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**MEDITERRANEAN ACTION PLAN**

Meeting of MED POL National Coordinators

Athens, 18-22 March 1996

**PROGRESS REPORT BY THE COORDINATOR  
ON THE IMPLEMENTATION OF THE MED POL ACTIVITIES  
CARRIED OUT DURING THE PERIOD JANUARY 1995-JANUARY 1996**

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## Introduction

This document is a progress report of the activities related to the implementation of MED POL, including the Land-Based Sources and the Dumping Protocols, during the period January 1995-January 1996. It is submitted to the attention of the MED POL National Coordinators for information and comments. The Recommendations for 1997 activities are contained in document UNEP(OCA)/MED WG.104/3.

## **I IMPLEMENTATION OF THE LBS PROTOCOL AND THE DUMPING PROTOCOL**

### **a) Implementation of the LBS Protocol and the Dumping Protocol**

1. As a follow up to the process of revision of the LBS Protocol initiated in 1994, the Secretariat organized a Meeting of Legal and Technical Experts to examine amendments to the LBS Protocol which was held in Siracusa, hosted by the Government of Italy, from 4 to 6 May 1995 (UNEP(OCA)/MED WG.92/4).
2. The Meeting agreed on a number of amendments proposed by the Contracting Parties and the Secretariat and considered that the new text could be adopted by a Meeting of Plenipotentiaries preceded by a second Legal and Technical Meeting to agree on the pending issues.
3. The Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995) accepted the offer of the Government of Italy to host the second Meeting of Legal and Technical Experts to examine amendments to the LBS Protocol followed by the Conference of Plenipotentiaries to adopt amendments to the Protocol to be held in Siracusa on 3-4 and 6-7 March 1996, respectively.
4. All Contracting Parties to the Barcelona Convention became party to the LBS Protocol.
5. The Conference of Plenipotentiaries held in Barcelona, 9-10 June 1995, adopted amendments to the 1976 Dumping Protocol. The Final Act was signed by sixteen countries and the European Community. The amendments to the text will enter into force with the ratification by three fourths of the Contracting Parties.
6. During 1995 Italy submitted a report on permits issued in 1992, 1993 and 1994 related to the dumping of dredging spoils.
7. The Meeting of Technical Experts to prepare guidelines on the handling of sewage sludge and dredging spoils, hosted by the Spanish Government, will be held in Valencia from 20 to 24 May 1996.

**b) Implementation of LBS workplan activities**

8. After completion and collation of the reports on the pilot monitoring project on anionic detergents, the Secretariat started working on the preparation of a draft assessment document based on available results from routine monitoring as well as other relevant data. Following receipt of information on national legislation, the document was completed in November 1994, and is submitted to this meeting as UNEP(OCA)/MED WG.104/Inf.5. The relevant recommendations are included in document UNEP(OCA)/MED WG.104/3.

9. The updated version of the Guidelines for submarine outfall structures for Mediterranean small and medium-sized coastal communities, prepared jointly by WHO and UNEP after integration and harmonization of the first comprehensive version with the later complementary guidelines was sent in February 1994 to National MED POL Coordinators for comments. The revised document is submitted to this meeting as UNEP(OCA)/MED WG.104/Inf.7.

10. The document on Guidelines for treatment of effluents prior to discharge into the Mediterranean Sea, prepared jointly by WHO and UNEP was reviewed and updated by including information regarding the situation in the Mediterranean. The final version was sent out in English to National MED POL Coordinators in April 1994. This document is submitted to this meeting in as UNEP(OCA)/MED WG.104/Inf.8.

11. The work on the preparation of the survey of pollutants from land-based sources in the Mediterranean, organized by WHO/UNEP, continued. An evaluation of the questionnaires submitted covering liquid domestic discharges, industrial pollutants and petroleum hydrocarbons was completed in 1994. Additional countries' questionnaires were received in later 1995 and evaluated. A meeting on the evaluation of the survey took place in Athens in December 1995 and six participants attended it. The evaluation of the survey of Pollutants from Land-Based Sources in the Mediterranean is submitted to this meeting as UNEP(OCA)/MED WG.104/Inf.10.

12. A consultation meeting on health risks from marine pollution in the Mediterranean was held in Guardamangia, Malta, from 30 November to 3 December 1994, the purpose of which was to review and update a document under the same title. It was attended by 14 participants (Croatia, France, Greece, Italy, Malta, Morocco, Turkey, United Kingdom, European Commission, and WHO). The participants made several recommendations including updating of the content of the document, and agreed on the final format. The final version of the document was completed during February 1995. The English version was published and widely distributed in May 1995 and arrangements have been made to translate the document into French. This activity has been financed from WHO's regular budget as part of the Organization's contribution to MAP.

13. The Guidelines for monitoring land-based sources of marine pollution, prepared jointly by WHO and UNEP, were finalized in December 1994 and distributed to all MED POL National Coordinators and is submitted to this meeting as reference document EUR/ICP/CEH041(1).

14. The work for the preparation of an assessment document on the state of pollution of the Mediterranean Sea by herbicides continued. The relevant document will be finalized during 1996.

15. A consultation on microbiological quality of coastal recreational and shellfish growing waters organized by WHO/UNEP was held in Athens from 28 November to 2 December 1995 and was attended by 21 participants from 13 Mediterranean and 1 non-Mediterranean countries and the EU (Albania, Croatia, Cyprus, Greece, Israel, Italy, Libya, Malta, Morocco, Slovenia, Spain, Tunisia, Turkey, United Kingdom). The meeting focused on the problems related to the microbiological quality of coastal recreational and shellfish waters in the Mediterranean as well as on the microbiological pollution data submitted to the MED POL-Programme. The document on the state of microbiological pollution of the Mediterranean, prepared for the meeting, was amended as a result of the discussions and is submitted to this meeting as UNEP(OCA)/MED WG.104/Inf.9.

16. As a follow up to the Barcelona Resolution adopted in June 1995, and in particular to the reduction of toxic, persistent and liable to accumulate substances, a number of preparatory consultations took place in Paris in the premises of the UNEP/Industry and Environment Office for the organization of a Meeting on "Toxics reduction in the Mediterranean" to be held in Marseilles from 2 to 4 October 1996. UNEP/IE will, jointly with UNEP/MAP, organize the above Meeting with the financial support of the French Ministry of Environment and the Marseilles local authorities.

17. The first draft of the Assessment of the State of Eutrophication in the Mediterranean Sea was submitted for comments to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee which took place in Athens from 3-8 April 1995. However, due to lack of time, the document was not discussed during the meeting and delegations were requested to provide comments to the Secretariat in writing for the improvement of the document. It was specifically stressed that delegations should provide additional information relevant to their countries, especially as far as existing legal provisions are concerned. All comments received were incorporated in the new version which is presented to this meeting as document UNEP(OCA)/MED WG.104/Inf.6. No control measures are proposed for this problem as it will be tackled in the framework of the revised LBS protocol using the new envisaged approach.

18. A new version (document UNEP(OCA)/MED WG.89/Inf.3) of the assessment document on copper and zinc was submitted to the Joint Meeting of the Scientific and Technical Committee and Socio-Economic Committee which took place in Athens from 3-8 April 1995. However, due to lack of time, the document was not discussed and the delegations were requested to provide their comments in writing. The comments received were incorporated into the new version of the document that is submitted to the present meeting as document UNEP(OCA)/MED WG.104/Inf.4. The recommendations concerning the control of pollution from copper and zinc are included in document UNEP(OCA)/MED WG.104/3.

19. The document on Guidelines for authorizations for the discharge of liquid wastes into the Mediterranean Sea prepared jointly by WHO and UNEP was reviewed and updated following recommendations and comments made during the past consultation meetings on this subject. The final version is submitted to this meeting as UNEP(OCA)/MED WG.104/Inf.11.

**c) Research projects relevant to the LBS Protocol**

20. On the basis of the research projects which had been submitted to the Unit, by the end of 1995 there were 30 ongoing projects covering two of the six research areas of the MED POL research component.

Under the following paragraphs only activities directly linked to the implementation of the LBS Protocol will be reviewed. Those directly linked to monitoring are dealt with in paragraph 58.

Research Area III (Effects of selected contaminants on marine organisms, communities and ecosystems or man and human populations) (It also includes activities previously called C, D, G, H, I, and J)

Projects completed in 1995	:	2
Projects ongoing on 31 December 1995	:	30
Total 1995 contribution	:	US\$ 67,500

Ongoing projects dealt with the development of biological effects techniques, eutrophication and investigation of toxic phytoplankton, as well as health effects and risk assessment of various pollutants and jellyfish.

Research Area V (Determination of factors affecting the efficiency of waste treatment and disposal methods and development of environmental quality criteria) (It also includes activities previously called B and E)

Projects completed in 1995	:	-
Projects ongoing on 31 December 1995	:	-
Total 1995 contribution	:	Nil

## II MONITORING OF MARINE POLLUTION IN THE MEDITERRANEAN

### a) Monitoring programmes and supporting activities

21. During 1995 MED POL National Monitoring Programmes were finalized and signed by Albania, Croatia, Cyprus, Egypt, Greece, Israel, Lebanon, Morocco, Slovenia, Syria, Tunisia and Turkey for a total direct contribution of 540,000 US Dollars. Negotiations were held with Algeria and a programme is expected to be finalized in 1996. During 1995 the following countries reported monitoring results : Croatia, Greece, Italy and Morocco.

22. An expert meeting on airborne pollution of the Mediterranean Sea was held in Paris from 31 October to 4 November 1994 and was attended by 20 experts from 14 countries, representatives of WMO, UNEP, IAEA and UN ECE and observers from some relevant international programmes. The meeting prepared recommendations on the objectives, basic principles and implementation of airborne pollution monitoring, modelling, assessment and control for 1996-2005 to be taken into account in the development of the operational details of MED POL-Phase III. The Meeting also considered current national activities, agreed on data reporting formats and procedures and adopted a draft manual on airborne pollution measurements and recommendations on quality assurance.

23. During 1995 both hardware and software available to MED POL data processing were enhanced. In addition, emphasis was given to the computerization and analysis of available micro-organism, heavy metal and halogenated hydrocarbon data. As a result of the effort of the Secretariat, in 1995, a larger number of countries submitted their data directly on magnetic media. Also Geographic Information System (GIS) and Desktop Mapping (DM) applications were widely used with the acquisition of new software, such as ARC\*VIEW, IDRISI and WORLD CHART. As a result, all 1995 monitoring agreement maps were prepared using these new facilities.

24. Two additional data reporting formats (namely the microbial pollutants in sand and the radionuclides in sea water) were prepared and added to the formats already in use.

25. Two manuals related to the computerization of MED POL pollution data (namely the "Codes" and the "Data Transfer Formats") were extensively revised and disseminated to all the MED POL participating laboratories. Finally, Internet (use of which commenced in 1994) was established as an additional means of communication and research.

26. The project financed by the Italian Government concerning the processing, analysis and presentation of pollution data, which had started in July 1994, was completed in December 1995. The project worked on the computerization of the MED POL marine pollution data, its statistical and scientific analysis, the presentation of results and regional assessment (by use of enhanced hardware and software tools

such as desktop publishing-DTP, geographic information systems-GIS, and multimedia). The final output of the project, i.e. a set of technical guidelines for the processing, analysis and presentation of marine pollution data, was presented to a training course held in Trieste from 11 to 16 December 1995 and will be widely distributed to all MED POL participating Institutes (see paragraph 56.).

27. The draft "Programme for the Assessment and Control of Pollution in the Mediterranean Region MED POL-Phase III (1996-2005)" was presented to the Joint Committees Meeting held in April 1995 (UNEP(OCA)/MED WG. 89/5) but was not discussed because of lack of time. The Meeting agreed that the document would be presented to the Meeting of the MED POL National Coordinators while comments on its content would be sent to the Secretariat by September 1995 to be used for the preparation of a possible new draft.

As a result, all National Coordinators were contacted in June 1995 in order to solicit comments on the document. By the end of September 1995, four countries had submitted comments and remarks which were taken into account by the Secretariat. In addition, the Secretariat convened an informal consultation of independent experts which was held in Athens on 13-15 December 1995 (UNEP(OCA)/MED WG.102/2). The Consultation reviewed the draft Programme and suggested some modifications. The Secretariat also took into full consideration the recent adoption of the amendments to the Barcelona Convention, the Dumping Protocol, the adoption of MAP II and the process of revision of the LBS Protocol. As a result, the Secretariat prepared a new draft document which took into account all comments and suggestions received as well as the new objectives and priorities of the renewed Barcelona system. The document is now presented to the Meeting for approval with a view at its submission to the Extraordinary Meeting of the Contracting Parties for adoption in July 1996 (UNEP(OCA)/MED WG.104/4).

28. The XXIX Inter-Agency Advisory Committee (IAAC) for MED POL was convened in Athens from 9 to 12 January 1996. It reviewed the work carried out in 1995 and planned in 1996 and it discussed a draft budget of MED POL for 1997.

29. The implications of the expansion of the green tropical alga *Caulerpa taxifolia* in the Mediterranean were brought to the attention of the Secretariat and, as a result, an information document (UNEP(OCA)/MED WG.89/Inf.9) was prepared and presented to the Joint Meeting of the Scientific and Technical Committee and Socio-Economic Committee (Athens, 3-8 April 1995). The meeting agreed that the precautionary principle should be applied in this case and that the Secretariat should follow up the issue in cooperation with the other international bodies concerned.

In September 1995, the Secretariat received from the Council of Europe a recommendation on the control of proliferation of *Caulerpa taxifolia* in the Mediterranean which was adopted by the Standing Committee of the Convention for the Conservation of European Wildlife and Natural Habitats (Bern Convention) at its 14th meeting (20-24 March 1995). This recommendation, which was circulated to all MAP focal points, suggests that the Contracting Parties to the Bern Convention



bordering the Mediterranean or Black Sea should inform States, not party to the Convention, of any proliferation of *Caulerpa taxifolia* colonies in the Mediterranean and the Black Sea.

30. The first assessment of airborne pollution of the Mediterranean Sea by sulphur and nitrogen compounds and heavy metals was completed in 1994 and published as MAP Technical Report Series No. 85. The report contains maps and figures of total, dry and wet annual depositions on the sea, its eleven sub-basins and adjacent countries, deposition densities, concentrations of considered pollutants in air and precipitation, monthly and seasonal variations and contributions to the airborne pollution from various countries.

#### **b) Pilot surveys**

31. In the framework of the activities for the development of biological effects monitoring, additional MED POL participating institutions were offered assistance (including training of personnel) in their efforts to develop and apply in their own laboratories one or more of the four recommended biomonitoring techniques (metallothioneins, EROD, lysosomal membrane stability and DNA alkaline elution technique). In the meantime, intercalibration exercises were initiated through the University of Nice for EROD and through the University of Genova for metallothioneins and lysosomal membrane stability.

The ICoD/FAO/UNEP workshop (Malta, 24-25 March 1995), which was organized just before the 1995 CIESM General Assembly (Malta, 27-31 March 1995), reviewed the results of the EROD intercomparison exercise which were found satisfactory and discussed future activities. During the CIESM/UNEP workshop held on 31 March 1995 in the framework of CIESM General Assembly, a special session on biomarkers was organized which was attended by about 30 Mediterranean scientists (see paragraph 49.).

In view of the progress achieved so far, in September 1995 the National Coordinators were asked to propose national laboratories which would be capable and willing to participate in a pilot phase of the biomonitoring programme which was then initiated in January 1996. Twelve laboratories from 8 countries are now participating in the programme, hoping that this number will increase with MED POL support in the purchase of the necessary equipment and the training of personnel.

32. The pilot survey of fungicides in selected Mediterranean areas was completed and a small meeting of the principal investigators was held at the University of Milano (11-13 May 1995) to review the results and prepare the consolidated final report. The report of the meeting is published as document FIR/MEDPOL/MIL/3.

### c) Data Quality Assurance

33. The Marine Environmental Studies Laboratory (MESL) of IAEA-MEL, Monaco, continued to assist MED POL with the implementation of intercalibration exercises and a comprehensive data quality assurance programme. The work focused on the continuing development of an integrated approach towards quality assurance which includes training, analytical intercomparisons, joint monitoring exercises, the preparation and distribution of reference materials and standards and the provision of support for instrument installation and servicing.

34. To improve the quality of airborne pollution measurements three quality control exercises were conducted by WMO in 1994-1995: two with artificial rain samples to check the quality of analyses of major ions and heavy metals in precipitation and one with exposed air filters to check the quality of filter treatment procedures and chemical analyses of heavy metals in air.

#### Intercomparison exercises

35. Intercomparison exercises represent an essential element of method testing and are used as a basic tool for evaluating data quality at a global and regional basis. They have been regularly organized for MED POL laboratories since 1973 by the IAEA Monaco Laboratory. The participation of MED POL laboratories in these exercises is mandatory. During the 1994/95 period an extensive programme was carried out through the launching of six intercomparison exercises.

36. A world-wide intercomparison exercise for the determination of trace organic contaminants in mussel homogenate (IAEA-142) involved 18 MED POL laboratories which reported results for petroleum hydrocarbons and 26 for organochlorine compounds. The review of the laboratories' performance showed that most of the participating laboratories produced satisfactory data. Only 5 laboratories out of 26 appeared as having difficulties with the determination of chlorinated hydrocarbons, while only 4 laboratories failed in the measurement of petroleum hydrocarbons. This is a significant improvement compared to previous years. The laboratories with bad performance are currently being contacted by the relevant staff of IAEA/MEL in order to assist them and correct their analytical problems.

37. Two new intercomparison samples for the determination of trace elements and methyl-mercury (IAEA-140/TM) and trace organic contaminants (IAEA-140/OC) pesticides, chlorinated and petroleum hydrocarbons and PCBs) were prepared. During 1994 homogeneity testing was done for trace organic contaminants and trace elements. The sample IAEA-140/OC was distributed in 1995 to MED POL laboratories. IAEA-140/TM will be distributed at the beginning of 1996. A new sediment sample was collected from Venice (IAEA-383) for preparation of a new intercomparison exercise for the determination of trace organic contaminants.

38. During 1995 two intercomparison samples for determination of trace elements in biota and sediments, MA-MEDPOL-1/TM and SD-MEDPOL-1/TM, respectively, were distributed to 80 laboratories in the Mediterranean. The deadline for reporting was the end of 1995. These two exercises were specifically organized for MED POL laboratories in order to test the reliability of laboratory procedures and the variability of analytical data within MED POL, as well as to target future investments in technical support. A report is being prepared and will be presented to the meeting of MED POL National Coordinators.

39. Intercomparison exercise of high-volume air (aerosol) samplers used by the Mediterranean countries was held in Oristano, Sardinia, Italy in May 1995. The intercomparison allowed to make recommendations on the most suitable samplers and on sampling and filter treatment procedures.

#### Reference Materials and calibration standards

40. On the basis of reports of the worldwide and regional intercomparison exercises, IAEA-142, Mussel Homogenate was certified as a reference material for organochlorine compounds and petroleum hydrocarbons. The same reference material has also been certified for total and methyl mercury based on a exercise organized among 12 highly qualified laboratories. This material contributed to the bank of reference materials stored at IAEA-MEL, which now includes several hundred bottles of over 10 different reference materials. Also a stock of calibration standards for trace organic contaminants and trace metal is maintained. They are both available on a cost-free basis to all MED POL laboratories.

41. In accordance with recommendations of the expert meeting on airborne pollution (see paragraph 22.), WMO purchased a set of Certified Reference Materials (CRMS) (rain water with certified concentrations of major ions and heavy metals) which will be sent to MED POL laboratories in 1996.

#### Quality Assurance Missions

42. As part of the DQA strategy, five expert missions were organized to Lebanon, Morocco (twice), Syria and Tunisia. The DQA missions showed the current problems of the MED POL laboratories related to the effective participation in the MED POL monitoring programme. The laboratories were provided with advice and support, including provision of consumables essential to their work.

#### Training on DQA

43. Training represents an integrated part of the Data Quality Assurance Programme in order to ensure good quality analyses and to identify those laboratories experiencing difficulties. Training of MED POL analysts and technicians is regularly organized in the use and maintenance of analytical instruments to quantify environmental pollutants (trace metals and organometals, chlorinated hydrocarbons, petroleum hydrocarbons, organophosphorus pesticides, herbicides, fungicides, sterols

(sewage pollution indicators). During 1995 three weeks of intensive training courses were organized for four trainees from Slovenia, Croatia, Greece and France for the determination of trace metals and organometals.

44. One on-the job course was organized in Morocco (4-15 December 1995) for the determination of trace metals in marine environmental samples for MED POL. The training course was held at the Institute National D'Hygiène (INH) in Rabat and was attended by eight participants from six MED POL national Institutions. The course addressed various aspects of trace metals within MED POL from sampling, sample handling storage, preparation, analyses and data interpretation. Participants were also instructed on the implementation of Good Laboratory Practice. The effectiveness of the training course will be tested through the distribution of the next intercomparison sample. In fact, through the results which will be reported, it will be possible to assess their performance and concentrate future efforts accordingly.

#### Reference methods

45. During 1995 work continued on the preparation of UNEP/IOC/IAEA Reference Methods and Technical Bulletins for Marine Pollution Studies. Thirteen methods were revised, eight new methods were issued, two methods were translated, and one Technical Bulletin was prepared. The series at present includes 75 volumes. These methods are available free-of-charge to all MED POL laboratories, are widely used in training programmes and are continuously up-dated. The status of preparation/editing/up-dating of the Reference Methods is regularly updated (on a half-yearly basis) and a list is available upon request.

#### **d) Instrument maintenance**

46. Instrument maintenance represents an important element of DQA. This service has evolved from its original narrow concept of the service engineer on routine and emergency visits to a wider one which includes training courses on preventative maintenance and to teach the users to trouble-shoot and correct basic faults. Lessons learned by the engineer in the last seventeen years of MAP service are thus gradually being transferred to the users in order to further reduce the "down-time" of instruments.

47. During 1995, the instrument maintenance engineer visited laboratories in Albania, Croatia, Egypt (2 labs), Lebanon, Morocco on two occasions (3 labs) Slovenia and Syria (2 labs). During the visits carried out in the second half of 1995, the maintenance engineer established contacts with Varian and Hewlett-Packard representatives in order to discuss the best possible (cost-effective) maintenance services in the future. In connection with these regular missions, the Maintenance Engineer, who is located within the IAEA/MEL laboratories, maintains a stock of spare parts for instrumentation used in MED POL Monitoring.

**e) Training and fellowships**

48. As in the past, during 1995 assistance was provided to MED POL participants in the form of individual or group training, visits of experts to less experienced laboratories, support for participation at MED POL meetings (workshops, intercalibration exercises and quality assurance meetings) and travel grants (fellowships) for attendance at meetings related to the MED POL Programme. A total of 77 scientists from 11 countries benefitted from this support programme.

49. Six scientists were assisted financially to enable their participation at the CIESM General Assembly and the CIESM/UNEP Workshop on Marine Pollution which has held in Malta from 27 to 31 March 1995. The CIESM/UNEP Workshop was organized in two sessions, the first one on the use of biomarkers in marine pollution assessment and the second on the ecological impact of accidental oil pollution.

50. During the intercomparison exercise on high-volume air samplers (see paragraph 39.) a weekly training course was held in May 1995 in Oristano, Italy on air sampling and sample handling techniques. The course was attended by fourteen trainees from seven countries.

51. The IOC/UNEP/WHO/FAO Training Course on Toxin Chemistry and Toxicology related to Harmful Algae was organized at the University of Trieste from 3-12 September 1995. Six Mediterranean scientists benefitted from this course.

52. The ICoD/UNEP/FAO/IOC Fourth Intensive Training Course on the Applications of Ecotoxicology in the Monitoring and Assessment of Marine Pollution in the Mediterranean was organized at the University of Genova from 11-22 September 1995. Five Mediterranean scientists were assisted to attend this course.

53. Two National training courses and intercalibration exercises on the determination of microbiological pollution in sea water were jointly convened by WHO and UNEP and the relevant national authorities. The first one was organized by the National Institute of Hygiene of Morocco in Rabat from 17-22 September 1995. It was attended by 12 participants from different laboratories engaged in microbiological monitoring of sea water. The second one was organized by the Institute of Oceanography and Fisheries in Split, Croatia from 11-16 December 1995 and it was attended by 11 participants.

54. The Third FAO/UNEP Sub-regional Workshop on the Monitoring of Chemical Contaminants in Marine Biota for Trends was organized at the University of Alexandria from 6-9 November 1995. Thirty Mediterranean scientists from Egypt, Cyprus, Israel and Libya benefitted from this course. The fourth and fifth workshop of this series will take place in Rabat (26-29 February 1996) for participants from Algeria, Morocco and Tunisia.

55. The IOC/UNEP Consultation on Modelling of Eutrophication Projects was held in Thessaloniki, Greece, 8 December 1995.

56. The UNEP/University of Trieste Training Course on management, processing, analysis and presentation of marine pollution data was held in Trieste from 11 to 16 December 1995, as part of the project financed by the Italian Government (see paragraph 26.) 24 scientists/managers from 16 Mediterranean countries attended the course.

57. Three scientists received individual training in the use of biomonitoring techniques.

**f) Research projects relevant to monitoring**

58. On the basis of the research proposals which had been submitted to the Unit, by the end of 1995 there were 37 ongoing projects covering four of the six research areas of the MED POL research component.

Under the following paragraphs only activities directly linked to monitoring are reviewed. Those directly linked to LBS Protocol are dealt with in paragraph 20.

Research Area I (Development and testing of methodologies for the characterization and measurements of specific contaminants) (It also includes activity previously called A)

Projects completed in 1995	:	4
Projects ongoing on 31 December 1995	:	5
Total 1995 contribution	:	US\$ 7,500

The ongoing projects dealt with the new methodologies related to the monitoring of organic matter and organophosphorus compounds, the use of remote sensing for pollution monitoring and methods for determination of microbial pollution.

Research Area II (Study of the physical, chemical and biological mechanisms of the pollutants' transport from the source to the repository) (It also includes activity previously called F and L)

Projects completed in 1995	:	3
Projects ongoing on 31 December 1995	:	10
Total 1995 contribution	:	US\$ 26,000

The ongoing projects dealt with the study and the modelling of atmospheric transport, dispersion and deposition of nutrients and heavy metals, and the circulation and pollution migration in eastern Mediterranean.

Research Area IV (Study of the fate of contaminants, including micro-organisms, in the marine environment, i.e. survival, degradation, transformation, bioaccumulation, etc.) (It also includes activity previously called K)

Projects completed in 1995	:	2
Projects ongoing on 31 December 1995	:	15
Total 1995 contribution	:	US\$ 35,000

The ongoing projects dealt with geochemical cycles of heavy metals, toxicity and bioaccumulation of organophosphorus pesticides, the fate of hydrocarbons in coastal waters and the survival of indicator organisms and pathogens in seawater and shellfish.

Research Area VI (Eutrophication and plankton blooms case studies)

Projects completed in 1995	:	2
Projects ongoing on 31 December 1995	:	7
Total 1995 contribution	:	US\$ 20,000

The ongoing projects covered the continuation of the case studies related to eutrophication in Thermaïkos Gulf and the Emilia-Romagna coast.

#### **g) Climate change**

59. The work on the implications of climate change on the coastal areas was completed in the framework of CAMPs Fuka, Albania and Sfax. Relevant documents will be published by April 1996.

60. The book "Climatic Change and the Mediterranean", volume 2 (608 pages) was published by Arnold Publishers in December 1995. The book contains the work on five case studies (Rhodes Island, Kastela Bay, Maltese islands, Syrian Coast, and Cres-Losinj islands) and comparative analysis of 11 Mediterranean studies.