE II in order to facilitate their participation in the programme;
- (c) Provision of equipment, training and fellowships to national research centres, at the request of, and in consultation with, MED POL National Co-ordinators in the States with signed National Monitoring Programmes;
- (d) Continued support to the participants in MED POL through the common maintenance services, provision of reference methods for marine pollution studies, provision of reference material and standards, and through involvement in intercalibration in order to assist them to improve the quality of their data;
- (e) Strengthening of the computerized MED POL data bank by processing of data reported to the Secretariat and preparation of periodic data profiles on contaminants of specific and general interest;
- (f) Development and testing of additional reference methods for marine pollution studies and preparation of additional standards and reference materials relevant to parameters to be monitored during MED POL - PHASE II;
- (g) Implementation of a pilot project to assess the feasibility of monitoring pollutant transport into the Mediterranean Sea through the atmosphere;
- (h) Preparation of inventories of sources and amounts of pollutants from land-based sources;
- (i) Assessment of the type and amount of selected substances reaching the Mediterranean through natural processes from land-based or maritime sources;

- (j) Organization of smaller ad hoc meetings of scientists/experts from collaborating research centres to discuss specific problems of particular importance for the implementation of the monitoring programme and in particular, a consultation meeting to assess the results of monitoring the pollutants from land-based sources, including the effectiveness of presently used methodology and sampling strategies;
- (k) Sponsoring the participation of scientists/experts in meetings organized by other bodies on subjects relevant to monitoring activities of MED POL;
- (l) Evaluation of the monitoring component of the MED POL programme. The Secretariat, in consultation with Mediterranean scientists/experts playing an active role in the programme, will prepare the necessary documentation which will be submitted for a thorough review to the 1987 Meeting of the Working Group for Scientific and Technical Co-operation for transmission to the Contracting Parties.

67. Research:

- (a) During the 1986/1987 biennium the selection and funding of research proposals will follow the procedures endorsed by the Working Group for scientific and technical co-operation and approved by the Contracting Parties.
- (b) The already existing close link between the research and the monitoring components of MED POL will be strengthened in order to make full use of the results of the research activities in the assessments of the state of pollution of the Mediterranean Sea.
- (c) In order to facilitate the evaluation of the results coming from individual research projects, a more co-ordinated approach in the implementation of the projects will be followed. Scientific workshops and experts meetings will be held on topics which need a common methodology for sampling and analysis and co-ordination of work between research centres.
- (d) Specific activities proposed for individual research topics are listed here below.

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

- 1. The development of new reference methods and the revision of the existing ones will closely follow the needs of the monitoring component of MED POL. Research projects will be limited to those considered necessary for achieving this goal.
- 2. Intercalibration exercises will be made mandatory for participants in the monitoring programme in order to ensure the comparability of the results and the quality of data.
- 3. A few research proposals will be solicited to develop and test reference methods relevant to the analysis of levels and effects of chemical contaminants in marine organisms.

4. The Joint IOC/UNEP Group of Experts on Methods, Standards and Intercalibration (GEMSI) will continue to assist in the development and in reviewing the new reference methods.
5. One expert meeting and one intercalibration exercise are planned to be convened in connection with Activity 'A':
 - review of new reference methods for the determination of chemical contaminants (end of 1986),
 - intercalibration exercise for reference methods dealing with petroleum hydrocarbons (early 1986);

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

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

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

1. These activities are directly related to the implementation of the LBS Protocol, and their orientation will be based on the recommendations of the Expert Group Meeting on the Technical Implementation of the Protocol to be held in Athens, 9-13 December 1985.

Activity D (Epidemiological studies related to Environmental Quality Criteria)

1. It is intended to convert the present loose network of Mediterranean institutions working on the correlation between coastal water quality (recreational and shellfish-growing waters) and health effects into a more coherent one, with maximum complementarity between institutions, all of which will be working according to the same guidelines and towards one common objective. Liaison will also be ensured to the fullest extent possible with similar programmes outside the region to avoid duplication and minimize overlap. It is proposed to convene a consultation meeting in 1987 with the main objectives of (a) assessing and harmonizing the results of individual institutions, (b) reviewing the impact of such results on the requirements of the monitoring programme, and (c) discussing the scientific rationale required to evaluate the effect of the applications of environmental quality criteria for the relevant parameters.
2. By the beginning of 1986, the project on evaluation of methylmercury in Mediterranean populations and related health hazards is expected to be fully operational in at least four Mediterranean countries (Egypt, Greece, Italy and Yugoslavia). During 1986 and 1987, this project will continue its course, together with supporting studies, with possible expansion to other areas which might present mercury anomalies.

In at least one country, the second phase of the project (the clinical epidemiological phase) is expected to commence in 1986. It is proposed to hold a consultation meeting during the second half of 1986 with the aims of (a) assessing results obtained to date, and (b) providing an interim report to the Contracting Parties, on the basis of which appropriate control and health protection measures could be carried out.

Activity F (Research on oceanographic processes)

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

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

1. The ongoing research projects on the carcinogenicity and mutagenicity of pollutants will be more intimately linked with the WHO/UNEP/ILO and WHO/EURO programmes on chemical safety and other activities being carried out at the WHO International Agency for Research on Cancer (IARC) to ensure that no duplication or overlap take place. The conclusions and recommendations of the Meeting on toxicity and bioaccumulation of selected substances in marine organisms (Rovinj, 5-9 November 1984) will be taken into consideration when approving new research proposals.
2. Two reference methods will be developed relevant to this field. The first one concerns acute toxicity testing and the second one testing sub-lethal effects of toxic substances on marine organisms.

Activity H (Eutrophication and concomitant plankton blooms)

1. Based on UNESCO's guidelines for the assessment of receiving capacity of waters for eutrophication substances, a meeting will be convened to agree on appropriate methods for eutrophication assessment and identify markedly eutrophied areas. A pilot project proposed to start in 1987, should include comparative studies in eutrophication of several coastal areas and will serve as a basis for a long-term eutrophication monitoring programme.
2. Depending on the analysis of the results obtained through the jellyfish programme, the programme may be extended for the 1986-1987 biennium.

Activity I (Pollution-induced ecosystems modifications)

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

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

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

Activity K (Biogeochemical cycles of specific pollutants)

1. Future research will be directed to fill the gaps identified by the Meeting on the Biogeochemical cycle of mercury in the Mediterranean (Siena, 27-31 August 1984). Projects relevant to these gaps will be solicited.
2. Studies will be continued on the survival of selected pathogens, according to Annex II of the Land-Based Sources Protocol.

Activity L (Pollutant-transfer processes)

1. In addition to the continuation of ongoing research projects, a review on pollutant transfer through the straits is proposed as well as the development of a pilot project to determine such exchanges as a basis for overall mass balance assessment of selected pollutants. A pilot project for sampling of surface microlayer for petroleum and other pollutants will be initiated.
2. A pilot project on studying air pollutant depositions into the Mediterranean region and pollutant concentrations in air should be initiated in 1986 in as many countries as possible on the basis of programme proposals agreed upon by experts nominated by National Co-ordinators. The WMO Background Air Pollution Monitoring Network (BAPMON) stations could be used for sampling. Provision of appropriate sampling equipment should be envisaged, if necessary. A workshop should be held in 1987 to review the preliminary results of these activities.
3. A small expert meeting is planned to be convened in 1987 to review the results of ongoing research projects on work of transport of pollutants by sedimentation and to determine further research needs.

Follow-up action

68. With reference to the actions listed in paragraphs 66-67 above, in addition to the information presented in the first part of this document, the following details provide up-to-date complementary information:

- As part of activity D, the Consultation Meeting on Health Effects of Methylmercury in the Mediterranean, will take place in Athens, 15-19 September 1986.
- As part of activity A, the Intercalibration Exercise for Reference Methods dealing with Petroleum Hydrocarbon Determination will take place in Barcelona, in October 1986.
- As part of activity A, the Review Meeting on the Determination of Mercury, Lead and Cadmium on Marine Sediments and Organisms, will take place in Monaco, 3-6 November 1986.

69. The secretariat intends to slightly revise the annual procedure of submission of the research proposals. While for the 1986 activities the procedure remained unchanged, for the 1987 activities the date for the submission of research proposals would be moved to 15 September 1986, so that each contract could extend through a calendar year. The shift would also provide opportunity for more realistic planning and budgetary requirements for each coming year.

70. As part of a Project on Solid and Liquid Waste Collection, Treatment and Disposal, conducted within the framework of the Priority Actions Programme (PAP), a study is being organized on selected submarine outfall structures in the Mediterranean. This study will consist of monitoring the impact of discharged waste waters through sampling and analysis of the chemical and biological parameters listed in annex I of the Land-based Sources Protocol. A small financial contribution will be made available by PAP/RAC towards the general costs of the study, while the main part of the work is expected to be carried out as part of the various MED POL National Monitoring Programmes. A meeting of selected government-designated experts was held in Split, 27-28 March 1986, with the main purpose of adopting a common methodology in sampling and analysis (reference documents).

71. The subject of the implementation of the Land-based Sources Protocol is treated separately in document UNEP/WG.144/6.

Annex I

Table 1

Status of National Monitoring Agreements signed as at March 1986

Country	Year of first agreement	Programmes			Data submitted		
		Sources of pollution	Coastal and Estuarine	Reference areas	Sources of pollution	Coastal and Estuarine	Reference areas
Algeria	1985	1985	1985	-	-	-	-
Cyprus	1983	1983	1983	-	1983	1983	-
		1984	1984	-	1984	1984	-
		1985	1985	-	-	-	-
		1986	1986	-	-	-	-
Israel	1983	-	-	-	-	1982	-
		-	1983	-	-	1983	-
		-	1984	-	-	1984	-
		-	1985	-	-	1985	-
Lebanon	1983	-	1983	-	-	-	-
		-	-	-	-	1984	-
		-	1985	-	-	-	-
Libya	1986	1986	1986	1986	-	-	-
Malta	1984	-	-	-	1982	1982	-
		-	-	-	1983	1983	-
		1984	1984	-	1984	1984	-
		1985	1985	-	1985	1985	-
Morocco	1985	-	-	-	1983	1983	-
		-	-	-	1984	1984	-
		1985	1985	-	-	-	-
Yugoslavia	1983	1983	1983	1983	1983	1983	1983
		1984	1984	1984	1984	1984	1984
		1985	1985	1985	-	-	-

Table 2
 Status of other National Monitoring Programmes as at March 1986

State	not submitted to UNEP	submitted to UNEP	sent for corrections	signed by UNEP and sent for signature
Egypt		1985		1986
France	X			
Greece		1983		1985
Italy	X			
Monaco	X			
Spain	X			
Syria	X			
Tunisia		1983	1984	
Turkey		1983		1983

Annex II

Participants in MED POL - PHASE II Monitoring activities as at March 1986

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Annex III

Parameters and stations covered by National Monitoring Programmes

NUMBER OF STATIONS MONITORED FOR STANDARD PHYSICAL, CHEMICAL AND METEOROLOGICAL PARAMETERS (including BOD, COD and total suspended solids)									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	5	-	5
Sea water	-	10	-	10	-	-	5	112	137
NUMBER OF STATIONS MONITORED FOR MICROORGANISMS (including faecal coliforms, faecal streptococci, phytoplankton, zooplankton and viruses)									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	9	-	9
Sea water	4	-	67	9	1	7	13	105	206
Sediments	4	-	-	-	-	-	-	-	4
Biota	4	-	-	-	-	-	-	12	16
NUMBER OF STATIONS MONITORED FOR MERCURY AND CADMIUM									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	5	-	5
Sea water	-	-	-	-	-	7	-	19	26
Sediments	4	5	14	1	-	7	9	43	83
Suspended matter	-	-	-	-	-	-	3	5	8
Biota	4	-	14	2	5	7	18	46	96

NUMBER OF STATIONS MONITORED FOR OTHER METALS (including Co, Ni, Pb, Zn, Cr, Cu, Fe and Mn)									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	2	-	2
Sea water	-	-	-	-	-	7	1	-	8
Sediments	4	1	-	-	-	7	-	-	12
Suspended matter	-	-	-	-	-	-	-	-	-
Biota	4	2	-	-	5	-	18	-	29

NUMBER OF STATIONS MONITORED FOR HIGH MOLECULAR WEIGHT HALOGENATED HYDROCARBONS									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	4	-	4
Sea water	-	-	-	-	3	-	-	14	17
Sediments	-	5	-	1	-	-	10	23	39
Suspended matter	-	-	-	-	-	-	4	-	4
Biota	-	2	-	2	-	7	18	19	48

NUMBER OF STATIONS MONITORED FOR PETROLEUM HYDROCARBONS (including oil slicks and tar balls)									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Sea water	3	2	-	10	-	7	6	53	81
Sediments	3	5	-	-	-	-	11	2	21
Seashore	-	2	-	-	6	-	2	-	10
Biota	3	2	-	-	-	7	-	1	13

NUMBER OF STATIONS MONITORED FOR OTHER ORGANIC CONTAMINANTS (including detergents, N, P, total organic carbon, polyaromatic hydrocarbons and phenols)									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	2	-	2
Sea water	-	-	-	10	-	7	4	23	44
Sediments	-	-	-	-	-	-	-	-	-
Suspended matter	-	-	-	-	-	-	-	-	-

TOTAL NUMBER OF MONITORING STATIONS									
	<u>ALGERIA</u>	<u>CYPRUS</u>	<u>ISRAEL</u>	<u>LEBANON</u>	<u>LIBYA</u>	<u>MALTA</u>	<u>MOROCCO</u>	<u>YUGOSLAVIA</u>	<u>TOTAL</u>
Estuarine water	-	-	-	-	-	-	10	-	10
Sea water	4	10	67	10	4	7	23	117	242
Sediments	4	5	14	1	-	7	11	44	86
Suspended matter	-	-	-	-	-	-	4	5	9
Seashore	-	2	-	-	6	-	2	-	10
Biota	4	2	14	1	5	7	18	48	99

Annex IV

Ongoing research projects for 1985

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

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. FRA/014	WHO	P. BERNARD INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE UNITE INSERM "MER ET SANTE", NICE UTILISATION DE LA METHODE DE FILTRATIONS PAR MEMBRANES POUR LA RECHERCHE DE DIVERS CANDIDA DANS LE SABLE DES ZONES MARINES A VOCATION BALNEAIRE	3000
2. ISR/012	IOC	A. GOLIK ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH INTITUTE, HAIFA QUANTITATIVE ESTIMATION OF BEACH TAR BALLS BY REMOTE SENSING	6000
3. ISR/013	WHO	Y. YONA YOSHPE-PURER DR. A. FELIX PUBLIC HEALTH LABORATORY, MINISTRY OF HEALTH, TEL AVIV IS KP-STREPTOCOCCUS AGAR THE MOST SUITABLE MEDIUM FOR ENUMERATION OF FAECAL STREPTOCOCCI IN MARINE WATER?	4000
4. ISR/014	WHO	A. MATES DISTRICT PUBLIC HEALTH LABORATORY, MINISTRY OF HEALTH, HAIFA DETERMINATION OF E. COLI. FROM FAECAL COLIFORMS IN SEA-WATER, BY THE MEMBRANE FILTRATION CULTURE METHOD	4000
5. ITA/018	IOC	G.C. PAPPALARDO ISTITUTO DIPARTIMENTALE DI CHIMICA, UNIVERSITA DI CATANIA STUDIES AND MONITORING OF TRACE METALS IN MARINE WATERS BY INDUCTIVELY COUPLED PLASMA (ICP) EMISSION SPECTROMETRY	4000
6. ITA/029	WHO	L. VILLA ISPETTORATO CENTRALE PER LA DIFESA DEL MARE, MINISTERO DELLA MARINE MERCANTILE, ROME STUDIES ON THE HYGIENIC CONDITIONS OF COASTAL WATERS AND THEIR RELATION TO PUBLIC HEALTH	5000

Activity A (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
7. ITA/057	FAO	V.U. FOSSATO ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA TESTING OF THE METHOD OF ANALYSIS OF DDTs AND PCBS IN MARINE ORGANISMS	3000
8. SPA/002	WHO	F. LUCENA-GUTIERREZ CONSELLERIA DE ECOLOGIA I MEDIO AMBIENTE, AJUNTAMENT DE BADALONA FLUCTUATIONS DE LA POLLUTION BACTERIENNE D'ORIGINE FECALE LE LONG DU LITTORAL DE BADALONA	4000
9. SPA/004	WHO	F. LUCENA-GUTIERREZ CONSELLERIA DE ECOLOGIA I MEDIO AMBIENTE, AJUNTAMENT DE BADALONA DIFERENCIAS DE EFICACIA EN LA RECUPERACION DE ESTREPTOCOCOS FECALES EN LAS TEMPERATURAS DE INCUBACION DE 37° Y 44° C	NIL*
10. SPA/014	FAO	J. OBIOLS SALVAT INSTITUTO QUIMICO DE SARRIA, BARCELONA STUDIES ON METHODOLOGY FOR DETERMINATION OF TOTAL ARSENIC IN SELECTED MARINE ORGANISMS	3000
11. SPA/017	WHO	J. JOFRE TORROELLA FACULTAD DE BIOLOGIA, UNIVERSIDAD DE BARCELONA BACTERIOPHAGES OF BACTEROIDES AS INDICATORS OF PATHOGENIC HUMAN VIRUSES IN COASTAL SEA-WATERS	2500
12. YUG/018	IOC	B. COSOVIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB DEVELOPMENT OF NEW ELECTROANALYTICAL TECHNIQUES FOR DETERMINATION OF SURFACE ACTIVE SUBSTANCES AND DETERGENTS IN SEA-WATER AND SEA SURFACE MICROLAYER	3500

* NIL: No contribution in 1985

Activity D (Epidemiological studies related to Environmental Quality Criteria)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. FRA/009	FAO	C. ALZIEU IFREMER, CENTRE DE NANTES EVALUATION DES TENEURS EN MERCURE, METHYLMERCURE ET SELENIUM DANS LES POISSONS ET COQUILLAGES DES COTES FRANCAISES DE LA MEDITERRANEE	NIL*
2. GRE/008	WHO	J.A. PAPADAKIS ATHENS SCHOOL OF HYGIENE EVALUATION OF HEALTH RISK AT DIFFERENT BACTERIOLOGICAL GRADING OF SEA WATER. RELATION BETWEEN DENSITIES OF INDICATOR ORGANISMS AND MICROBIAL PATHOGENS IN SEA-WATER	5500
3. GRE/009	WHO	V. KRIKELIS PASTEUR INSTITUTE, ATHENS RESEARCH OF ENTERIC VIRUSES IN AQUATIC ENVIRONMENTS (SEWAGE EFFLUENTS, COASTAL SEA-WATERS, FRESH WATERS)	5000
4. GRE/013	WHO	J.A. PAPADAKIS ATHENS SCHOOL OF HYGIENE INVESTIGATION FOR NEUROTOXINS IN SHELLFISH OF ELEFSIS AND SARONICOS GULFS	4500
5. GRE/029	WHO	S. NAKOU INSTITUTE OF CHILD HEALTH, AGHIA SOPHIA CHILDREN'S HOSPITAL, ATHENS HAIR SAMPLING IN HIGH RISK GREEK POPULATIONS	3500
6. GRE/030	WHO	A. TRICHOPOULOU ATHENS SCHOOL OF HYGIENE PILOT DIETARY SURVEY OF HIGH RISK POPULATION GROUPS	5000
7. ISR/016	WHO	B. FATTAL ENVIRONMENTAL HEALTH LABORATORY, HEBREW UNIVERSITY, JERUSALEM EPIDEMIOLOGICAL STUDY OF MORBIDITY AND VIRAL ANTIBODIES AMONG BATHERS EXPOSED TO VARYING LEVELS OF MICROBIAL POLLUTION OF SEA-WATER	10000
8. ITA/038	FAO	R. CAPELLI ISTITUTO DI CHIMICA GENERALE, UNIVERSITA DI GENOVA DETERMINATION DU MERCURE TOTAL, DE METHYLMERCURE ET DE SELENIUM DANS LES ORGANISMES MARINS DE CONSOMMATION AFIN D'ETUDIER LEUR CORRELATION	NIL*

* NIL: No contribution in 1985

Activity D (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
9. ITA/052	FAO	A. RENZONI DIPARTIMENTO DI BIOLOGIA AMBIENTALE, UNIVERSITA DI SIENA EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS: SEAFOOD ANALYSES	3000
10. ITA/053	WHO	A. RENZONI DIPARTIMENTO DI BIOLOGIA AMBIENTALE, UNIVERSITA DI SIENA EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS: SAMPLING OF HUMAN HAIR	3500
11. ITA/054	WHO	A. RENZONI DIPARTIMENTO DI BIOLOGIA AMBIENTALE, UNIVERSITA DI SIENA EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS: DIETARY SURVEY	5000
12. SPA/003	WHO	J. IZQUIERDO LABORATORIO MUNICIPAL, BARCELONA ETUDE DE L'INCIDENCE DE CHAMPIGNONS SUR UNE PLAGE POLLUEE ET LEUR IMPORTANCE RELATIVEMENT A LA SANTE	5000
13. YUG/026	FAO	R. BUZINA INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB THE ANALYSIS OF MERCURY AND METHYL MERCURY IN SEAFOOD IN VARIOUS PARTS OF THE MEDITERRANEAN REGION	NIL*
14. YUG/027	WHO	R. BUZINA INSTITUTE OF PUBLIC HEALTH OF SR CROATIA, ZAGREB EVALUATION OF METHYLMERCURY IN MEDITERRANEAN POPULATIONS AND RELATED HEALTH HAZARDS	6000
15. YUG/028	WHO	P. STEGNAR INSTITUTE JOSEF STEFAN, UNIVERSITY E. KARDELJ, LJUBLJANA ANALYSIS OF HUMAN HAIR FOR ASSESSING EXPOSURE AND POSSIBLE HEALTH HAZARDS IN MEDITERRANEAN POPULATIONS DUE TO METHYLMERCURY IN SEAFOOD	7500

* NIL: No contribution in 1985

Activity F (Research on oceanographic processes)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. GRE/010	IOC	M. BONAZUNTAS DEPARTMENT OF CIVIL ENGINEERING, NATIONAL TECHNICAL UNIVERSITY ATHENS MODELLING POLLUTANT CIRCULATION IN COASTAL WATERS	5000
2. GRE/016	IOC	A. LASCARATOS LABORATORY OF PHYSICAL GEOGRAPHY, UNIVERSITY OF ATHENS DYNAMICAL STUDY OF SURFACE COLD WATER PATTERNS APPEARING IN THE GULF OF KORINTH	9900
3. ITA/012	IOC	P. MALANOTTE RIZZOLI ISTITUTO PER LO STUDIO DELLA DINAMICA DELLE GRANDI MASSE, VENEZIA MODELLING OF CIRCULATION PROCESSES IN THE NORTHERN ADRIATIC AND THEIR INFLUENCE ON THE DISTRIBUTION OF POLLUTANTS, CONSIDERED AS PASSIVE SCALARS	6000
4. ITA/023	IOC	S. CUNSOLO DEPARTIMENTO DI FISICA, UNIVERSITA "LA SAPIENZA", ROMA VERTICAL TRANSPORT PROCESSES OF MARINE WATER NEAR THE ITALIAN COASTS	6000
5. ITA/033	IOC	R. SANTANGELO OSSERVATORIO GEOFISICO, UNIVERSITA DI MODENA APPROXIMATE MODELS FOR THE NORTHERN ADRIATIC SEA AND EXPERIMENTAL CHECKS OF CURRENTS IN FIXED POINTS	8000
6. TUR/001	IOC	U. UNLUATA MIDDLE EAST TECHNICAL UNIVERSITY, ERDEMLI ICEL OCEANOGRAPHIC PROCESSES IN THE NORTHEASTERN LEVANTINE COASTAL WATERS	7000
7. YUG/006	IOC	M. GACIC INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT LOW-FREQUENCY CURRENT FIELD OSCILLATIONS IN THE COASTAL ZONE OF THE CENTRAL ADRIATIC	3000
8. YUG/015	IOC	M. KUZMIC CENTER FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB MATHEMATICAL MODELLING OF HORIZONTAL CIRCULATION AND VERTICAL DISTRIBUTION OF CURRENTS IN THE NORTHERN ADRIATIC	3800

Activity F (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
9. YUG/025	IOC	J. FAGANELI MARINE RESEARCH AND TRAINING CENTRE, PIRAN MODIFICATIONS OF THE SUSPENDED ORGANIC MATTER COMPOSITION AND SEDIMENTATION IN THE POLLUTED COASTAL WATERS	6600
10. YUG/036	IOC	M. ZORE-ARMANDA INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT TURBIDITY TRANSPORT BY RESIDUAL CURRENTS	5000

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

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. EGY/004	FAO	A.H. EL-SEBAE FACULTY OF AGRICULTURE, UNIVERSITY OF ALEXANDRIA ACUTE AND CHRONIC TOXICITY TO MARINE BIOTA OF WIDELY USED DISPERSANTS, PCBS, CHLORINATED PESTICIDES AND THEIR COMBINATIONS, AND THEIR COMBINATIONS, AND THEIR BIOMAGNIFICATION IN ALEXANDRIA REGION	NIL*
2. FRA/001	FAO	R.A. KAIM-MALKA STATION MARINE D'ENDOUME, CENTRE D'OCEANOLOGIE DE MARSEILLE RECHERCHES SUR LA TOXICITE, LA PERSISTANCE, LA BIOACCUMULATION, LA CARCINOGENICITE ET LA MUTAGENICITE	NIL*
3. FRA/008	FAO	M. AUBERT CENTRE D'ETUDES ET DE RECHERCHES DE BIOLOGIE ET D'OCEANOGRAPHIE MEDICALE (CERBOM), NICE ETUDE DE LA TOXICITE DE COMPOSES SILICONES EN MILIEU MARIN	NIL*
4. GRE/002	FAO	M. MORAITOU-APOSTOLOPOULOU ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS STUDIES ON TOXICITY OF OIL, OIL DISPERSANTS, AND OIL/DISPERSANT MIXTURES ON VARIOUS MARINE ORGANISMS AS WELL AS THE COMBINED EFFECTS OF DISPERSANTS AND SOME HEAVY METALS	NIL*
5. GRE/026	FAO	A. HARITOS ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS STUDY OF THE RESPONSES OF MARINE ORGANISMS TO POLLUTANTS AT THE LEVEL OF FUNCTIONAL PROTEINS	3000
6. GRE/031	FAO	S.E. PAPOUTSOGLOU DEPT. OF APPLIED HYDROBIOLOGY, AGRICULTURAL UNIVERSITY OF ATHENS EFFECT OF CADMIUM AND OTHER POLLUTANTS ON THE SURVIVAL, GROWTH RATE AND REPRODUCTION OF COMMERCIALY CULTURED MARINE AND BRACKISH WATER FISH OF THE MEDITERRANEAN	4500
7. GRE/032	FAO	A. HARITOS ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS STUDY OF THE EFFECT OF HEAVY METALS ON POLYPEPTIDES IN FISH AND CRUSTACEAN SPECIES BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY	4500

* NIL: No contribution in 1985

Activity G (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
8. ISR/009	FAO	E. NEVO INSTITUTE OF EVOLUTION, UNIVERSITY OF HAIFA COMPLEX POLLUTION EFFECTS OF TWO HEAVY METALS (MERCURY AND CADMIUM) ON THE GENETIC STRUCTURE OF MARINE ORGANISMS	4000
9. ISR/010	FAO	H. HORNUNG ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH INSTITUTE, HAIFA BIOACCUMULATION OF MERCURY AND ITS DISTRIBUTION IN VARIOUS ORGANS OF SOME SHORE FISHES OFF THE MEDITERRANEAN SEA COAST	4000
10. ISR/015	FAO	Y. ACHITUV DEPT. OF LIFE SCIENCES, BAR-ILAN UNIVERSITY, RAMAT-GAN THE INFLUENCE OF POLLUTION BY HEAVY METALS ON VARIOUS PHYSIOLOGICAL ASPECTS AND ENERGY BUDGET OF DONAX TRUNCULUS (BIVALVIA), NASSARIUS CIRCUMCINCTA AND N. GIBBOLosa (GASTROPODS)	5000
11. ITA/006	WHO	S. DE FLORA ISTITUTO DI IGIENE, UNIVERSITA DI GENOVA MUTAGENICITY, GENOTOXICITY INTERACTIONS AND METABOLISM OF CHEMICAL COMPOUNDS IN THE MARINE ENVIRONMENT AND IN MARINE ORGANISMS	4000
12. ITA/C21	FAO	L. DALLA VENEZIA ISTITUTO DI BIOLOGIA DEL MARE, CNR, VENEZIA PHYSIOLOGICAL AND BIOCHEMICAL RESPONSE OF MARINE ORGANISMS TO PCB POLLUTION IN A WIDE RANGE OF ENVIRONMENTAL FACTORS	NIL*
13. ITA/028	WHO	G. BRONZETTI ENVIRONMENTAL MUTAGENESIS DEPARTMENT, PISA MUTAGENICITY AND CARCINOGENICITY STUDIES ON MARINE POLLUTANTS	4000
14. ITA/030	WHO	G.P. DE RENZI FACOLTA DI MEDICINA, UNIVERSITA DI ROMA RESEARCH INTO THE TOXICITY, PERSISTENCE, BIOACCUMULATION AND MUTAGENICITY OF HYDROCARBONS, DETERGENTS AND HEAVY METALS IN THE SEA	3000

* NIL: No contribution in 1985

Activity G (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
15. ITA/031	FAO	M. CRUNESCU ISTITUTO DI FIOLOGIA GENERALE, UNIVERSITA DI GENOVA ENZYMIC ASPECTS OF THE XENOBIOTIC METABOLIZING SYSTEM IN MYTILUS GALLOPROVINCIALIS LAM.	NIL*
16. ITA/039	FAO	A. RENZONI DIPARTIMENTO DI BIOLOGIA AMBIENTALE, UNIVERSITA DI SIENA CONTAMINANTS IN RESIDENT AND MIGRATORY BIRDS IN THE EASTERN MEDITERRANEAN FLYWAY	2000
17. MAL/001	FAO	V. AXIAK DEPARTMENT OF MATHEMATICS AND SCIENCES, UNIVERSITY OF MALTA RESEARCH ON THE EFFECTS OF OIL DISPERSANTS ON MARINE ORGANISMS	NIL*
18. MOR/002	FAO	M. KESSABI INSTITUT NATIONAL AGRONOMIQUE ET VETERINAIRE, RABAT RECHERCHE SUR LA TOXICITE, LA PERSISTANCE, LA BIOACCUMULATION, LA CARCINOGENICITE ET LA MUTAGENICITE	5000
19. SPA/013	FAO	J. MEDINA ESCRICHE UNIVERSITY COLLEGE OF CASTELLON, UNIVERSITY OF VALENCIA STUDY OF THE TOXICITY, BIOACCUMULATION AND PERSISTENCE OF SOME HEAVY METALS AND PESTICIDES IN THE CRAYFISH PROCAMBARUS CLARKII (GIRARD) ON THE ALBUFERA LAKE	4000
20. TUR/005	FAO	H. BAGCI DEPT. OF BIOLOGICAL SCIENCES, MIDDLE EAST TECHNICAL UNIV., ANKARA DESIGN AND DEVELOPMENT OF BIO-TEST METHODS THAT WILL BE USED TO ASSAY THE POLLUTANTS LISTED IN THE ANNEXES OF THE PROTOCOLS WITH RESPECT TO THEIR TOXICITY, RESIDUAL EFFECTS, BIO-DEGRADABILITY, MUTAGENICITY AND	NIL*
21. YUG/005	FAO	M. TUDOR INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT RESEARCH ON THE EFFECTS OF OIL DISPERSANTS ON MARINE ORGANISMS	NIL*

* NIL: No contribution in 1985

Activity G (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
22. YUG/014	WHO	B. KURELEC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB THE CORRELATION BETWEEN LEVELS AND EFFECTS OF MUTAGENIC POLLUTANTS IN THE MARINE ENVIRONMENT	5000
23. YUG/023	FAO	M. GASIC INSTITUTE OF CHEMISTRY, UNIVERSITY OF BELGRADE HALOGEN-CONTAINING TERPENOIDS AND RELATED SUBSTANCES IN MARINE ORGANISMS	NIL*
24. YUG/038	FAO	M. OZRETIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ TOXICITY OF POLLUTANTS TO MARINE ORGANISMS: PHYSIOLOGICAL AND BIOCHEMICAL STUDIES	3000
25. YUG/047	FAO	N. FANUKO MARINE RESEARCH AND TRAINING CENTRE, PIRAN TOXICITY OF CADMIUM, MERCURY AND PCBS TO THE REPRESENTATIVE NORTHERN-ADRIATIC PHYTOPLANKTON SPECIES CULTURED IN VITRO	4000
26. YUG/053	FAO	M. OZRETIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ SERUM ENZYMES IN FISH AS BIOCHEMICAL INDICATORS OF MARINE POLLUTION	5000

* NIL: No contribution in 1985

Activity H (Eutrophication and concomitant plankton blooms)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. TUN/004	FAO	M. HADJ ALI INSTOP, SALAMMO EUTROPHISATION ET FLORAISONS CONCOMITANTES DE PLANKTON	NIL*
2. TUR/008	FAO	E. IZDAR INSTITUTE OF MARINE SCIENCES AND TECHNOLOGY, DOKUZ EYLUL UNIV., IZMIR ELEMENTAL TRANSFER PROCESS AND EUTROPHICATION IN BUYUK MENDERES DELTA (GREAT MEANDER DELTA) AND THEIR OFFSHORE DISTRIBUTION, EASTERN AEGEAN-TURKEY	NIL*
3. YUG/003	FAO	I. MARASOVIC INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT EUTROPHICATION AND CONCOMITANT PLANKTON BLOOMS IN THE COASTAL AREA OF CENTRAL ADRIATIC	NIL*
4. YUG/008	FAO	V. ZUTIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB RELATIONSHIP BETWEEN PHYTOPLANKTON BLOOMS AND DISSOLVED ORGANIC MATTER IN THE NORTHERN ADRIATIC	NIL*
5. YUG/013	FAO	T. LEGOVIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB MODELLING EUTROPHICATION PROCESSES IN THE NORTHERN ADRIATIC	NIL*
6. YUG/024	FAO	N. FANUKO MARINE RESEARCH AND TRAINING CENTRE, PIRAN EUTROPHICATION AND CONCOMITANT PLANKTON BLOOMS	NIL*
7. YUG/043	FAO	I. MARASOVIC INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT STUDIES OF TOXIC DINOFLAGELLATE SPECIES IN THE INSHORE WATERS OF THE EAST ADRIATIC COAST	3000

* NIL: No contribution in 1985

Activity I (Pollution-induced ecosystems modifications)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. FRA/003	FAO	G. STORA STATION MARINE D'ENDOUME, CENTRE D'OCEANOLOGIE DE MARSEILLE ELABORATION DE CRITERES FONDAMENTAUX POUR LA SURVEILLANCE BIOLOGIQUE A LONG TERME DE LA POLLUTION	NIL*
2. GRE/014	FAO	J. CASTRITSI-CATHARIOS ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS ETUDE COMPARATIVE DES MODIFICATIONS DES ECOSYSTEMES DES EAUX COTIERES DU GOLFE ET DU PORT DE PATRAS SOUMISES A L'INFLUENCE DES POLLUANTS	3000
3. GRE/017	FAO	A. NICOLAIDOU ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS EFFECTS OF POLLUTION ON THE DISTRIBUTION OF MOLLUSCS IN MESSOLONGHI LAGOON AND ADJACENT AREAS	3000
4. GRE/023	FAO	P. PANAYOTIDIS CENTRE NATIONAL DE RECHERCHES MARINES, ATHENES ETUDE DE L'IMPACT DE LA POLLUTION SUR LES HERBIERS DE POSIDONIA OCEANICA DANS LE GOLFE SARONIKOS (MER EGEE, GRECE)	2000
5. ITA/008	FAO	M. SARA ISTITUTO DI ZOOLOGIA, UNIVERSITA DI GENOVA EVALUATION OF THE CONDITIONS OF SOME POSIDONIA MEADOWS IN THE NORTH-WESTERN MEDITERRANEAN SEA AND EVENTUAL EFFECTS OF POLLUTANTS ON THE ASSOCIATED FAUNA	NIL*
6. ITA/022	FAO	S. DI GERONIMO ISTITUTO DI SCIENZE DELLA TERRA, UNIVERSITA DI CATANIA RELATIONS BETWEEN POLLUTION AND BIOCOENOSES IN THE ROADSTEAD OF AUGUSTA (EASTERN SICILY)	NIL*
7. ITA/024	FAO	G. COGNETTI ISTITUTO DI ZOOLOGIA E ANATOMIA COMPARATA, UNIVERSITA DI PISA EFFECTS OF POLLUTION ON BENTHOS	NIL*

* NIL: No contribution in 1985

Activity I (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
8. ITA/026	FAO	G. ALBERTELLI ISTITUTO DI SCIENZE AMBIENTALI MARINE, UNIVERSITA DI GENOVA CONDITIONS ACTUELLES DES BIOCOENOSSES BENTHIQUE DU PLATEAU LIGURIEN ET DES ILES DE L'ARCHIPEL TOSCAN	NIL*
9. LEB/001	FAO	S. LAKKIS CENTRE DE RECHERCHES MARINES, BEYROUTH MODIFICATIONS DES ECOSYSTEMES PAR LA POLLUTION	NIL*
10. LEB/002	FAO	N. M. KHAIRALLAH CENTRE FOR MARINE RESEARCH, BEIRUT POLLUTION-INDUCED ECOSYSTEMS MODIFICATIONS	3000
11. TUR/007	FAO	A. KOCATAS HYDROBIOLOGICAL DEPT., EGE UNIVERSITY, IZMIR THE EFFECTS OF POLLUTION ON THE BENTHIC AND PELAGIC ECOSYSTEMS IN THE BAY OF IZMIR	NIL*
12. YUG/002	FAO	D. REGNER INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT POLLUTION-INDUCED ECOSYSTEM MODIFICATION IN THE COASTAL AREA OF CENTRAL ADRIATIC	NIL*
13. YUG/007	FAO	A. BENOVIC BIOLOGICAL INSTITUTE, DUBROVNIK INVESTIGATION OF ZOOPLANKTON COMMUNITIES IN THE NORTHERN ADRIATIC SEA	NIL*
14. YUG/019	FAO	D. ZAVODNIK CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ROVINJ MONITORING OF ECOSYSTEMS MODIFICATIONS IN THE NORTHERN ADRIATIC SEA INDUCED BY EUTROPHICATION AND ANTHROPOGENIC ACTIVITIES	NIL*

* NIL: No contribution in 1985

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

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. CYP/001	FAO	A. DEMETROPOULOS FISHERIES DEPARTMENT, MINISTRY OF AGRICULTURE, NICOSIA STUDY OF LITTORAL, BENTHIC AND FISH COMMUNITIES IN THE VASILIKOS-MONI AREA IN RELATION TO THE EFFECT ON THESE OF POLLUTION FROM THERMAL EFFLUENTS	NIL*
2. ITA/013	FAO	E. TARAMELLI-RIVOSSECHI ISTITUTO DI ZOOLOGIA, UNIVERSITA DI ROMA "LA SAPIENZA" EFFECTS OF THERMAL EFFLUENTS ON SEASHORE ORGANISMS AT TORVALDALIGA (CIVITAVECCHIA-ROMA)	NIL*

* NIL: No contribution in 1985

Activity K (Biogeochemical cycles of specific pollutants)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. EGY/003	WHO	F. EL-SHARKAWI HIGH INSTITUTE OF PUBLIC HEALTH, ALEXANDRIA BIOGEOCHEMICAL CYCLES OF SPECIFIC POLLUTANTS. SURVIVAL OF PATHOGENS IN THE MEDITERRANEAN	5000
2. EGY/007	FAO	I.H. ELSOKKARY UNIVERSITY OF ALEXANDRIA RESEARCH CENTRE (UNARC) BIOGEOCHEMICAL CYCLES OF SPECIFIC POLLUTANTS	NIL*
3. FRA/006	FAO	N. VICENTE CENTRE D'ETUDE DES RESSOURCES ANIMALES MARINES, ST.JEROME, MARSEILLE CONTROLE DES METAUX LOURDS DANS LES ECOSYSTEMES LITTORAUX ET LES CHAINES ALIMENTAIRES MARINES	NIL*
4. GRE/022	FAO	A.V. CATSIKI NATIONAL CENTRE FOR MARINE RESEARCH, ATHENS BIOACCUMULATION DU MERCURE ET D'AUTRES METAUX DANS L'ECOSYSTEME MARIN	3000
5. ISR/008	WHO	Y. YOSHPE-PURER DR. A. FELIX PUBLIC HEALTH LABORATORY, MINISTRY OF HEALTH, TEL AVIV STUDIES ON THE OCCURRENCE OF STAPHYLOCOCCUS AUREUS AND PSEUDOMONAS AERUGINOSA IN COASTAL WATER IN ISRAEL	5000
6. ISR/011	FAO	H. HORNUNG ISRAEL OCEANOGRAPHIC AND LIMNOLOGICAL RESEARCH INSTITUTE, HAIFA SOME ASPECTS OF THE BIOGEOCHEMICAL CYCLE OF MERCURY IN A POLLUTED AREA OFF THE ISRAEL MEDITERRANEAN COAST	3000
7. ITA/025	FAO	A. RENZONI DIPARTIMENTO DI BIOLOGIA AMBIENTALE, UNIVERSITA DI SIENA BIOGEOCHEMICAL CYCLE OF MERCURY AND SELENIUM (INCLUDING MARINE RESIDENT AND MIGRATORY BIRDS)	NIL*
8. SPA/006	WHO	P. ROMERO RAYA FACULTY OF SCIENCE, UNIVERSITY OF MALAGA SURVIVAL OF PATHOGENIC MICROORGANISMS IN SEA-WATER	4500

* NIL: No contribution in 1985

Activity K (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
9. TUR/003	FAO	I. SALIHOGLU MIDDLE EAST TECHNICAL UNIVERSITY, ERDEMLI ICEL BIOGEOCHEMICAL CYCLE OF MERCURY IN THE NORTH-EASTERN MEDITERRANEAN (SOUTHERN COAST OF TURKEY)	NIL*
10. TUR/009	FAO	E. IZDAR INSTITUTE OF MARINE SCIENCES AND TECHNOLOGY, DOKUZ EYLUL UNIV., IZMIR POLLUTANT TRANSFER PROCESS AND BIOGEOCHEMICAL CYCLE OF SPECIFIC POLLUTANTS AT THE SELECTED LOCATION OF CANDARLI GULF, TURKEY	NIL*
11. YUG/020	WHO	D. FUKS CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INTITUTE, ROVINJ SURVIVAL OF SOME INTESTINAL PATHOGENS IN THE MARINE ENVIRONMENT	3000
12. YUG/049	FAO	T. ZVONARIC INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT STUDY OF THE MERCURY ECOCYCLE IN THE MARINE SYSTEM OF THE KASTEL BAY	4500

* NIL: No contribution in 1985

Activity L (Pollutant-transfer processes)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. EGY/008	IOC	M.F. MACKLAD UNIVERSITY OF ALEXANDRIA RESEARCH CENTRE (UNARC) POLLUTANT TRANSFER PROCESSES	4000
2. FRA/007	IOC	A. MONACO LABORATOIRE DE SEDIMENTOLOGIE ET GEOCHIMIE MARINES UNIVERSITE DE PERPIGNAN ROLE DES COUCHES NEPHELOIDES ET DES COLLOIDES ORGANIQUES DANS LE TRANSPORT DES METAUX LOURDS (PB, CD, CU, ZN) DU MILIEU ESTUARIEEN AU MILIEU MARIN. EXEMPLE DU RHONE	5000
3. GRE/004	IOC	M.J. SCULLOS DEPARTMENT OF CHEMISTRY, UNIVERSITY OF ATHENS STUDY OF THE TRANSPORT OF PARTICLES IN GREEK ESTUARIES	3500
4. GRE/018	IOC	M. BONAZUNTAS DEPARTMENT OF CIVIL ENGINEERING, NATIONAL TECHNICAL UNIVERSITY ATHENS MEDITERRANEAN WATER POLLUTION FROM PINIOS RIVER	5000
5. ITA/017	WMO	A. PALUMBO ISTITUTO DI GEOLOGIA E GEOFISICA, UNIVERSITA DI NAPOLI POLLUTANT TRANSPORT MODELS AT THE AIR-SEA INTERFACE	4000
6. ITA/032	IAEA	R. FRACHE ISTITUTO DI CHIMICA GENERALE, GENOVA CHEMISTRY AND DYNAMICS IN THE TRANSPORT OF HEAVY METALS IN PARTICULATE MATTER IN LIGURIAN AND TYRRHENIAN SEA	5000
7. ITA/037	IOC	A.A. ORIO ISTITUTO DI CHIMICA GENERALE ED INORGANICA, VENEZIA TRANSPORT MECHANISMS OF POLLUTANTS AT THE SEDIMENT-WATER INTERFACE	9620
8. ITA/041	WMO	G. CLERICI OSSERVATORIO METEOROLOGICO DI BRERA, MILANO TRANSPORT OF HEAVY METALS INTO MEDITERRANEAN SEA	5340

Activity L (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
9. ITA/056	IOC	G. FIERRO ISTITUTO DI GEOLOGIA, UNIVERSITA DI GENOVA SEDIMENT AND PARTICULATE MATTER STUDIES IN THE LIGURIAN SEA; MECHANISM * OF INTERACTION WITH POLLUTANT MATTER	8000
10. SPA/008	WMO	Á. CRUZADO CENTRO DE ESTUDIOS AVANZADOS DE BLANES (GIRONA) STUDY OF LONG AND MEDIUM RANGE ATMOSPHEIRC POLLUTANT TRANSPORT INTO THE NORTHWEST MEDITERRANEAN SEA	5000
11. SPA/016	IOC	J. ALBAIGES RIERA INSTITUTE OF BIO-ORGANIC CHEMISTRY, BARCELONA TRANSPORT AND FATE OF WASTEWATER DISCHARGES OF THE CITY OF BARCELONA AND ADJACENT RIVERS (BESOS AND LLOBREGAT) INTO THE COASTAL WATER	8000
12. YUG/033	IOC	V. ZUTIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB VERTICAL TRANSPORT OF POLLUTANTS IN THE ESTUARY; THE IMPORTANCE OF ORGANIC AGGREGATES	7900

Jellyfish programme

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
1. FRA/011	UNEP	J. GOY ICHTHYOLOGIE GENERALE ET APPLIQUEE, MUSEUM NATIONAL D'HISTOIRE NATURELLE, PARIS MODELISATION DES FLORAISSONS DE MEDUSES DANS UNE ZONE D'EUTROPHISATION EN MER LIGURE	4000
2. FRA/012	UNEP	P. BERNARD INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE UNITE INSERM "MER ET SANTE", NICE SURVEILLANCE DES PROLIFERATIONS DE MEDUSES URTICANTES DURANT LA PERIODE ESTIVALE 1985 SUR LE LITTORAL DE LA REGION PROVENCE-ALPES-COTE D'AZUR (FRANCE)	2000
3. GRE/011	WHO	P. VLACHOS POISON CONTROL CENTER, CHILDREN'S HOSPITAL "P.A. KYRIAKOU" ATHENS EPIDEMIOLOGY AND THERAPEUTIC METHODS OF JELLYFISH. POISONING IN GREECE	500
4. GRE/012	WHO	S.K. MASTRONICOLIS SCHOOL OF CHEMISTRY, UNIVERSITY OF ATHENS ISOLATION AND IDENTIFICATION OF NEW MOLECULES PHOSPHONOLIPIDS IN JELLYFISH	500
5. GRE/024	UNEP	E. PAPATHANASSIOU NATIONAL CENTER FOR MARINE RESEARCH, ATHENS STUDIES ON THE ECOLOGY AND BIOLOGY OF JELLYFISH IN GREECE	2500
6. GRE/025	UNEP	J. CASTRITSI-CATHARIOS ZOOLOGICAL LABORATORY, UNIVERSITY OF ATHENS DISTRIBUTION QUANTITATIVE ET QUALITATIVE DES MEDUSES COMMUNES DANS LES ZONES PROCHES DE LA COTE DES ILES: HYDRA, POROS ET AUSSI AU N.E. DU GOLFE DE KORINTHE	1000
7. GRE/028	UNEP	A.P. GRIMANIS CHEMISTRY DEPARTMENT, DEMOCRITOS NUCLEAR RESEARCH CENTER, ATHENS USE OF ISOTOPES TO IDENTIFY THE FOOD SOURCES OF JELLYFISH BLOOMS: NATURAL ECOSYSTEMS OR SEWAGE EFFLUENTS	NIL*

* NIL: No contribution in 1985

Jellyfish programme (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
8. ITA/042	UNEP	L. ROTTINI-SANDRINI CIMAM, LABORATORIO DI BIOLOGIA MARINA, UNIVERSITA DI TRIESTE MONITORRAGE DES MEDUSES EN ADRIATIQUE ET DOMMAGE A LA PECHE	NIL*
9. ITA/043	UNEP	L. ROTTINI-SANDRINI CIMAM, LABORATORIO DI BIOLOGICAL MARINA, UNIVERSITA DI TRIESTE ETUDE ECOLOGIQUE EXPERIMENTAL DE PELAGIA NOCTILUCA	NIL*
10. ITA/046	UNEP	R. DELLA LOGGIA ISTITUTO DI FARMACOLOGIA E FARMACOGNOSIA, UNIVERSITA DI TRIESTE INDIVIDUATION AND TOXICOLOGICAL EVALUATION OF THE DERMATOTOXIC PRINCIPLES OF PELAGIA NOCTILUCA AND OTHER MEDUSAE	1500
11. ITA/047	UNEP	C. SCARPA ISTITUTO DI CLINICA DERMATOLOGICA DELL'UNIVERSITA DI TRIESTE STUDY ON THE HISTOLOGY AND ON THE LOCAL TREATMENT OF HUMAN SKIN INJURIES FROM JELLYFISH STINGS	1500
12. ITA/048	UNEP	A. CARLI ISTITUTO DI SCIENZE AMBIENTALI MARINE, UNIVERSITA DI GENOVA SAMPLE-MONITORING OF PELAGIA NOCTILUCA IN THE LIGURIAN SEA: BIOLOGICAL AND ECOLOGICAL ASPECTS	1500
13. ITA/049	UNEP	G. C. PAPPALARDO ISTITUTO DIPARTIMENTALE DI CHIMICA, UNIVERSITA DI CATANIA MULTI-ELEMENT ANALYSIS OF MEDITERRANEAN SEA-WATERS AND ASSESSMENT OF ENVIRONMENTAL QUALITY IN RELATION TO JELLYFISH SWARMINGS, AND STRUCTURE CHARACTERIZATION OF CHEMICAL COMPONENTS OF VENOM PRODUCED BY	1500
14. ITA/050	UNEP	A. SALLEO ISTITUTO DI FISILOGIA GENERALE, UNIVERSITA DI MESSINA DISCHARGE MECHANISM OF THE NEMATOCYSTS OF PELAGIA NOCTILUCA	1500
15. ITA/055	UNEP	F. BOERO ISTITUTO DI ZOOLOGIA, UNIVERSITA DI GENOVA PROJECT ON JELLYFISH ON THE MEDITERRANEAN SEA	1500

* NIL: No contribution in 1985

Jellyfish programme (Continued)

CODE	AGENCY	PRINCIPAL INVESTIGATOR, RESEARCH CENTRE, PROJECT TITLE	ASSISTANCE
16. ITA/058	UNEP	L. SCALERA LIACI ISTITUTO DI ZOOLOGIA ED ANATOMIA COMPARATA, UNIVERSITA DI BARI JELLYFISH IN THE MEDITERRANEAN SEA	1500
17. MAL/003	UNEP	V. AXIAK DEPARTMENT OF MATHEMATICS AND SCIENCES, UNIVERSITY OF MALTA MONITORING OF JELLYFISH SWARMINGS IN THE COASTAL WATERS OF MALTA	2000
18. TUR/012	UNEP	F. BINGEL MIDDLE EAST TECHNICAL UNIVERSITY, ERDEMLI ICEL PROJECT ON JELLYFISH IN THE MEDITERRANEAN SEA. JELLYFISH MONITORING PROGRAMME FOR THE EASTERN MEDITERRANEAN COAST OF TURKEY	3000
19. YUG/030	UNEP	A. BENOVIC BIOLOGICAL INSTITUTE, DUBROVNIK INVESTIGATION OF JELLYFISHES (MEDUSAE) IN THE SOUTHERN ADRIATIC	2000
20. YUG/032	UNEP	T. LEGOVIC CENTRE FOR MARINE RESEARCH, RUDJER BOSKOVIC INSTITUTE, ZAGREB SWARMING AND TRANSPORT OF PELAGIA NOCTILUCA IN THE ADRIATIC SEA	1500
21. YUG/035	UNEP	Z. MARETIC DEPARTMENT FOR COMMUNICABLE DISEASES, PULA PELAGIA NOCTILUCA - HUMAN HEALTH ASPECTS	500
22. YUG/042	UNEP	T. VUCETIC INSTITUTE OF OCEANOGRAPHY AND FISHERIES, SPLIT COMPARATIVE STUDY OF THE UNUSUAL APPEARANCE OF PELAGIA AND CHANGES OF THE ENVIRONMENTAL FACTORS	1000
23. YUG/045	UNEP	A. MALEJ MARINE RESEARCH AND TRAINING CENTRE, PIRAN RATE OF METABOLISM OF JELLYFISH AS RELATED TO BODY WEIGHT, CHEMICAL COMPOSITION AND TEMPERATURE	3000

Annex V

Status of Reference Methods* for Marine Pollution Studies as at March 1986

A. Sanitary quality of coastal recreational and shellfish-growing waters

No. 1	UNEP/WHO: Guidelines for monitoring the quality of coastal recreational and shellfish-growing waters.	draft (E) 09.05.84
No. 2	UNEP/WHO: Determination of total coliforms in sea-water by the membrane filtration culture method.	Rev.1(E) 31.08.83 Rev.1(F) 31.10.83
No. 3	UNEP/WHO: Determination of faecal coliforms in sea-water by the membrane filtration culture method.	Rev.1(E) 31.08.83 Rev.1(F) 31.10.83
No. 4	UNEP/WHO: Determination of faecal streptococci in sea-water by the membrane filtration culture method	Rev.1(E) 31.08.83 Rev.1(F) 31.10.83
No. 5	UNEP/WHO: Determination of faecal coliforms in bivalves by multiple test tube method.	Rev.1(E) 31.08.83 Rev.1(F) 31.10.83
No. 21	UNEP/WHO/IAEA: Determination of total coliforms in sea-water by multiple test tube (MPN) method.	draft(E) 19.07.85
No. 22	UNEP/WHO/IAEA: Determination of faecal coliforms in sea-water by multiple test tube (MPN) method.	draft(E) 19.07.85
No. 23	UNEP/WHO/IAEA: Determination of faecal streptococci in sea-water by multiple test tube (MPN) method.	draft(E) 19.07.85
No. 28	UNEP/WHO/IAEA: Determination of staphylococcus aureus in sea-water and sewage by the membrane filtration culture method.	in preparation
No. 29	UNEP/WHO/IAEA: Determination of pseudomonas aeruginosa in sea-water and sewage by the membrane filtration culture method.	in preparation
No. 30	UNEP/WHO/IAEA: Isolation/enumeration of salmonella from sea-water and sewage.	in preparation

* Rev. refers to the revised issue of a method. (E) and (F) denote French and English issues.

D UNEP/WHO/IAEA: Determination of faecal coliforms in preparation
in estuarine waters, suspended matter and
sediments.

M UNEP/WHO/IAEA: Statistical methods for the in preparation
evaluation of results from monitoring the quality
of coastal recreational and shellfish-growing
waters.

B. Chemical contaminants in marine organisms

No. 6 UNEP/FAO/IAEA: Guidelines for monitoring in preparation
chemical contaminants in marine organisms.

No. 7 UNEP/FAO/IOC/IAEA: Sampling of selected marine Rev.2(E) 12.11.84
organisms and sample preparation for trace
metal analysis.

No. 8 UNEP/FAO/IOC/IAEA: Determination of total Rev.1(E) 12.11.84
mercury in selected marine organisms by cold
vapour atomic absorption spectrophotometry.

No. 9 UNEP/FAO/IAEA: Determination of total arsenic draft(E) 22.04.85
in selected marine organisms by hydride gene-
ration atomic absorption spectrophotometry.

No. 10 UNEP/FAO/IAEA: Determination of total selenium (E) 12.11.84
in selected marine organisms by hydride gene-
ration atomic absorption spectrophotometry.

No. 11 UNEP/FAO/IOC/IAEA: Determination of total Rev.1(E) 12.11.84
cadmium, zinc, lead and copper in selected
marine organisms by flameless atomic absorption
spectrophotometry.

No. 12 UNEP/FAO/IAEA: Sampling of selected marine Rev.1(E) 12.11.84
organisms and sample preparation for the
analysis of chlorinated hydrocarbons.

No. 13 UNEP/FAO/IAEA: Determination of methylmercury (E) 12.11.84
in selected marine organisms by gas chromato-
graphy.

No. 14 UNEP/FAO/IOC/IAEA: Determination of DDTs and Rev.1(E) 03.04.86
PCBs in selected marine organisms by packed
column gas chromatography.

N UNEP/FAO/IOC/IAEA: Determination of DDTs and in preparation
PCBs in selected marine organisms by capillary
column gas chromatography.

C. Chemical contaminants in sea-water

- No. 16 UNEP/IAEA: Determination of DDTs, PCBs, PCCs and other hydrocarbons in sea-water by gas chromatography. draft(E) 21.09.82
- No. 18 UNEP/IOC: Determination of total dissolved cadmium in sea-water by differential pulse anodic stripping voltammetry. draft(E) 16.09.83
- B UNEP/IOC/IAEA: Monitoring of petroleum hydrocarbons in sea-water. in preparation

D. Chemical contaminants in marine sediments and suspended matter

- No. 17 UNEP/IAEA: Determination of DDTs, PCBs, PCCs and other hydrocarbons in marine sediments by gas-liquid chromatography. draft(E) 22.09.82
- No. 20 UNEP/IOC: Monitoring of petroleum hydrocarbons in sediments. in preparation
- No. 26 UNEP/IAEA: Determination of total mercury in marine sediments and suspended solids by cold vapour atomic absorption spectrophotometry. draft(E) 25.03.85
- No. 27 UNEP/IAEA: Determination of total cadmium in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 25.03.85
- No. 31 UNEP/IAEA: Determination of total chromium in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85
- No. 32 UNEP/IAEA: Determination of total cobalt in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85
- No. 33 UNEP/IAEA: Determination of total copper in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85
- No. 34 UNEP/IAEA: Determination of total lead in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85
- No. 35 UNEP/IAEA: Determination of total nickel in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85

- No. 36 UNEP/IAEA: Determination of total vanadium in marine sediments by flameless atomic absorption spectrophotometry. draft(E) 17.07.85
- No. 37 UNEP/IAEA: Determination of total iron in marine sediments by flame atomic absorption spectrophotometry. draft(E) 01.03.86
- No. 38 UNEP/IAEA: Determination of total manganese in marine sediments by flame atomic absorption spectrophotometry. draft(E) 01.03.86
- No. 39 UNEP/IAEA: Determination of total zinc in marine sediments by flame atomic absorption spectrophotometry. draft(E) 01.03.86

E. Chemical contaminants in estuarine waters and suspended matter

- No. 19 UNEP/IOC/IAEA: Determination of total mercury in estuarine waters and suspended sediment by cold vapour atomic absorption spectrophotometry. draft (E) 25.03.85
- C UNEP/IAEA: Guidelines for monitoring of estuarine in preparation waters and suspended matter.
- E UNEP/WHO/IAEA: Determination of phosphorus in suspended matter and sediments in preparation
- F UNEP/WHO/IAEA: Determination of nitrogen in suspended matter and sediments. in preparation
- G UNEP/WHO/IAEA: Determination of BOD₅ and COD in estuarine waters. in preparation
- I UNEP/IOC/IAEA: Determination of total cadmium in estuarine waters and suspended matter. in preparation
- AF UNEP/IOC/IAEA: Guidelines for the determination of riverine input of contaminants to estuaries in preparation

F. Chemical contaminants on beaches

- No. 15 UNEP/IOC/IAEA: Monitoring of tar on marine beaches. draft(E) 25.03.85

G. Atmospheric chemical contaminants

- No. 24 UNEP/WMO/IAEA: Sampling of aerosols and wet precipitation for analysis of chemical pollutants. draft(E) 12.04.85
- O UNEP/IAEA: Determination of selected trace metals in aerosols and in wet precipitation. in preparation
- P UNEP/IAEA: Determination of halogenated hydrocarbons in aerosols and in wet precipitation. in preparation
- Q UNEP/WMO/IAEA: Sampling of dry deposition. in preparation

H. Effects on marine organisms and ecosystems

- No. 25 SPC/UNEP: Coral reef monitoring handbook. (E) 27.08.84
- A UNEP: Sampling and identification of common Mediterranean Scyphomedusae and evaluation of their occurrence. in preparation
- H UNEP/FAO/IAEA: Acute biological toxicity tests. in preparation
- J UNEP/FAO/IAEA: Biological non-acute toxicity tests. in preparation

I. Standard physical, chemical and meteorological observations

- K UNEP/IOC/IAEA: Determination of basic oceanographic and meteorological conditions. in preparation
- L UNEP/IOC/IAEA: Determination of standard physical and chemical parameters. in preparation

J. Miscellaneous methods

- AD UNEP/WHO/IAEA: Determination of methylmercury, total mercury and selenium in human hair. in preparation
- AE UNEP/WHO/IAEA: Guidelines for monitoring and epidemiological studies on health effects of methylmercury. in preparation
- AG UNEP/IAEA: Guidelines for the use of Reference Methods in marine pollution studies. in preparation

Annex VI

Summary on intercalibration exercises as at March 1986

1985 Exercises

1. MED POL - Petroleum Hydrocarbon Intercalibration

Samples distributed: SD-K-1 (sediment) and MA-K-1 (oyster homogenate)
Initial distribution date : 23 October 1985
Reply date: 31 January 1986
Replies received by March 1986: None
Participants from Mediterranean region: 11 - Cyprus, Egypt, France,
Greece, Lebanon, Libya, Malta, Spain, Tunisia, Turkey, Yugoslavia

2. MED POL participants in IAEA Intercalibration

Samples distributed: MA-A-3/TM (shrimp, trace metals)
MA-A-3/OC (shrimp, organochlorines)
MA-B-3/OC (fish, organochlorines)
Initial distribution date: 23 September 1985
Reply date: 31 May 1986
Participants from Mediterranean region: 7 - Egypt, France, Italy, Libya,
Spain, Turkey, Yugoslavia

3. Occasional requests from previous exercises

Requests from Mediterranean States: 5 - Egypt (2), France, Spain,
Yugoslavia

Reports published in 1985 from previous exercises

- IAEA Report No. 24 - Intercomparison of Trace Element Measurements in Marine Sediment Sample SD-N-1/2, June 1985.
Participant laboratories from Mediterranean region: 8 - France (2), Italy (2), Monaco (1), Turkey (2), Yugoslavia (1).
- IAEA Report No. 26 - Intercalibration of Analytical Methods on Marine Environmental Samples, Trace Element Measurements on Mussel Homogenate (MA-M-2/TM), October 1985.
Participant laboratories from Mediterranean region: 10 - France (4), Italy (2), Monaco (2), Spain (1), Turkey (1).
- Final report of the IAEA/UNEP (MED POL) Intercalibration of the Analysis of Marine Environmental Samples for Organochlorine Compounds (Samples SD-M-1/OC and MA-M-2/OC), 1986.

Available (limited) stocks of reference material

Trace Metals

SD-N-1/2 - sediments
MA-A-1 - copepods

Petroleum Hydrocarbons

MA-K-1 - oyster homogenate

Chlorinated Hydrocarbons

MA-M-2/OC - mussels
MA-A-1/OC - copepods
MA-A-2/OC - fish
SD-M-1/OC - sediments

Annex VII

Service visits to the national institutions
January 1985 - March 1986

Duty Period	Destination	Services
1. 28-30 March 1985	Piran, Yugoslavia	- Varian AAS 1250
2. 08-12 July 1985	Athens, MED Unit	- Computer Units of MAP
3. 09-15 August 1985	Alexandria, Egypt (Fisheries)	- Varian AAS 1250 - Varian GC 2450
4. 15-16 August 1985	Alexandria, Egypt (University)	- Varian AAS 175 - Varian GC 3700
5. 15-16 September 1985	Zagreb, Yugoslavia	- Testing of Jerome mercury analyser
6. 17-18 September 1985	Rovinj, Yugoslavia	- Aanderaa current meters - Varian AAS 1250 - Hewlett Packard GC
7. 19-20 September 1985	Piran, Yugoslavia	- Varian AAS 1250
8. 29-02 Sept./Oct. 1985	Split, PAP/RAC	- Installation of WANG computer
9. 09-12 December 1985	Malta, ROCC	- Installation of WANG computer
10. 03-08 February 1986	Salambo, Tunisia	- Installation of WANG computer
11. 06-07 February 1986	La Goulette, Tunisia	- Varian recorder 9176 - Varian automatic sample dispenser
12. 15-16 March 1986	Nicosia, Cyprus	- Aanderaa current meters - Aanderaa tape reader
13. 16-23 March 1986	Nicosia, Cyprus	(Service of instruments located in Beirut, Lebanon) - Varian GC 3700 - Varian recorder 9176 - Varian carbon rod atomiser CRA-90

Annex VIII

Trainees and fellowships

I. ON-JOB TRAINING AND SCIENTIFIC VISITS (January 1985 - March 1986)

Scientists and institutions	Dates and institutions of training	Purpose of training/visit
<u>CYPRUS</u>		
Mr. D. Damaskinos Ministry of Agriculture Fisheries Dept. Nicosia	23-26 October 1985 IOKAE Athens	Current measurements analysis
Ms.M.Hadjichristophorou Ministry of Agriculture Fisheries Dept. Nicosia	20-23 January 1986 University of Athens	Discussions on the statistical aspects of the effects of thermal effluents on ecosystems
<u>GREECE</u>		
Ms. M. Botsivali General Chemical State Laboratory Athens	03-28 June 1985 ILMR - IAEA Monaco	Measurements of hydrocarbons in the marine environment
<u>MOROCCO</u>		
Ms. Assila Ecole Mohammedia d'Ingenieurs Rabat	03-28 June 1985 ILMR - IAEA Monaco	Measurements of hydrocarbons in the marine environment
Mr. El Hraiki Inst. Nat. Agronomique et Veterinaire Rabat	03-28 June 1985 ILMR - IAEA Monaco	Measurements of hydrocarbons in the marine environment
Ms. H. Idrissi Inst. Scient. des Pêches Maritimes Casablanca	13-27 October 1985 ILMR - IAEA Monaco	Analysis of samples for petroleum hydrocarbons

Scientists and institutions	Dates and institutions of training	Purpose of training/visit
<p>Ms. T. Jouter Inst. Scient. des Pêches Maritimes Casablanca</p>	<p>03-28 June 1985 ILMR - IAEA Monaco</p>	<p>Measurements of hydrocarbons in the marine environment</p>
<p>Mr. E. Jellal Lab. G. Sanitaire E.M.I. Rabat</p>	<p>07-31 January 1986 Lab. IRH, Nancy France</p>	<p>Sampling and analysis of waste waters</p>
<p>Mr. M. Kessabi Dept. de Pharmacie, Toxicologie et Biochimie Rabat</p>	<p>29 Aug.-20 Sept. 1985 Service de Pharmacie Ecole Nat. Veterinaire de Toulouse</p>	<p>Heavy metals</p>
<p>Mr. El Oufiri Inst. Nat. Agronomique et Veterinaire Rabat</p>	<p>03-28 June 1985 ILMR - IAEA Monaco</p>	<p>Measurements of hydrocarbons in the marine environment</p>
<p><u>YUGOSLAVIA</u></p>		
<p>Ms. L. Dravec Inst. of Public Health Pula</p>	<p>03-28 June 1985 ILMR - IAEA Monaco</p>	<p>Measurements of hydrocarbons in the marine environment</p>
<p>Ms. M. Horvat Josef Stefan Inst. Ljubljana</p>	<p>31 March-15 April 1986 IFREMER Nantes</p>	<p>Trace element analysis by GC</p>
<p>Ms. M. Najdek Rudjer Boskovic Inst. Rovinj</p>	<p>20 Nov.-20 Dec. 1985 ILMR - IAEA Monaco</p>	<p>Measurements of hydrocarbons in the marine environment</p>
<p>Mr. L. Sipos Fac. of Engineering Univ. of Zagreb</p>	<p>06-10 May 1985 ILMR - IAEA Monaco</p>	<p>Testing of Hg analyser</p>

II. 1985 FELLOWSHIPS AND ATTENDANCE AT MED POL AND MED POL - RELATED MEETINGS

a. WHO/UNEP Intercalibration Exercise and Consultation Meeting on Microbiological Methods for Coastal Water Quality Monitoring, Split, 15-20 April, 1985

Mr. J. Belian, Lebanon 1/
Mr. A.F. Boargob, Libya 1/
Mr. B. Cihangir, Turkey 1/
Ms. F. Gungor, Turkey 1/
Mr. G. Papageorgiou, Cyprus 1/
Mr. N. Platzner, Israel 1/

b. WHO Workshop on Treatment and Discharge of Industrial Waste Waters in the Mediterranean Area, Venice, 10-14 June 1985

Mr. A. Adin, Israel 2/
Mr. E. De Fraja Frangipane, Italy 2/
Mr. J. Degaetano, Malta 2/
Mr. A. Economopoulos, Greece 2/
Mr. I. Jacovides, Cyprus 2/
Ms. D. Manfredi, France 2/
Ms. M. Mastrovic, Yugoslavia 2/
Mr. R. Mujeriego, Spain 2/
Mr. D. Orhon, Turkey 2/
Mr. Y.F. Ozturk, Turkey 2/
Mr. S. Shawaf, Syria 2/
Mr. S. Tedeschi, Yugoslavia 2/

c. Conference on Estuarine and Coastal Pollution, Plymouth, 16-19 July 1985

Ms. A. Mourmouris, Greece

d. Second International Symposium on the Brine Shrimp Artemia, Antwerpen, 1-4 September 1985

Ms. J. Castritsi-Catharios, Greece

e. 3rd International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, Istanbul, 1-4 September 1985

Mr. B. Fattal, Israel
Mr. K. Fytianos, Greece
Mr. B. Lavie, Israel
Ms. D. Regner, Yugoslavia
Ms. V. Turk, Yugoslavia

1/ paid through the approved funds for the meeting
2/ financed by WHO/EURO

f. International Workshop on Red-Algal Blooming in the Adriatic Sea, Bologna, 9-14 September 1985

Mr. D. Degobbis, Yugoslavia
Mr. M. Orlic, Yugoslavia

g. 5th International Conference on Heavy Metals in the Environment, Athens, 10-13 September 1985

Ms. J. Pavicic, Yugoslavia

h. The Workshop on Modern Trends on Systematics, Ecology and Evolution of Hydroids/hydromedusae, Ischia, 22 September - 6 October 1985

Mr. A. Benovic, Yugoslavia
Mr. F. Boero, Italy
Ms. J. M. Gili, Spain
Ms. J. Goy, France
Ms. I. Roca, Spain
Ms. T. Vucetic, Yugoslavia

i. International Regional Conference on Pollution of the Mediterranean Sea, Split, 2-5 October 1985

Mr. F. El-Sharkawi, Egypt

j. Meeting on the Effects of Pollution on Marine Ecosystems, Blanes, 7-11 October 1985

Mr. D. Abel, Greece 1/
Mr. A. Bakalem, Algeria 1/
Mr. A. Castelli, Italy 1/ 3/
Ms. J. Castritsi-Catharios, Greece 1/
Mr. B. Cihangir, Turkey 1/ 3/
Mr. C. Curini, Italy 1/ 3/
Mr. S. Di Geronimo, Italy 1/ 3/
Ms. M. Hadjichristophorou, Cyprus 1/
Mr. Y. Halim, Egypt
Mr. A. Kocatas, Turkey 1/
Mr. S. Lakkis, Lebanon 1/
Ms. I. Marasovic, Yugoslavia 1/
Mr. E. Nevo, Israel
Ms. A. Nicolaidou, Greece 1/
Mr. P. Panayotidis, Greece 1/
Ms. D. Regner, Yugoslavia 1/
Mr. H. Saleh, Egypt 1/
Mr. G. Stora, France 1/
Mr. D. Zavodnik, Yugoslavia 1/

1/ paid through the approved funds for the meeting
3/ per diem only

k. 8th International Symposium on Medical Oceanography, Nice, 9-12 October 1985

Mr. J. Cicek, Yugoslavia
Ms. D. Fuks, Yugoslavia

l. VII Symposium on Physiological Effects of Pollutants in Estuarine and Coastal Organisms, Georgetown, South Carolina, USA, 21-24 October 1985

Ms. M. Krajnovic-Ozretic, Yugoslavia 4/

m. WHO/UNEP Consultation Meeting on the Correlation Between Coastal Water Quality and Health Effects, Follonica, 21-25 October 1985

Mr. A.F. Abdel-Latif, Egypt 1/
Mr. S. Atallah, Tunisia 5/
Mr. N. Benmansour, Morocco 1/
Mr. J. Brison, France 1/
Mr. G. Bronzetti, Italy 1/
Mr. V. Cabelli, USA 6/
Mr. F.M. El-Sharkawi, Egypt 1/
Mr. B. Fattal, Israel 1/
Mr. E. Geldreich, USA 6/
Mr. V. Krikelis, Greece 1/
Mr. R. Mujeriego, Spain 1/
Mr. J.A. Papadakis, Greece 1/
Mr. S. Shawaf, Syria 5/
Mr. H.I. Shuval, Israel 6/
Mr. T. Stroffolini, Italy 1/
Mr. A. Vassallo, Malta 1/
Mr. L. Villa, Italy 1/

n. 5th Intercalibration Exercise and Consultation Meeting on Microbiological Methods for Coastal Water Quality Monitoring, Marseille, 18-23 November 1985

Mr. R. Ben Aissa, Tunisia 1/
Mr. E. Chamekh, Algeria 1/
Mr. V. Gauci, Malta 1/
Mr. M.N. Loubaris, Morocco 1/
Mr. R. Mujeriego, Spain 1/
Mr. A.M. Saleh, Egypt 1/
Mr. S. Sobot, Yugoslavia 1/
Ms. D. Spala, Greece 1/
Ms. Y. Yoshpe-Purer, Israel 1/

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- 1/ paid through the approved funds for the meeting
4/ only partial grant
5/ financed by WHO/EMRO
6/ financed by UNEP, OCA/PAC

Annex IX

MED POL - PHASE II budget for 1985-1987

MONITORING

	1985 ^{1/}	1986 ^{2/}	1987 ^{2/}
1. PERSONNEL <u>A/</u>			
<u>Experts/Consultants</u>			
- FAO Fishery Expert, P-5	12mm 77,760	12mm 65,000	12mm 67,000
- WHO Senior Scientist, P-5	12mm 77,760	12mm 73,000	12mm 75,000
- IAEA Maintenance Engineer, P-3	12mm 64,800	12mm 60,000	12mm 62,000
<u>Administrative Support</u>			
- FAO Secretary, Athens, Local G-4	12mm 13,000	12mm 12,000	12mm 14,000
- WHO Secretary, Athens, Local G-4	12mm 13,000	12mm 14,000	12mm 15,000
- WHO Secretary, Copenhag. Loc.G-4	6mm 7,000	6mm 8,000	6mm 9,000
- IAEA Lab.Assist., Monaco, Local G-5	12mm 30,780	12mm 25,000	12mm 27,000
Component Total	284,100	257,000	269,000
2. TRAVEL <u>B/</u>			
- FAO	7,000	10,000	10,000
- UNESCO/IOC	3,000	5,000	5,000
- WHO	7,000	10,000	10,000
- WMO	3,000	5,000	5,000
- IAEA	18,000	20,000	20,000
Component Total	38,000	50,000	50,000

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

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

1/ As approved by the Extraordinary Meeting of the Contracting Parties, Athens, 10-13 April 1984 (UNEP/IG.49/5)

2/ As approved by the Fourth Ordinary Meeting of the Contracting Parties, Genoa, 9-13 September 1985 (UNEP/IG.56/5)

	1985	1986	1987
3. SUBCONTRACTS			
- Intercalibration contracts (through WHO)	10,000	-	-
- Intercalibration of petroleum hydrocarbon analytical methods (through IOC)	12,000 ^{1/}	6,000	-
- Printing of VII ICSEM/IOC/UNEP proceedings (ICSEM through the Secretariat)	25,000	-	-
- Printing of VIII ICSEM/IOC/UNEP proceedings (ICSEM through the Secretariat)	-	-	15,000
- Assistance through agreements	252,600	316,600	431,000
Component Total	299,600	322,600	446,000
4. MEETINGS/TRAINING/WORKSHOPS/FELLOWSHIPS			
<u>Meetings:</u>			
- Working Group for Scientific and Technical Co-operation	45,000	40,000	45,000
<u>Training:</u>			
- On-job training (through the Secretariat)	82,900	80,000	70,000
<u>Fellowships:</u>			
- Fellowships for attendance at meetings:			
- VIII ICSEM/IOC/UNEP Workshop	-	30,000	-
- Preparation of documentation to assess results of monitoring activities	-	-	30,000
- Consultation meeting on LBS monitoring (WHO)	-	-	15,000
- WHO intercalibration exercises	12,000	-	-
- Other meetings	45,000	30,000	25,000
Component Total	184,900	180,000	185,000

^{1/} US \$ 12,000 were rephased into 1986

	1985	1986	1987
<u>5. EQUIPMENT C/</u>			
<u>Expendable</u>			
- Spare parts for common maintenance service (through IAEA)	21,000	23,000	25,000
<u>Non-expendable</u>			
- Laboratory equipment (to ILMR)	18,000	18,000	17,500
Component Total	39,000	41,000	42,500
<u>6. RENTAL AND MAINTENANCE OF PREMISES D/</u>	-	-	-
Component Total	-	-	-
<u>7. OPERATION AND MAINTENANCE OF EQUIPMENT E/</u>			
- IAEA	1,800	1,800	2,000
Component Total	1,800	1,800	2,000
<u>8. REPORTING COSTS F/</u>			
- IAEA	1,300	1,300	1,500
Component Total	1,300	1,300	1,500
<u>9. SUNDRY G/</u>			
- IAEA	1,300	1,300	1,500
Component Total	1,300	1,300	1,500
GRAND TOTAL	850,000	855,000	997,500

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

D/ No direct costs to MED POL

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

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

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

RESEARCH

	1985	1986	1987
SUBCONTRACTS			
Activity			
A (Development of sampling and analytical techniques)	30,000	35,000	36,000
B (Development of reporting formats required according to the Dumping, Emergency and LBS Protocols),	18,000	16,000	18,000
C (Formulation of scientific rationale for Environmental Quality Criteria)	18,000	16,000	18,000
D (Epidemiological studies)	30,000	25,000	36,000
E (Guidelines and criteria for the application of the LBS Protocol)	18,000	16,000	18,000
F (Research on oceanographic processes)	18,000	20,000	26,000
G (Research on the toxicity, persistence, bioaccumulation, carcinogenicity and mutagenicity)	18,000	20,000	26,000
H (Eutrophication and concomitant plankton blooms)	20,000	25,000	26,000
I (Pollution-induced ecosystems modifications)	15,000	12,000	20,000
J (Effects of thermal discharges on marine and coastal ecosystems)	10,000	14,000	12,000
K (Biogeochemical cycles of specific pollutants)	20,000	25,000	30,000
L (Pollutant-transfer processes)	30,000	25,000	30,000
Sub-total	245,000	249,000	296,000

	1985	1986	1987
MEETINGS			
Activity			
A (Review Meeting on determination of mercury, lead and cadmium in marine sediments and organisms, Monaco, 3-6 November 1986)	10,000 <u>1/</u>	12,000	-
D (Consultation Meeting on correlation between coastal water quality and health effects, Follonica, 21-25 October 1985)	10,000	-	-
D (Consultation meeting on health effects of methylmercury in the Mediterranean, Athens, 15-19 September 1986)	-	12,000	-
D (Review meeting on the correlation between coastal water quality and health effects)	-	-	12,500
H (Meeting on water receiving capacity for eutrophivating substances)	-	12,000	-
I (Meeting on the effects of pollution on marine ecosystems, Blanes, 7-11 October 1985)	10,000	-	-
L (Workshop on air pollutant deposition)	-	-	12,000
L (Meeting of transport of pollutants by sedimentation)	-	-	12,000
Sub-total	30,000	36,000	36,500
GRAND TOTAL	275,000	285,000	332,500

1/ rephased into 1986