

ANNEX IV
APPROVED RECOMMENDATIONS AND
PROGRAMME BUDGET FOR 1997

I. RECOMMENDATIONS:

The Contracting Parties agree:

A. INSTITUTIONAL AND FINANCIAL ARRANGEMENTS (Chapter III of MAP II)

(a) Financial Arrangements

1. To request the Secretariat to establish contact with the European Union (EU) to consider further development of its financial participation in MAP through an increase of its voluntary contribution.
2. To call on Mediterranean countries, Contracting Parties to the Barcelona Convention, to invite the EU, in the light of the expanded fields of activities defined in MAP II, to identify together with the Secretariat priority problems, and develop programmes and activities in the framework of the Mediterranean Action Plan which could be financed through the Euro-Mediterranean Initiative (MEDA).
3. To invite METAP to consider the further strengthening of its joint work with the Secretariat and an increased financial contribution to activities of common interest, such as: (a) development and implementation of the Regional Programme of Action and the National Programmes of Action for the implementation of the LBS Protocol, and in this context the identification of pollution "hot spots" and the preparation of feasibility studies for investment in the programme for their elimination; (b) capacity building in developing countries, in particular assistance to countries for the establishment or improvement of national systems of environmental inspections; c) improvement of the development of Integrated Coastal Areas Management (ICAM) in the Mediterranean and d) conservation of nature.

(b) Institutional Arrangements

1. To approve a revised structure of the personnel at the Coordinating Unit with the creation of an official post of Deputy Coordinator, a post of MEDPOL Coordinator and a post of a Marine Scientist within MEDPOL, by converting the present post of a Senior Marine Scientist, the post of Senior Fishery Officer (FAO) and the post of IAEA Maintenance Engineer (Monaco). The function of Deputy Coordinator will include coordinating the activities related to the implementation of sustainable development in the Mediterranean and assisting the work of the Mediterranean Commission on Sustainable Development (MCSD). The Secretariat in the course of the above restructuring should make every possible effort to retain experienced MED POL staff already serving in the MED Unit.

2. To further strengthen the cooperation of MAP with UN Agencies.
3. To invite the Coordinator to establish a small ad hoc group of limited duration, composed of representatives of the Contracting Parties, to examine the best possible structures for the Coordinating Unit and MED POL in the light of the activities to be carried out by MAP following the revision of the Convention and its Protocols in Barcelona in 1995.

The group will also review the role, functions and structures of the Regional Activity Centres and the Secretariat of the 100 Historic Sites and the relations they should maintain with one another. It will also make recommendations to be submitted to the Contracting Parties for their approval concerning the evaluation of the activities of the Regional Activity Centres and the Secretariat of the 100 Historic Sites.

4. To approve the Terms of Reference of the Mediterranean Commission on Sustainable Development (MCSD) as contained in Annex V and the Composition of the Commission as contained in Annex VI.
5. To recommend to the Governing Council of UNEP to extend the Mediterranean Trust Fund (MTF) through 31 December 1999.

(c) Strategic Priorities

1. To invite the Contracting Parties to give high priority to the implementation of the MAP legal instruments, and request the Secretariat to assist them in the implementation of those instruments, in particular the Land-based Sources and Specially Protected Areas Protocols as priority tasks.
2. To invite the Contracting Parties to make every effort for the full implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, through the development of National Programmes of Action as envisaged in the amended LBS Protocol.
3. To invite the Contracting Parties which are eligible to apply for projects with the Global Environment Facility (GEF), in particular projects in the fields of biodiversity and international waters.
4. To invite the Secretariat, in consultation with the Contracting Parties and with the assistance of two to three experts, to propose the development of a system of coherent reporting by the Contracting Parties in conformity with MAP II and the relevant provisions of the Barcelona Convention and its protocols.

B. SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN (Chapter I of MAP II)

SUPPORT TO THE MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT

1. To ask the Secretariat to assist through all its components the work of MCSD through the preparation of the necessary documentation and the organization of meetings.
2. To ask the Secretariat to submit to the Second Meeting of the Mediterranean Commission for Sustainable Development guidelines for the preparation of special national legislation ensuring the sustainable development of coastal areas notably employing innovative instruments as for example land use and land tenure policies.

1. INTEGRATING ENVIRONMENT AND DEVELOPMENT

(a) Observation and Systemic and Prospective Analysis of Environment and Development in the Mediterranean (Blue Plan-BP/RAC)

1. To invite the Secretariat (BP/RAC) to pursue and improve, in conformity with Agenda MED 21, the systemic and prospective analysis of development/ environment interactions in the Mediterranean and mainly its coastal regions, in particular the analysis of Mediterranean sustainable development problematics, and to identify short and medium-term objectives for sustainable development programmes, as a contribution to the decision-making process towards sustainable development and as technical support for the activities of the Mediterranean Commission on Sustainable Development.
2. To invite the Secretariat (BP/RAC) to prepare a medium (5 year) and long (10 year) term programme of activities ("Blue Plan 2000"), integrating its major functions, taking into consideration cooperation with MEDU and RACs and the production of a major Mediterranean output by the year 2000, and focusing on coastal regions.
3. To invite the Secretariat (BP/RAC) to develop and strengthen a Mediterranean environment and development information system, and to identify and elaborate pertinent indicators, statistics and information to monitor and evaluate Mediterranean institutions, environment and development, in order to assist the decision-making process towards sustainable development.

4. To invite the Secretariat (BP/RAC) to strengthen the implementation and development of the "Mediterranean Environment and Development Observatory" function (MEDO) in close cooperation with MEDU and RACs, together with Mediterranean countries and regional/international organizations (e.g. EU-EC/EEA/EUROSTAT, UNEP/GRID, METAP, FAO, OECD, CEDARE, SSO), and to provide it with the necessary assistance and support.
5. To invite the Secretariat (BP/RAC) to assist Contracting Parties in the preparation, implementation and development of national/local observatories as supporting tools for National Environmental Action Plans (NEAPs) and sustainable development strategies and policies, through technical support, exchange of experience and cooperation in order to promote a Mediterranean network.
6. To encourage the Secretariat (BP/RAC) to continue to seek additional support from partner institutions such as EC/EEA/EUROSTAT, METAP, etc, in order to strengthen studies, networking and capacity-building activities, mainly on development/environment interactions, environmental statistics, indicators and institutional analysis.
7. To invite the Secretariat (BP/RAC) to improve information on its activities and the dissemination of its products and to continue the preparation and publication of its regional and sectoral studies, such as "Fascicules", "Country Profiles" and "Technical Notes".

(b) Coastal Planning and Management - Priority Actions Programme (PAP/RAC)

1. To invite the Secretariat (PAP/RAC) to continue furthering and refining the methodology of integrated planning and management in coastal areas (ICAM) with the aim of achieving a rational management of coastal resources and sustainable development in Mediterranean coastal areas.
2. To invite the Secretariat (PAP/RAC) to develop and apply, in cooperation with other components of MAP, as well as national and local authorities, organizations and institutions operating outside the MAP system, relevant policies and methods of sustainable development planning in coastal towns of the Mediterranean basin, particularly those of the developing countries.
3. To invite the Secretariat (PAP/RAC) to develop practical management methods, tools and techniques for sensitive and vulnerable coastal resources, particularly the Geographic Information System (GIS), Carrying Capacity Assessment for tourism (CCA), Decision Support and Expert Systems (DSS), multicriteria analysis, etc., and to ensure their dissemination to the Mediterranean countries.

4. To invite the Secretariat (PAP/RAC) to continue developing tools and techniques for the assessment of the environmental effects of development decisions in coastal areas through the implementation of individual projects (Environmental Impact Assessment - EIA), and to assist Mediterranean countries in the application of these tools and techniques.
5. To invite the Secretariat (PAP/RAC) to continue its activities of building up and strengthening national and local institutional capacities for ICAM, with emphasis on the organization of national and regional training courses, workshops, and seminars addressing topics of special importance.
6. To invite the Secretariat (PAP/RAC) to continue furthering the method of integrated management of water resources in Mediterranean coastal areas, as well as relevant tools and techniques, and to assist the responsible national authorities and institutions in applying them.
7. To invite the Secretariat (PAP/RAC) to develop and disseminate appropriate methodologies within the scope of other priority actions (solid and liquid waste management, environmentally sound aquaculture development, and soil erosion and desertification), and to transfer to Mediterranean countries the most successful experiences in these priority fields.

(c) Cleaner Production in the Mediterranean - Cleaner Production Regional Activity Centre (CP/RAC)

1. To nominate without delay National Focal Points related to cleaner production to enable cooperation with CP/RAC.
2. To invite the Secretariat (CP/RAC) to organize in 1997, as a follow-up to the First National Focal Points on Cleaner Production Meeting in 1996, a Second National Focal Points Meeting to be held in a South Mediterranean Basin country.
3. To invite the Secretariat (CP/RAC) to organize in 1997, as a follow-up to the First Surface Treatment and Coating Sector Expert Meeting in 1996, a Second Expert Meeting coinciding with the Second NFP Meeting, which will discuss and analyse the sector proposed in the First NFP Meeting.
4. To invite the Secretariat (CP/RAC) to publish a CP/RAC presentation folder to introduce it and to spread its goals and functions as the Cleaner Production Regional Activity Centre within the framework of the Mediterranean Action Programme.
5. To invite the Secretariat (CP/RAC) to publish a leaflet about cleaner production success stories within the Mediterranean region to show real examples of pollution prevention and cleaner production achieved by different companies, most especially small and medium-sized ones.

6. To invite the Secretariat (CP/RAC) to cooperate with regional and national Centres for cleaner production in the Mediterranean Area.

(d) Coastal Areas Management Programme (CAMP)

1. To invite the Secretariat to continue work on the six projects approved by the Seventh and Eighth Meetings of the Contracting Parties (Algeria, Tunisia/Sfax, Morocco/Al-Hoceima, Israel, Malta and Lebanon).
2. To invite the national authorities concerned and the relevant bilateral and multilateral programmes to support the above-mentioned CAMP projects as practical demonstration areas for sustainable development and for the protection of the Mediterranean environment.
3. To present to the next Ordinary Meeting of the Contracting Parties an evaluation of the results of the CAMPs and proposals for necessary changes for the future.
4. To approve and start preparation for a Coastal Area Management Programme for Slovenia, in line with the procedure being applied by the Secretariat for CAMP projects and taking into consideration the results of the evaluation of CAMPs.

2. CONSERVATION OF NATURE, LANDSCAPE AND SITES

(a) Specially Protected Areas

1. To take note of the three draft annexes to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (List of endangered or threatened species; List of species whose exploitation is regulated; Common criteria for the choice of protected marine and coastal areas that could be included in the SPAMI List) as recommended by the meeting of the National Focal Points for SPA (Tunis, 25-27 March 1996).
2. To take note of the report of the meeting of experts on endangered species (Montpellier, 22-25 November 1995), and to invite the Secretariat (SPA/RAC) to work on the implementation of the recommendations of the above meeting.
3. To invite the Secretariat (SPA/RAC) to pursue the development of its databases and to disseminate them in a computerized form to the Contracting Parties and concerned NGOs.
4. To invite the Secretariat (SPA/RAC) to evaluate the implementation of the three action plans for the conservation of species adopted within MAP.

5. To invite the Secretariat (SPA/RAC) to prepare common criteria and guidelines for the preparation, at the national level, of inventories of sites, species and other elements of biological diversity, and guidelines for preparing management plans for SPAs.
6. To invite the Secretariat (SPA/RAC) to pursue coordination with the Secretariat of the Convention on Migratory Species concerning the agreement on cetaceans currently under preparation for the Mediterranean and the Black Sea.
7. To invite the Secretariat (SPA/RAC) to pursue its activities for the enhancement of national capabilities, taking into account the relevant recommendations made by the Third Meeting of the National Focal Points for SPA (Tunis, 25-27 March 1996).
8. To invite the Secretariat (SPA/RAC) to pursue cooperation in the context of the Berne Convention and to participate in the "Pan European Strategy on Biological and Landscape Diversity" resulting from the "Environment for Europe process" (Ministerial Conference at Sofia, 1995).
9. To invite the Secretariat (SPA/RAC) to pursue its assistance to the Contracting Parties in managing protected areas, in particular by elaborating common methodologies for the evaluation of the efficiency of management programmes.
10. To support the initiative by MEDWET and the "Conservatoire du littoral" for the protection of Mediterranean Wetlands and coastal ecosystems, achieved in particular through land policy. The Contracting Parties express satisfaction for the interest shown by GEF/UNDP and the European Union for those programmes and invite the managers of those programmes to inform the Secretariat on the progress made in the activities.

3. ASSESSMENT, PREVENTION AND ELIMINATION OF MARINE POLLUTION

(a) MED POL Activities

1. MED POL Phase III

1. To ask the Secretariat to prepare the assessment of the MED POL-Phase II programme (1981-1996) including the summarized results of the monitoring and research activities, an overview of the Data Quality Assurance programme and assistance to countries through training and fellowships.
2. To approve the MED POL - Phase III Programme for the assessment and control of pollution in the Mediterranean region (1996 - 2005), as contained in the Appendix hereafter.

3. To ask the Secretariat to analyse and monitor continuously the development and implementation of the scientific and technical aspects of the MED POL Phase III Programme, as necessary, with the assistance of Mediterranean experts to be identified in consultation with the Contracting Parties.
4. To ask the Secretariat to cooperate with existing major international programmes (e.g. RAMOGE, POEMBC, PRIMO) in the implementation of MED POL Phase-III.

2. Assessment of Pollution-related Problems

To ask the Secretariat to formulate a regional programme of coastal zone trend monitoring to be implemented by the Contracting Parties.

To ask the Secretariat to formulate compliance monitoring programmes to be implemented by the Contracting Parties in their respective countries: the programmes should include all the adopted common measures and other relevant decisions of the Contracting Parties.

To ask the Secretariat to provide assistance to developing Contracting Parties, which so request, in their efforts to redesign and implement their national monitoring programmes.

To ask the Secretariat to continue to work on the development of a biological effects (marine organisms) monitoring programme to be implemented by the Contracting Parties in parallel with the chemical component of the existing monitoring programme within the framework of MED POL, as decided at the Eighth Ordinary Meeting of the Contracting Parties in 1993.

To ask the Secretariat to continue implementing Data Quality Assurance activities, including microbial parameters, in order to ensure the full reliability of results and to assist countries in their interpretation.

To approve the utilization of 50 per cent of the 1997 budget earmarked for research for projects on eutrophication and biological effects.

3. Pollution Control

(i) Implementation of LBS Protocol

To ask the Secretariat to take all necessary action in order that full implementation of the LBS Protocol is achieved.

To urge Contracting Parties to implement the common measures adopted and to inform the Secretariat accordingly.

To urge Contracting Parties to report on their action to incorporate the decisions on common measures into national legal instruments.

To ask the Secretariat to provide assistance (including capacity building) to Contracting Parties requesting it for the implementation and enforcement of the control measures adopted by them.

To request the Secretariat to follow up the implementation by the Contracting Parties of the pollution control measures adopted.

To ask the Secretariat to provide assistance to Contracting Parties requesting it in formulating and implementing national, subregional and regional action plans for the control of land-based pollution.

To urge Contracting Parties which have not completed the questionnaires for the survey of land-based sources of pollution to do so at the latest by September 1996 to enable the Secretariat to prepare a final version of the survey by March 1997.

To ask the Secretariat to organize a meeting of government-designated experts for the preparation of the Regional Action Plan for the control and elimination of pollution by land-based sources and activities.

To ask the Secretariat to organize a regional and, if necessary, sub-regional, programme for the identification of pollution "hot spots" (sources).

To ask the Secretariat to formulate a programme of assistance for the Contracting Parties which request it, for the establishment or enhancement of a national inspection system, and the organization of the appropriate training.

(ii) Implementation of the Dumping Protocol

To urge Contracting Parties to make every effort to send out on a regular basis annual reports to the MED Unit on dumping, including nil reports.

To ask the Secretariat to make use of the results of the Meeting of Government-designated expert on the Preparation of Guidelines for the Management of Dredged Material held in Valencia, Spain, from 20 to 22 May 1996, and, as a result, to prepare new draft Guidelines with the assistance of experts. The new draft Guidelines should be discussed and approved by a second Meeting of experts to be financed by a Contracting Party and, subsequently, presented to the Meeting of Contracting Parties for adoption.

(iii) Assessments and control measures

To take note of the following:

Assessment of the state of pollution of the Mediterranean Sea by zinc, copper and their compounds

Zinc and copper, which appear in Annex II of the LBS Protocol, are found in nature principally in sulphide deposits and in minerals of basaltic rocks. Zinc also occurs as a silicate complex and as a carbonate. Weathering and erosion of the earth's crust release and transport zinc and copper into the marine environment, mainly by surface run-off, rivers and atmospheric deposition. Anthropogenic activities also contribute to the level of inputs into the marine environment. Such activities are: mining, industrial processing of ores and metals and the disposal of metals and their compounds mainly in sewage and sludges. Other activities, such as the combustion of fossil fuels, waste incineration and smelting-release zinc and copper into the atmosphere from where they are subsequently transported to the sea through various routes.

If atmospheric inputs, as well as inputs through the straits of Gibraltar and the Dardanelles (Canakkale Bogazi), are taken into consideration, the estimated loads into the Mediterranean sea are about 90,000 tons per year for zinc and 24,000 tons per year for copper.

The levels of zinc in seawater can be as high as $450 \mu\text{g L}^{-1}$ especially in polluted harbours. However, in clean offshore areas, the values range from 1 to $5 \mu\text{g L}^{-1}$ and can even be as low as $0.02 \mu\text{g L}^{-1}$. The reported copper concentrations for the Mediterranean are lower and vary from $0.2 \mu\text{g L}^{-1}$ to $50 \mu\text{g L}^{-1}$ in the vicinity of point sources.

The concentration levels of these metals found in sediments vary with the extraction method used. For total extraction and subsurface samples the background levels for zinc and copper are estimated to be 20 and $15 \mu\text{g g}^{-1}$ DW respectively. In polluted areas, concentrations of up to a few thousand $\mu\text{g g}^{-1}$ have been reported, with copper values lower than those for zinc.

The concentrations of these metals in marine biota vary according to species. The highest concentrations are found in some molluscs, such as oysters, in which concentrations of Zn may exceed $100 \mu\text{g g}^{-1}$ FW and those of copper $20 \mu\text{g g}^{-1}$ FW. From MED POL data it has been estimated that the average zinc value for the entire Mediterranean in the mussel Mytilus galloprovincialis is $27 \mu\text{g g}^{-1}$ FW and in the fish Mullus barbatus about $4 \mu\text{g g}^{-1}$ FW. The respective values for copper are $1.3 \mu\text{g g}^{-1}$ for M. galloprovincialis and $0.4 \mu\text{g g}^{-1}$ for M. barbatus.

Seafood is a major source of zinc and copper for man. Intake of excessive doses of copper by man leads to severe mucosal irritation and corrosion, widespread capillary damage, hepatic and renal damage and irritation of the central nervous system followed

by depression. However, in general, the concentrations found in edible species do not pose a threat to human health. The reported lowest lethal dose known for zinc for a human is $500 \mu\text{g kg}^{-1} \text{ bw/day}$, and zinc has not been implicated in any human disease derived from the eating of seafood. Copper poisoning of dietary origin is also rare in man and higher mammals owing to the powerful emetic action of copper. However, both metals have been found to have adverse effects on marine life at concentrations much lower than those occurring in polluted areas. Copper concentrations in seawater as low as $10 \mu\text{g L}^{-1}$ had a significant inhibitory effect on the shell growth of *M. edulis* and $5 \mu\text{g L}^{-1}$ on the reproduction of the isopod *Idothea baltica*. Zinc values of between 10 and $40 \mu\text{g L}^{-1}$ have been shown to have harmful effects on the life of marine organisms.

In order to protect marine organisms, communities and ecosystems, the concentrations of both metals in seawater have to be reduced to levels which are not harmful. For this purpose it is necessary to limit the inputs of copper and zinc in the marine environment, both in the quantity discharged per unit time and the concentration of the metals in liquid effluents and sludges, as well as emissions to the atmosphere.

It is recommended that environmental quality objectives be set for the coastal waters of the Mediterranean. As a step towards the achievement of these water quality objectives, it is also recommended that limit values be set for all effluent discharges into the Mediterranean Sea.

For the protection of human health, it is recommended that the situation should be monitored and that legal limits should be imposed only when and where necessary.

To adopt the following:

Measures for the control of pollution by zinc, copper and their compounds

The Contracting Parties, bearing in mind article 4 of the Barcelona Convention and article 6 and Annex II of the Land-Based Sources Protocol, as well as the principle of the precautionary approach adopted by them at their 6th Ordinary Meeting (Athens, 3-6 October 1989), and taking into consideration the conclusions of the UNEP/FAO/WHO document (UNEP(OCA)/MED WG.111/Inf.3) on the assessment of the state of pollution of the Mediterranean sea by zinc, copper and their compounds,

agree to take the following action as from 1 January 1998:

- (a) For the protection of marine organisms, communities and ecosystems
 - to set water quality objectives for total dissolved copper and zinc in their coastal waters: These objectives should be $10 \mu\text{g L}^{-1}$ for zinc and $5 \mu\text{g L}^{-1}$ for copper.

As a step towards the achievement of the above quality objectives, they agree:

- to set limit values for both copper and zinc in all effluent discharges into the Mediterranean Sea before dilution. These values should be 0.5 mg for copper and 1.0 mg for zinc per litre discharged (monthly flow-weighted average concentration of total copper and zinc);
- (b) For the protection of human health
- to monitor the trends of zinc and copper content in marketed species of seafood;
 - to identify areas where high levels of copper and zinc in edible species of seafood are reported and might pose a health problem, taking into account their intake from other sources;
 - to impose legal limits on the copper and zinc content of seafood in such areas (or any other restrictions considered appropriate under prevailing conditions), should the local situation so demand, including prohibition of aquaculture and fishing activities in such areas;
 - to formulate and implement recommended measures to regulate the type and amount of seafood consumed by high-risk groups, if it is considered that such groups are not sufficiently protected by local measures of a general nature;
- (c) To report to the Secretariat on measures taken in accordance with this decision.
- To take note of the following:

Assessment of the state of pollution of the Mediterranean Sea by anionic detergents

Detergents containing anionic surfactants represent 60% of the commercially used surfactants; cationic surfactants used as fabric softeners and disinfectants (quaternary ammonium cationics) represent 10%; and the remainder is represented by non-ionic surfactants. The most widely used anionic detergents are LAS (linear-secondary alkylbenzenesulfonate), which is rapidly degraded by environmental microorganisms, derived from linear alkylbenzenes (LAB) by sulfonation of alkylbenzene with H₂SO₄ or SO₃. Degradation of anionic detergents in sewage treatment plants before reaching natural waters is not always complete, and alkyl phenols which are highly toxic to fish and small water invertebrates, may be formed during aerobic and especially during

anaerobic treatment in anoxic conditions. It has been demonstrated that primary biodegradation of LAS in estuarine waters depends strongly upon several factors, such as the origin of the bacterial culture, the temperature conditions and the structure of alkylbenzenes.

The most important sources of anionic detergents in the Mediterranean Sea are land-based sources, and detergents are introduced into the marine environment directly from outfalls discharging into the sea or through coastal dispersion, and indirectly through rivers, canals or other watercourses, including underground watercourses, or through run-off. Information on the amount of anionic detergents reaching the Mediterranean Sea is sparse. A pilot monitoring survey carried out in 1992 provided some more information on levels of anionic detergents. Levels in seawater ranged from 0.01 to 4.2 $\mu\text{g L}^{-1}$, in effluents from 0.11 to 34.07 $\mu\text{g L}^{-1}$ and in rivers from 0.06 to 26.86 $\mu\text{g L}^{-1}$. This study, however, had to be restricted to a few coastal areas and the results cannot be interpreted as providing any indication of the situation prevailing in the Mediterranean as a whole. Overall assessment of the situation with regard to the Mediterranean was made on the basis of current knowledge at the global level, taking into consideration the existing differences in sampling and analytical techniques. For the purpose of the study, the levels of concentration were determined by methylene blue active substances (MBAS) and LAS.

Considering that the ingestion of small quantities, even repeatedly, of seawater polluted by anionic surfactants, may be regarded as free of risk, the poor percutaneous absorption and the low toxicity of anionic detergents suggest that there appears to be no risk to human health through contact with detergent-polluted seawater, provided that concentrations in any particular locality do not reach levels sufficient to produce visible foam on the surface. Nevertheless, it must be borne in mind that another effect of detergents on the skin barrier is that it allows the absorption of other compounds which are temporarily present.

Concentrations of anionic detergents measured in the Mediterranean Sea may represent a risk for marine biota on all occasions when they reach levels of effect. The danger to fish comes from exposure of the gill tissues to the detergent, rather than from ingestion. Very important toxic effects are experienced by fish swimming in water containing LAS (or other detergents) at low (few $\mu\text{g L}^{-1}$) concentrations. It must also be taken into account that no data are available to support the hypothesis of a widespread risk for marine biota in the Mediterranean Sea from anionic detergents, but that some data may lead to the belief that there are some risk situations where high amounts of non-degraded anionic detergents are present in seawater, especially in areas where there is a discharge of untreated sewage wastes.

In a number of Mediterranean countries, detergents are limited by legal restrictions respecting their discharge into the marine environment. Such restrictions generally relate to the use of a high percentage of anionic detergents and to permissible concentrations of detergents in the discharges, as well as in the sea.

- To adopt the following:

Measures for the control of pollution by detergents

The Contracting Parties, bearing in mind article 4 paragraph 1 of the Barcelona Convention and article 6 and Annex II of the Land-Based Sources Protocol, as well as the principle of the precautionary approach adopted by them at their 6th Ordinary Meeting (Athens, 3-6 October 1989), and also taking into account the high incidence of the use of anionic detergents as compared to non-anionic ones, and of the fact that anionic detergents are rapidly degraded in the environment, consider that a holistic approach has been adopted for detergents in general. The Contracting Parties also, taking into consideration the conclusions of the UNEP/WHO document (UNEP(OCA)/MED WG.111/Inf.4) on the assessment of the state of pollution of the Mediterranean Sea by anionic detergents,

agree to take the following action as from 1 January 1998:

- (a) to promote measures to reduce inputs into the marine environment of non-biodegradable detergents by restricting the use of detergents to those which are reasonably (90%) biodegradable;
- (b) to reduce the input of detergents in identified hot-spot areas: such actions would have to be individually tailored to suit the conditions prevailing in each particular locality so identified;
- (c) to monitor the level of detergents in coastal recreational areas: as a routine measure this could be done visually, with analysis only resorted to when any particular circumstance so demands;
- (d) to make, whenever possible, the monitoring of detergents in effluents a component of pollution source monitoring within the framework of MED POL;
- (e) to report to the Secretariat on all measures taken in accordance with this decision.
- (iv) Other recommendations

Recommendations for prevention and control of microbiological pollution

The Contracting Parties, bearing in mind the targets relating to the establishment of sewage treatment plants and submarine outfall structures contained in the Genoa Declaration and the interim environmental quality criteria for bathing waters, adopted for a transitory period during their Fourth Ordinary Meeting in Genoa from 9 to 13 September 1985, as well as the criteria for shellfish waters, adopted during their Fifth

Ordinary Meeting in Athens from 7 to 11 September 1987, and taking into consideration the UNEP/WHO document (UNEP(OCA)MED WG.111/Inf.8) on the new assessment on the state of microbiological pollution of the Mediterranean Sea, completed in December 1995,

- Take note of the following:

Assessment of the state of microbiological pollution of the Mediterranean Sea

A considerable number of species and strains of pathogenic microorganisms, including mainly bacteria and viruses, but also fungi and protozoa, are known to be present in varying degrees of population density in Mediterranean coastal waters. Some of these are endemic in a number of Mediterranean areas. A number of algal species that produce biotoxins which affect man; mainly through the consumption of contaminated shellfish, have also been identified in various parts of the Mediterranean and are posing a risk in areas where local conditions lead to eutrophication and the development of algal blooms.

Diseases and disorders associated with infection by such pathogenic organisms have been recorded both among local Mediterranean populations and among tourists visiting the region. Except under specific circumstances, however, it is difficult to link infection with bathing in polluted coastal marine areas, with consumption of contaminated shellfish, as practically all such diseases and disorders can result from causes other than marine pollution. In the case of a number of non-gastrointestinal diseases contracted through bathing, it is being recognized that the cause may be high bather density rather than polluted seawater.

In conformity with global practice, the rationale for developing and enforcing seawater and shellfish quality criteria and standards in all Mediterranean countries involves the establishment of upper concentration limits of one or more bacterial indicator organisms as an index of acceptability or otherwise. Criteria and standards for bathing waters vary in the different countries, most of them being based either on the interim criteria for bathing waters adopted by the Contracting Parties to the Barcelona Convention and Protocols in 1985, or on the 1975 EC Directive on the quality of bathing waters. There is a similar variation between the various national criteria and standards for shellfish waters.

Records of bathing water monitoring for the period 1983 to 1992 from thirteen Mediterranean countries submitting their data to MED POL and assessed on the basis of conformity with the 1985 interim criteria for bathing waters appear to show reasonable microbiological quality, but cannot be properly evaluated owing to non-compliance with the stipulated monitoring frequency. These records, however, are known to present an incomplete picture of actual monitoring programmes in at least some Mediterranean states. On the other hand, the quality of bathing waters in the four Mediterranean EC Member States, assessed on the basis of compliance with the guide values of the 1975 EC bathing water Directive, show a positive trend over the last few years, probably as

a result of improved wastewater management practices. The two sets of criteria and standards are not directly comparable. In the case of shellfish waters, no monitoring data has been available since the completion of the first phase of MED POL in 1981.

Recent international epidemiological data have cast doubts on the validity of current indicator bacteria as an accurate index of pathogen presence and density, in view of the longer survival of pathogens than of the indicator bacteria in seawater and shellfish and their greater resistance (particularly in the case of viruses) to conventional sewage treatment. The results of the studies in question have also accentuated the need for reliance on multiple, as opposed to single, indicator bacteria, supplemented by monitoring for the more serious pathogens at appropriate times. There is now sufficient data on the basis of which criteria and standards of a more permanent nature than the interim ones adopted in 1985 can be developed, in order to ensure adequate health protection for both local populations and tourists using coastal marine recreational amenities. In view of the lack of data, the matter of shellfish requires further study.

While the general situation can be said to have improved to a variable extent over the Mediterranean region, an acceleration of effort in achieving those targets listed in the 1985 Genoa Declaration related to the establishment of sewage treatment plants and submarine outfall structures is necessary in order to further reduce marine pollution and its resultant threats to human health.

Action for prevention and control of microbiological pollution

Agree on the following action:

- (a) To observe the terms of the measure on interim criteria for bathing waters adopted during their Fourth Ordinary Meeting in 1985 as well as to draw up new criteria taking into account the results of work conducted in an international context and to establish new standards relevant to the Mediterranean;
- (b) to observe the terms of the measure on the criteria for shellfish waters, adopted during their Fifth Ordinary Meeting in 1987, and to ensure that this is supplemented by adequate health or marketing legislation on shellfish quality to protect the consumer from contaminated produce;
- (c) to promote, both within the framework of MED POL and otherwise, the following studies:
 - microbiological surveys to satisfy the requirement for a more comprehensive catalogue of the presence and (where feasible) density of pathogenic microorganisms in sewage effluents and in those marine areas (recreational and shellfish-growing) known to be affected by such effluents.

This would provide essential data for the design of new sewage treatment facilities and outfall structures in such localities, and for any possible modifications required in the case of existing ones;

- epidemiological studies (i) on the correlation between recreational water quality and observed health effects on exposed population groups, covering the main water sport activity areas (including bathing), (ii) correlating the incidence of specified diseases and disorders with beach overcrowding, and (iii) aimed at identifying the extent to which contaminated seafood (as opposed to other sources) is responsible for the incidence of gastrointestinal diseases and disorders in both local populations and tourists;
 - microbiological studies correlating the density of bacterial indicator organisms with the presence and density of pathogens such as *Salmonella*, and studies to try to interpret the real pathogenic significance of pathogens such as *Salmonella* and enteroviruses in seawater samples;
 - Studies: (i) on the development of less expensive techniques for the identification of viruses, (ii) on the development of reliable techniques for the determination of bacteriophages and on the criteria for selection of the most appropriate bacteriophages to be determined for evaluation of the presence of enteroviruses, with the aim of being able, at some future date, to propose limit values for bacteriophages, and (iii) on the survival and adaptation of pathogenic and indicator microorganisms released into the Mediterranean marine environment, including the mechanisms responsible for change;
- (d) to include, to the extent possible, all coastal waters used for bathing purposes in their national and local coastal recreational water quality monitoring programmes, and to include all ongoing programmes in this field in their national agreements with the Secretariat within the framework of MED POL;
- (e) to accelerate the establishment of sewage treatment plants and submarine outfall structures in the appropriate cities and towns, in order to further prevent pollution by sewage at source, and achieve the relative targets contained in the 1985 Genoa Declaration by the earliest possible date:
- (f) to provide the Secretariat to the Convention and Protocols with the fullest information possible on all updates of legislation and administrative measures respecting national criteria and standards for coastal recreational and shellfish waters.
- (c) Remote Sensing Activities (ERS/RAC)
1. To invite the Secretariat (ERS/RAC) to enhance its activities relating to the development and demonstration of the physical observation and study of the environmental state and

modification of marine and coastal areas in the Mediterranean basin, thus contributing to the decision-making process concerning the sustainable management of resources.

2. To invite the Secretariat (ERS/RAC) to strengthen cooperation with the Focal Points, the MAP Coordinating Unit, RACs and other MAP components for the implementation of the approved programmes by developing activities supported by the use of remote sensing techniques in conjunction with other sources of data.
3. To invite the Secretariat (ERS/RAC) to further develop its activities relevant to the observation and assessment of the state and modification of forest and plant coverage in the whole Mediterranean region, as well as their relation with environmental changes, in liaison with other programmes such as the FAO Forest Action Plan.
4. To invite the Secretariat (ERS/RAC) to strengthen the use of remote sensing techniques in the implementation of the ongoing and future Coastal Areas Management Programmes (CAMPs), also promoting their integration in multi-disciplinary approaches.
5. To invite the Secretariat (ERS/RAC) to develop and propose the use of remote sensing techniques for the observation and study of eutrophication phenomena and of pollution from both marine and land-based sources, as well as for the assessment of pollutant dispersion in marine coastal areas; and to invite ERS/RAC to coordinate its activities with relevant IOC programmes as appropriate.
6. To invite the Secretariat (ERS/RAC) to promote the dissemination and exchange of information and activities relating to remote sensing data and applications among the Mediterranean countries and relevant operational Centres, with a view to developing and strengthening a remote sensing Mediterranean network.
7. To invite the Secretariat (ERS/RAC) to develop and propose appropriate methods for a sound understanding of the Mediterranean environment, by transferring knowledge of remote sensing applications through on-the-job training and capacity-building activities.
8. To invite the Secretariat (ERS/RAC) to take into account possible requests from Mediterranean countries relevant to the monitoring of environmental changes in a number of characteristic zones:
 - large urban centres and their suburbs;
 - coastal zones subject to pressure;
 - ecologically fragile sites;
 - zones exposed to desertification phenomena.

4. INFORMATION AND PARTICIPATION

1. To prepare relevant publications, brochures and reports presenting MAP activities and to disseminate them to decision-makers, scientists and administrators as well as the public at large.
2. To carry out activities related to the promotion of environmental awareness, exchange and dissemination of information, educational assistance and information on MAP activities through the strengthening of the library and library services of MEDU.
3. To enhance cooperation with environmental Mediterranean NGOs and encourage their active participation in MAP-related activities.
4. To recommend the inclusion of the following NGOs in the list of MAP Partners, as approved by the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995), "MAP Cooperation with Non-Governmental Organizations":
 - Israel Society for the Protection of Nature, Israel;
 - Ricerca e Cooperazione (RC), Italy;
 - Sustainability Challenge Foundation, Italy;
 - European Fertilizer Manufacturers Association (EFMA), Belgium;
 - International Marine Mammal Association (IMMA), Canada.

III. STRENGTHENING OF THE LEGAL FRAMEWORK (Chapter II of MAP II)

1. To ask the Executive Director of UNEP to convene a Conference of Plenipotentiaries for the adoption of the three annexes to the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, to be preceded by a one-day meeting of government-designated experts.
2. To invite the Contracting Parties to notify to the Depositary, in writing, their acceptance of the amendments to the Convention for the Protection of the Mediterranean Sea against Pollution, the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft (Dumping Protocol), and the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources (LBS Protocol).
3. To invite the Contracting Parties that have not done so, to sign/ratify the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean

(SPA Protocol) and the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (Offshore Protocol).

4. To invite the Contracting Parties to review their countries' position with respect to other pertinent international conventions, protocols and agreements and to ensure the early signature of those instruments which may have a positive influence on the Mediterranean Basin.

II. PROGRAMME BUDGET FOR 1997:

The Contracting Parties approve the following programme budget:

SUMMARY OF BUDGETARY ALLOCATIONS

	Approved Budget 1997 (,000 US\$)
I. INSTITUTIONAL AND FINANCIAL ARRANGEMENTS	
PROGRAMME COORDINATION	483
PERSONNEL AND OPERATING COSTS	
1. COORDINATING UNIT, Athens, Greece	
- Secretariat Personnel and Unit's Operating Costs	804
- MEDPOL Personnel	431
- Operating costs covered by the Greek Counterpart Contribution	400
2. MED POL COOPERATING AGENCIES	385
3. REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC)	552
4. BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)	447
5. PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)	328
6. SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)	274
7. ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)	*
8. SECRETARIAT FOR THE CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)	*
9. SECRETARIAT FOR THE 100 HISTORIC SITES	*
SUB-TOTAL	3,621
PROGRAMME SUPPORT COST**	727
TOTAL INSTITUTIONAL AND FINANCIAL ARRANGEMENTS	4,831

* Covered by the host country.

** Programme Support Cost of 13% applies to MTF expenditures.

		Approved Budget 1997 (,000 US\$)
II. SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN		
SUPPORT TO THE MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT		110
1. INTEGRATING ENVIRONMENT AND DEVELOPMENT		
1.1	Economic activities and the environment	85
1.2	Urban management and the environment	50
1.3	Sustainable management of natural resources	110
1.4	Integrated coastal area management	
	(a) Integrated Planning	31
	(b) Coastal Areas Management Programme (CAMP)	218*
1.5	Elements for a Mediterranean strategy (including MEDO)	
	(a) Observation and Systemic and Prospective Analysis of Environment and Development in the Mediterranean	65
	(b) Mediterranean Environment and Development Observatory (MEDO)	**
1.6	National and local capacity-building	20
SUB-TOTAL		689
2. CONSERVATION OF NATURE, LANDSCAPE AND SITES		
2.1	Collection of data and periodic assessment of the situation	15*
2.2	Legal measures (SPA Protocol)	20
2.3	Planning and management	20*
2.4	Exchange of experience and strengthening of national capabilities	**
SUB-TOTAL		55

* Additional funding is provided under the voluntary contribution of the European Community.

** Funded under the voluntary contribution of the European Community.

		Approved Budget 1997 (,000 US\$)
3.	ASSESSMENT, PREVENTION AND ELIMINATION OF MARINE POLLUTION	
3.1	Assessment of pollution-related problems	440
3.2	Pollution prevention	
(a)	Prevention and elimination of the pollution of the marine environment from land-based activities (LBS Protocol)	298
(b)	Prevention of and response to the pollution of the marine environment from sea-based activities	
(i)	Preparedness for, response to and cooperation in cases of accidental marine pollution (Emergency Protocol)	180
(ii)	Prevention of the pollution of the marine environment by dumping from ships and aircraft (Dumping Protocol)	10
(c)	Prevention and control of the pollution of the environment resulting from transboundary movements of hazardous wastes and their disposal (Hazardous Wastes Protocol)	30
3.3	Supporting measures	65
	SUB-TOTAL	1,023
4.	INFORMATION AND PARTICIPATION	145
TOTAL SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN		1,912
III. STRENGTHENING OF THE LEGAL FRAMEWORK		
TOTAL STRENGTHENING OF THE LEGAL FRAMEWORK		30
GRAND TOTAL		6,773

**AGGREGATE BUDGET COVERING ACTIVITIES AND PERSONNEL AND OPERATING COSTS
FOR THE COORDINATING UNIT AND THE CENTRES:**

	Approved Budget 1997 (,000 US\$)
1. COORDINATING UNIT	
- Total Activities Coordinating Unit	831*
Personnel and Operating Costs:	
- Secretariat Personnel and Unit's Operating Costs	804
- Operating costs covered by the Greek Counterpart Contribution	400
- Total Personnel and Operating Costs	1,204
TOTAL	2,035
2. MED POL	
- Total Activities MED POL	963
Personnel and Operating Costs:	
- MED POL Personnel in the Coordinating Unit	431
- MED POL Cooperating Agencies Personnel and Operating Costs	385
- Total Personnel and Operating Costs	816
TOTAL	1,779
3. REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC)	
- Total Activities	180
- Total Personnel and Operating Costs	552
TOTAL	732
4. BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)	
- Total Activities	135**
- Total Personnel and Operating Costs	447
TOTAL	582
5. PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)	
- Total Activities	226**
- Total Personnel and Operating Costs	328
TOTAL	554

* Includes 98,000 US\$ for CAMPs part of which will be allocated to the relevant RACs and the Centre of Historic Towns and when required.

** Additional funding is provided under the voluntary contribution of the European Community.

	Approved Budget 1997 (,000 US\$)
6. SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)	
- Total Activities	40*
- Total Personnel and Operating Costs	274
TOTAL	314
7. ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)	
- Total Activities	50
- Total Personnel and Operating Costs	**
TOTAL	50
8. CENTRE FOR THE CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)	
- Total Activities	***
- Total Personnel and Operating Costs	**
TOTAL	-
9. CENTRE FOR THE 100 HISTORIC SITES	
- Total Activities	**
- Total Personnel and Operating Costs	**
TOTAL	-
PROGRAMME SUPPORT COSTS (13% OF MTF) ****	727
GRAND TOTAL	6,773

* Additional funding is provided under the voluntary contribution of the European Community.

** Covered by the host country.

*** 1997 activities for the CP/RAC are fully funded by the Spanish Government at an approximate cost of Pesetas 15.1 (around 118,557 US\$ at a rate of 126.5 PTA/US \$).

**** Programme Support Cost of 13% applies to MTF expenditures.

SOURCES OF FINANCING

The following scheme of sources of financing for the programme budget for 1997 through the ordinary contributions to the Mediterranean Trust Fund, the extraordinary contributions, the Greek counterpart contribution and the UNEP counterpart contribution is approved by the Contracting Parties:*

	1997 (in US\$)
A. Income	
MTF Contributions for 1997	4,560,546
Extraordinary Contributions	154,222
Greek Counterpart Contribution	400,000
UNEP Counterpart Contribution	50,000
Bank Interest (estimate)	100,000
Unpaid pledges as at 31 Dec. 1996 (estimate)	897,851
Estimated uncommitted funds as at 31 Dec. 1996 (including advance payments towards future pledges)**	2,011,209
Total Expected Income	8,173,828
B. Commitments	
Approved Commitments for 1997	6,773,000
Total Commitments	6,773,000
C. Provisions for revolving fund	1,400,828

* The activities funded by the voluntary contribution of the European Community are indicated separately on p 9.

** Includes US\$ 222,509 representing advance payments towards future pledges received from Greece during 1996.

Approved Contributions for 1997:

Contracting Parties	%	Ordinary Contributions to MTF for 1997 (in US \$)	Extraordinary Contributions for 1997 (in US \$)
Albania	0.07	3,192	108
Algeria	1.05	47,886	1,619
Bosnia and Herzegovina	0.30	13,682	463
Cyprus	0.14	6,385	216
Croatia	0.97	44,237	1,496
EC	2.50	114,014	- a/
Egypt	0.49	22,347	756
France	37.97	1,731,639	58,558 b/
Greece	2.81	128,151	4,334
Israel	1.47	67,040	2,267
Italy	31.37	1,430,643	48,379 c/
Lebanon	0.07	3,192	108
Libya	1.97	89,843	3,038
Malta	0.07	3,192	108
Monaco	0.07	3,192	108
Morocco	0.28	12,770	432
Slovenia	0.67	30,556	1,033
Spain	14.99	683,626	23,118 d/
Syria	0.28	12,770	432
Tunisia	0.21	9,577	324
Turkey	2.25	102,612	3,470
Total:	100.00	4,560,546	154,222
Host Country Contribution:		400,000	-
UNEP Environment Fund:		50,000	-
GRAND TOTAL		5,010,546	154,222

a/ The extraordinary contribution of the EC to cover MAP activities is included in its Voluntary Contribution (see page 8-9).

b/ Contribution for the funding of the Third Meeting of the Mediterranean Commission on Sustainable Development (see page 11).

c/ Contribution for the funding of the Meeting of experts for the development of elements of national action plans for the reduction and elimination of pollution from land-based sources and activities (see page 38).

d/ Contribution for the funding of the Second Meeting of the Mediterranean Commission on Sustainable Development (see page 11).

**Activities to be funded by the Voluntary
Contribution of the European Community:***

	Approved Budget 1997 (in US\$)
1.4 Integrated coastal area management	
(b) Coastal Areas Management Programme (CAMP)	
- Implementation of CAMP activities: assistance to local systematic and prospective analysis (BP)	53,749
- Implementation of CAMPs in Sfax/Tunisia, Algeria, Al-Hoceima/Morocco, Israel, Malta and Lebanon (PAP, MEDU)	193,316
SUB-TOTAL 1.4	247,065
1.5 Elements for a Mediterranean strategy	
(b) Mediterranean Environment and Development Observatory (MEDO)	
- Assistance to countries for preparation of a national environment and development Observatory (BP)	25,000
- Data collection and processing and organisation of the Mediterranean Environment and Development Information System (BP)	10,000
- Identification and elaboration of indicators: water, soil, wastes, urban, agriculture, etc.. (BP)	20,000
- Preparation for a report on the State of Development and Environment in the Mediterranean (BP)	10,000
SUB-TOTAL 1.5	65,000
2.1 Collection of data and periodic assessment of the situation	
- Collection of data and assistance to countries for the preparation of inventories of species and sites of special interest (SPA)	60,000
SUB-TOTAL 2.1	60,000

* The total of the ordinary contribution and the voluntary contribution of the European Community to the Mediterranean Trust Fund amounts to US\$ 670,047.

Approved
Budget 1997
(in US\$)

1.4 Integrated coastal area management

(b) Coastal Areas Management Programme (CAMP)

2.3 Planning and management

- | | |
|---|--------|
| - Implementation of the Action Plan for the conservation of the Mediterranean Marine Turtles (SPA) | 15,000 |
| - Implementation of the Action Plan for the management of the Monk Seals (SPA) | 15,000 |
| - Implementation of the Action Plan for the conservation of Cetaceans in the Mediterranean Sea (SPA) | 15,000 |
| - Assistance to countries for the improvement of the management of SPA (particularly as regards the development and control of public access to SPAs) (SPA) | 25,000 |

SUB-TOTAL 2.3 70,000

2.4 Exchange of experience and strengthening of national capabilities

- | | |
|--|--------|
| - Training sessions on the scientific and technical aspects of the conservation of the natural common heritage (SPA) | 50,000 |
|--|--------|

SUB-TOTAL 2.4 50,000

TOTAL 492,065

Programme Support Costs (13%) 63,968

GRAND TOTAL 556,033

TOTAL VOLUNTARY CONTRIBUTION OF THE EUROPEAN COMMUNITY: 556,033

**Expected Counterpart Contributions in Cash/Kind to MAP
Projects from Contracting Parties and U.N. Agencies:**

Countries	1997 (,000 US \$)
Croatia PAP/RAC	150
Italy ERS/RAC	300
Malta REMPEC	75
Spain CP/RAC	118.5
Tunisia SPA/RAC	70
U.N. Agencies	
WHO MED POL	100
WMO MED POL	50
IAEA MED POL	300
UNESCO/IOC MED POL	95

	1997 (,000 ECU)
France	
BP/RAC	350*
Centre of 100 Historic Sites (Ville de Marseille)	83

* The French Government will provide a contribution to ensure the proper functioning of the Centre. During 1997, contribution will be equivalent to US \$ 440,000 (or 350,000 ECU as per April 1996 rate), corresponding to:

- The salaries of the Director, of an Expert and the cost of larger premises for a total amount equivalent to US 220,000.
- An amount of US \$ 220,000 to cover the salary of a Secretary as well as part of the operating cost of the Ce

PROGRAMME COORDINATION

Objectives

To prepare the work programme and budget for the Mediterranean Action Plan for review by the meetings of the Bureau, the subsidiary bodies and for review and approval by the ordinary meetings of the Contracting Parties. To coordinate MAP activities with participating UN Agencies, intergovernmental and non-governmental organizations, and MAP Regional Activity Centres and to manage the Mediterranean Trust Fund.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- 10th Ordinary Meeting of the Contracting Parties to review and approve the 1998-99 programme budget (MEDU)	215
- Meeting of the MAP National Focal Points to consider the progress of the Action Plan and prepare the 1998-99 programme budget (MEDU)	115
- Second Meeting of the Mediterranean Commission on Sustainable Development (MEDU)	23*
- Third Meeting of the Mediterranean Commission on Sustainable Development (MEDU)	58**
- Meetings of the Bureau (two per year) to review the progress of the Action Plan, advise the Secretariat on matters arisen since the meeting of Contracting Parties, and decide on programme/budget adjustments (MEDU)	42
- Meeting of the Regional Activity Centres' Directors and the Coordinating Unit for programming and coordination of MAP activities (MEDU)	10***
- Training of national officials at MED Unit on MAP programmes and procedures (direct support to 2 countries, 4 participants) (MEDU)	5
- Consultation on the preparation of reporting formats for national reports (MEDU)	15
TOTAL ACTIVITIES	483

* Funded through the Extraordinary Contribution of the Government of Spain. The Spanish authorities will also cover all additional expenses for this meeting.

** Funded through the Extraordinary Contribution of the Government of France. The French authorities will also cover all additional expenses for this meeting.

*** Amount to cover cost of translation and interpretation. Travel cost included under the relevant Regional Activity Centres.

MAP PERSONNEL AND OPERATING COSTS:

1. COORDINATING UNIT, Athens, Greece

The revised structure of the personnel at the Coordinating Unit are reflected in the budget.

The increase of post adjustment for Athens for the Professional Staff that occurred in December 1995 (from 28.6% to 34.9%) has required an increase of salaries in 1997 compared to 1996. The post adjustment is calculated independently of UNEP by the International Civil Service Commission and reflects the increase of the cost of living in the Duty Station. However, the figures indicated for 1997 are estimates and a further increase of the post adjustment is not excluded. The level of increase of allocation for the post of Deputy Coordinator is less than the other post as it is expected that the recruitment of a new incumbent will be made at a lower step level.

For Administrative Support there has been a readjustment of the salaries (+ 5.84%) that takes into account the recent increase of salaries through the interim salary survey undertaken by the Compensation and Classification Service of UN Headquarters in New York. The figures indicated are indeed estimates and another salary survey is forecast during the second half of 1996 that might result in an even higher increase of salaries, as the survey takes into account such parameters as the level of income tax. The allocation for overtime and temporary assistance however remain at the same level in 1997 as for 1996.

The funds for Travel on Official Business include the travel allocation previously attributed to FAO, due to the closing of the FAO post.

An increase in the Rental cost of MEDU premises of 8.1% has already occurred at the beginning of the year. The figures indicated for 1997 show an estimated increase of 11.9% over 1996 that takes into account the trends observed at the Duty Station. However, it is necessary to underline the favourable conditions provided by the Host Country as the cost of the rent is presently much below the value prevailing in the market in Athens.

The Office Cost includes such costs as the cost of reproduction, telephone and postage. A substantial increase in these costs has occurred in 1996; for postage, for instance, the range of the increase is from 11% for airmail postage to 68% for printed matter in 1996 and for reproduction costs the increase in 1996 is already 8%.

Also included under the budget for office costs are the allocation for non-expendable equipment and the maintenance of the premises. As announced by the Coordinator during the last Joint Committee Meeting held in Athens in 1995, there is an urgent need to replace or upgrade office facilities. In order to catch up with the telecommunications facilities in Greece it will be necessary to replace the obsolete switchboard. An investment of at least US \$20,000 is necessary to this effect. An additional US \$10,000 will also be necessary to replace some equipment and furniture that have not been changed for fifteen years.

COORDINATING UNIT, Athens, Greece

	m/m	Approved Budget 1997 (,000 US \$)	
		MTF	Greek Counterpart Contribution
Professional Staff			
- Coordinator - D.1/D.2	12	122	
- Deputy Coordinator - D.1	12	116	
- Senior Programme Officer/ Economist - P.5	12	115	
- Fund Management/Admin. Officer - P.3	12	1	
- MEDPOL Coordinator - P.5	6	55	
- MEDPOL Senior Programme Officer - P.5	12	115	
- MEDPOL First Officer/ Marine Scientist - P.4	12	89	
- Computer Operations Officer - P.4	12	88	
Total Professional Staff		700	
Administrative Support			
- Information Assistant - G.6/G.7	12	34	
- Administrative Assistant - G.6/G.7	12	1	
- Senior Secretary - G.5	12	29	
- Administrative Clerk - G.4	12	1	
- Data Processing Assistant - G.5	12	1	
- Research Assistant - G.4/G.5	12	29	
- Senior Secretary - G.4	12	1	
- Senior Secretary - G.4	12	28	
- Senior Secretary - G.3/G.4	12	28	
- Senior Secretary (MEDPOL) - G.4	12	28	
- Senior Secretary (MEDPOL) - G.4	12	28	
- Senior Secretary (MEDPOL) - G.3/G.4	12	28	
- Telecommunication Clerk - G.3	12	26	
- Clerk/Driver - G.3	12	25	
- Office Clerk/Typist - G.3	12	24	

(1) Paid under Programme Support Costs.

	m/m	Approved Budget 1997 (,000 US \$)	
		MTF	Greek Counterpart Contribution
- Clerk - G.1/G.2	12	19	
- Temporary Assistance		30	
- Overtime		19	
Total Administrative support		375	
Travel on Official Business		106	
Office Costs			
- Rental		-	122 ⁽¹⁾
- Other Office Costs (including sundry)		54	278
Total Office costs		54	400
TOTAL PERSONNEL AND OPERATING COSTS		1,235	400

⁽¹⁾ In the case of a change in the location of premises, the adjustment of the budget, due to the change in cost, to be approved by the Bureau.

2. MED POL COOPERATING AGENCIES

The budget reflects the revised structure referred to in the recommendations with the suppression of the FAO posts (Senior Fishery Officer and FAO Secretary), and the suppression of the IAEA Maintenance Engineer during the second half of 1997.

	m/m	Approved Budget 1997 (,000 US \$)
Professional Staff		
- WHO Programme Officer/Senior Scientist, MAP Coordinating Unit (Athens) - P.5	12	110
- IAEA Maintenance Engineer (MEL) (Monaco) - P.3	6	95 ⁽¹⁾
Total Professional Staff		205
Administrative Support		
- WHO Secretary - MAP Coordinating Unit (Athens) - G.5	12	29
- IAEA Laboratory Assistant - MEL (Monaco) - G.6	12	55
- WHO Temporary Assistance - (Athens)	6	15
- WMO Temporary Assistance - WMO/HQ (Geneva)		13
- IOC Temporary Assistance - IOC/HQ (Paris)		13
Total Administrative Support		125
Travel on Official Business		
- WHO (Athens)		16
- WMO (Geneva)		10
- IAEA (Monaco)		20 ⁽²⁾
- IOC of UNESCO (Paris)		9
Total Travel		55
Office costs		⁽³⁾
TOTAL PERSONNEL AND OPERATING COSTS		385

⁽¹⁾ The post of IAEA Maintenance Engineer will be terminated in 1997. Estimated cost includes cost of separation (repatriation grant, travel, annual leave, etc.).

⁽²⁾ To be used for field missions for the Data Quality Assurance Programme.

⁽³⁾ Office costs incurred by WHO staff stationed in the Coordinating Unit in Athens are covered by MED Unit office. Office costs incurred by all Agencies at their own Headquarters or Regional Offices are covered by the respective agencies as part of their counterpart contributions.

3. REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN (REMPEC) Valletta, Malta

Cooperating Agency IMO

	m/m	Approved Budget 1997 (,000 US \$)
Professional Staff		
- Director - D.1	12	128
- Technical Expert - P.4	12	112
- Chemist - P.4	12	102
Total Professional Staff		342
Administrative Support		
- Information Assistant - G.6	12	20
- Senior Secretary/Admin. Assistant - G.6	12	20
- Clerk Secretary - G.4	12	17
- Clerk/Secretary - G.4	12	17
- Caretaker/Docs Reproducer - G.3	12	16
Total Administrative Support		90
Travel on Official Business		35
Office costs		85
TOTAL PERSONNEL AND OPERATING COSTS		552

4. BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)**Sofia Antipolis, France**

The increase in running costs has been kept to a minimum level (less than 4% compared to 1996). This should cover part of the step increase for staff. The allocation for travel has been increased by US\$ 10,000 in order to meet the request for additional field missions, particularly for CAMPs. The increase of the Deputy Director budget reflects the real cost (which still needs to be supplemented) of participation in MAP activities. These increases are compensated by a decrease of \$5,000 on office costs, charged to external sources.

	m/m	Approved Budget 1997 (,000 US \$)
Professional Staff		
- Chairman	12	
- Director	12	(1)
- Deputy Director/Observatory Coordinator	12	100 (2)
- Scientific Expert - Prospective	12	72
- Computer Officer	12	42 (2)
- Environmental Statistics Expert	12	(3)
- Specialist Document Officer	12	(3)
- Specialist in Map Data Processing	12	(3)
- Administrative and Financial Officer	12	47 (2)
Total Experts/Professional Staff		261
Administrative Support		
- Data Collection Assistant/Senior Secretary	12	43
- Bilingual Secretary	12	43
- Secretary	12	(4)
- Temporary Assistance		20
Total Administrative Support		106
Travel on Official Business		30
Office costs		50 (2)
TOTAL PERSONNEL AND OPERATING COSTS		447

(1) Seconded by the French Government.

(2) Supplemented by the French Government.

(3) Covered by other sources (METAP, EC) to be confirmed.

(4) Covered by the French Government.

5. PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)**Split, Croatia**

The increase in office and personnel costs is due to: (a) the increase of general labour costs (social charges and taxes, in particular) and the resulting need to harmonize the resources with the conditions prevailing in the host country (a considerable increase of salaries in the public sector); and (b) unfavourable rates of exchange which continue to affect personnel salaries and operating costs.

	m/m	Approved Budget 1997 (,000 US \$)
Professional Staff		
- Director	12	44
- Deputy Director	12	32
Total Professional Staff		76
Administrative Support		
- Senior Assistant to Projects/Translator	12	23
- Assistant to Projects/Translator	12	22
- Assistant to Projects/Translator	12	22
- Assistant to Projects/Translator	12	22
- Administrative Assistant	12	22
- Financial Assistant	12	22
- Temporary Assistance		9
Total Administrative Support		142
Travel on Official Business		27
Office costs		83
TOTAL PERSONNEL AND OPERATING COSTS		328

6. SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)

Tunis, Tunisia

	m/m	Approved Budget 1997 (,000 US \$)
Professional Staff		
- Director	12	33 ¹
- Expert	12	16.5 ¹
- Expert	12	62.5
- Data Researcher	12	44
Total Professional Staff		156
Administrative Support		
- Administrative Assistant	12	14
- Bilingual Secretary	12	12
- Driver	12	6.5
- Finance Officer	12	- ²
- Cleaner	12	- ²
- Caretaker	12	- ²
Total Administrative Support		32.5
Travel on Official Business		25
Office costs		60.5
TOTAL PERSONNEL AND OPERATING COSTS		274

(1) Represents funds allocated to supplement the salary paid by the Host Country.

(2) Paid by the Host Country.

7. ENVIRONMENT REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)

Palermo, Italy

	Approved Budget 1997 (,000 US \$)
TOTAL PERSONNEL AND OPERATING COSTS	*

* Personnel and Operating Costs are fully funded under the counterpart contribution of the Government of Italy for ERS/RAC.

8. CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)
Barcelona, Spain

	Approved Budget 1997 (,000 US \$)
TOTAL PERSONNEL AND OPERATING COSTS	*

* Personnel and Operating Costs are fully funded by the Spanish Government.

9. SECRETARIAT FOR THE 100 HISTORIC SITES

Marseilles, France

	Approved Budget 1997 (,000 US \$)
TOTAL PERSONNEL AND OPERATING COSTS	*

* Personnel and Operating Costs are fully funded under the counterpart contribution of the Municipality of Marseilles.

II. SUSTAINABLE DEVELOPMENT IN THE MEDITERRANEAN

**SUPPORT TO THE MEDITERRANEAN COMMISSION ON
SUSTAINABLE DEVELOPMENT**

Objectives

To support the activities of the Mediterranean Commission on Sustainable Development which is expected to meet in December 1996 and make proposals for studies. It is proposed that the studies will be mainly undertaken by BP/RAC and PAP/RAC.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Coastal planning and management/socio-economic analysis	110
TOTAL ACTIVITIES	110

1. INTEGRATING ENVIRONMENT AND DEVELOPMENT

1.1 Economic activities and the environmentObjectives

To study the agriculture production system, inputs and practices, and identify the impacts on major environment components, mainly water and soil.

To implement activities relevant to the implementation of the LBS Protocol with respect to industry and industrial pollution.

To secure sustainable development of tourism in the region through capacity-building for determining the capacity-building of sustainable tourism.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
Agriculture - Mediterranean Agro-Systems and Impact on Environment (BP)	10
Industry <u>LBS Protocol</u> - Application of the LBS Protocol (collection of information, implementation of common measures, preparation and implementation of action plans, capacity-building (MEDPOL)	60
<u>Cleaner Production in the Mediterranean</u> - Second National Focal Points Meeting and Second Experts Meeting	*
Tourism - National training course on the application of environmentally sound approach to planning and development of tourism activities using the Guidelines for carrying capacity for tourism (PAP)	15
TOTAL ACTIVITIES	85

* To be fully funded by the Spanish authorities.

1.2 Urban management and the environment

Objectives

To study past, present and future interactions between urban and rural developments, as well as their impact on environment components, and to identify major parameters to monitor and evaluate their evolutions.

To contribute to the implementation of the concept of sustainable cities in the Mediterranean region, and especially to study the problems of urban infrastructure systems.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Urbanization, Rural Development and the Environment in the Mediterranean: Status and perspectives (BP)	20
- Training course on Urban Solid Waste Management (French) (PAP)	30
TOTAL ACTIVITIES	50

1.3 Sustainable management of natural resources

Objectives

To identify major water management actors, study their strategies and identify relevant indicators to follow, evaluate and (re-)orient their actions towards a sustainable use of water.

To study the major use policies and their impact on soil erosion, quality and availability.

To develop the system of integrated water resources management in the region through capacity-building for water managers, and especially, to develop the management systems in urban and arid areas focusing on the conservation of water resources.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
Water resources	
- Preparation of Guidelines for Coastal Urban Master Water Planning (PAP)	18
- Expert meeting to revise and adopt the Guidelines for Coastal Urban Master Water Planning (PAP)	10
- Training Course on Integrated Development, Management and Use of Coastal Water Resources (French) (PAP)	20
Soil	
- Reports on measurement of soil erosion phenomena in selected pilot sites in Turkey, Tunisia and Spain, and final editing of draft Guidelines on Mapping and Measurement of Soil Erosion Processes (PAP)	12
- Regional Training Course on consolidated methodology of mapping of soil erosion phenomena, with the participation of FAO (PAP)	30
Living marine resources	
- Expert Group meeting to promote coordination of the ongoing research on ecologically sound integrated management of mollusc culture (PAP)	10*
- Training course on the environmentally sound siting of aquaculture, including the utilization of GIS (15 participants) (PAP)	10*
TOTAL ACTIVITIES	110

* Additional funding to be sought.

1.4 Integrated coastal area management

(a) Integrated Planning

Objectives

To assist coastal States in the formulation, approval and implementation of coastal management policies; to contribute to the strengthening of capabilities of local and national institutions, authorities and experts for the implementation of the integrated coastal and marine areas management (ICAM) process; and to assist in the resolution of concrete environmental problems in coastal areas.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Identification of the directions of future development and implementation of ICAM in the Mediterranean - expert meeting (PAP)	10
- National Training Course on the Application of Guidelines for ICAM (PAP)	11
- National Training Course on the Application of GIS in ICAM (PAP)	10
TOTAL ACTIVITIES	31

1.4 Integrated coastal area management

(b) Coastal Areas Management Programme (CAMP)

Objectives

To integrate environmental/development and resource management policies in Coastal Areas Management Programmes proposed and accepted by the Contracting Parties. Such integrated management programmes should include, as appropriate, findings and know-how of all components of MAP Phase II, such as development and sustainable management of natural resources of coastal zones.

To ensure coastal protection through legal means and to promote the exchange of expertise concerning policies and strategies for coastal protection.

This programme includes six ongoing CAMP projects in different stages of implementation, namely: Sfax/Tunisia, Algeria, Al-Hoceima/Morocco, Israel, Malta and Lebanon.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Identification of pollution "hot spots"; assistance for monitoring programmes (levels and compliance) (MEDPOL)	40*
- Implications of climate change studies (MEDPOL)	20
- Implementation of CAMP activities: assistance to local systematic and prospective analysis (BP)	**
- Planning and implementation of the activities for the Malta/Morocco/Israel CAMPs - Technical assistance to local counterparts, consultations, meetings, training (ERS)	30
- Implementation of CAMPs in Sfax/Tunisia, Algeria, Al-Hoceima/Morocco, Israel, Malta and Lebanon (PAP)	**
- Experts, consultants to assist countries participating in CAMPs (MEDU, REMPEC, SPA, HIST)	98
- Consultation meetings relevant to each CAMP project (MEDU)	30
TOTAL ACTIVITIES	218

* Additional funding to be sought.

** Funded under the voluntary contribution of the EC.

1.5 Elements for a Mediterranean strategy

Objectives

To provide the development and environment public and private actors, including the Mediterranean Commission on Sustainable Development, with necessary information, pertinent analysis and evaluation, and relevant methods and tools including the use of remote sensing as a major input to their decision-making process towards sustainable development in the Mediterranean region. Systemic and prospective approaches will be applied at regional, national and coastal levels. Through the Mediterranean Environment and Development Observatory, indicators will be identified and elaborated, institutional knowledge will be improved and national observatories will be promoted. Related capacity-building assistance will be extended to Mediterranean partners.

(a) Observation and Systemic and Prospective Analysis of Environment and Development in the Mediterranean

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Preparation and publication of 2 country profiles (BP)	25*
- Systemic and prospective tools for coastal management (BP)	10
- Workshop on identification, elaboration and use of environmental statistics and indicators (BP)	20
- Preparation and publication of a fascicle (BP)	10
TOTAL ACTIVITIES	65

* Additional funding to be sought.

1.5 Elements for a Mediterranean strategy

(b) Mediterranean Environment and Development Observatory (MEDO)

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Assistance to countries for preparation of a national environment and development Observatory (BP)	*
- Data collection and processing and organisation of the Mediterranean Environment and Development Information System (BP)	*
- Identification and elaboration of indicators: water, soil, wastes, urban, agriculture, etc.. (BP)	*
- Preparation for a report on the State of Development and Environment in the Mediterranean (BP)	*
TOTAL ACTIVITIES	*

* Funded under the voluntary contribution of the EC.

1.6 National and local capacity-building*Objectives

To assist developing countries through capacity-building activities in the use of remote sensing for the monitoring of the state and the dynamic evolution of the coastal zone environment.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- On-the-job training in remote sensing techniques and applications and technical assistance to countries (mainly on monitoring of vegetation , monitoring of coastline changes, assessment of natural resources and land suitability, study of sea dynamics in coastal areas) (ERS)	20
TOTAL ACTIVITIES	20

- * Other capacity-building activities of a more specific nature, such as training courses and direct assistance to countries, are found under each component.

2. CONSERVATION OF NATURE, LANDSCAPE AND SITES

2.1 Collection of data and periodic assessment of the situation

Objectives

Assessment of the status and, where possible, the evolution of biological diversity in the Mediterranean, with a view to identifying appropriate measures for its conservation.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Collection of data and assistance to countries for the preparation of inventories of species and sites of special interest (SPA)	*
- Meeting of Experts on <i>Caulerpa</i> (MEDU)	15**
TOTAL ACTIVITIES	15

* Funded under the voluntary contribution of the EC.

** Additional funding to be sought.

2.2 Legal measures (SPA Protocol)

Objectives

The establishment of adequate legislation for the effective protection and management of the natural and cultural heritage of the Mediterranean region, in particular through the effective implementation of the new SPA Protocol.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Analytical study on national legislation related to the conservation of biodiversity and the implementation of the new SPA Protocol (SPA)	20
TOTAL ACTIVITIES	20

2.3 Planning and management

Objectives

The establishment of effective forms of management of the natural and cultural heritage, in order to ensure its conservation and to promote its social and economic aspects.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Implementation of the Action Plan for the conservation of the Mediterranean Marine Turtles (SPA)	*
- Implementation of the Action Plan for the management of the Monk Seals (SPA)	*
- Implementation of the Action Plan for the conservation of Cetaceans in the Mediterranean Sea (SPA)	*
- Assistance to countries in the field of biodiversity conservation (SPA)	20
- Assistance to countries for the improvement of the management of SPA (particularly as regards the development and control of public access to SPAs) (SPA)	*
TOTAL ACTIVITIES	20

* Funded under the voluntary contribution of the EC.

2.4 Exchange of experience and strengthening of national capabilities

Objectives

The improvement of the institutional capabilities of the Mediterranean countries in the field of conservation and management of the natural and cultural heritage.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Training sessions on the scientific and technical aspects of the conservation of the natural common heritage (SPA)	*
TOTAL ACTIVITIES	-

* Funded under the voluntary contribution of the EC.

3. ASSESSMENT, PREVENTION AND ELIMINATION OF MARINE POLLUTION

3.1 Assessment of pollution-related problems

Objectives

Assessment of the levels and trends of loads of pollutants reaching the Mediterranean Sea.

Assessment of the levels and trends of pollutants and their potentially harmful effects on marine life , fisheries and human health.

Assistance to Contracting Parties in establishing/improving national monitoring programmes.

Provision of information about general and specific pollution-related problems and potential threats to the Mediterranean region.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
<u>Assessment</u>	
- Identification of sources and assessment of loads of pollution (MEDPOL)	30
- Monitoring of trends in the levels and effects of pollution (MEDPOL)	30*
- Preparation of documents on loads, levels, trends and effects of pollution (MEDPOL)	30
<u>Assistance</u>	
- Assistance to Contracting Parties to establish/improve national monitoring programmes through capacity-building, training and data quality assurance (MEDPOL)	120
- Assistance to MED POL participating institutes for target oriented research, in particular eutrophication and biological effects (MEDPOL)	120
- Assistance to countries to develop procedures for legal provisions for maximum permissible levels in seafood (MEDPOL)	25
- Experts for review and evaluation of MED POL activities	20
<u>Training and fellowships</u>	
- On-job training of participants in MED POL monitoring programmes and fellowships to present MED POL research and monitoring data (MEDPOL)	40
<u>Meetings</u>	
- Review meeting on the results of the pilot programme for biological effects monitoring (MEDPOL)	25
- Planning workshop on baseline surveys of open Mediterranean waters (MEDPOL)	**
TOTAL ACTIVITIES	440

* An additional contribution of 20,000 USD will be provided by WHO.

** A contribution of 15,000 USD will be provided by IOC. Additional funds may be sought from other sources.

3.2 Pollution prevention

- (a) Prevention and elimination of the pollution of the marine environment from land-based activities (LBS Protocol)

Objectives

Identification of major pollution "hot spots" in the Mediterranean, development and implementation of action plans (including economic aspects with timetables) for reduction and elimination of major "hot spots".

Development and implementation of concrete pollution control measures required by the Barcelona Convention, its protocols and decisions and recommendations of the Contracting Parties.

Formulation, adoption and implementation of the regional action plan and development and implementation of national action plans for reduction and elimination of pollution from land-based sources and activities.

Assistance to Contracting Parties in establishing compliance monitoring programmes.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
<u>Action Plans</u> - Identification of major pollution "hot spots";preparation and implementation of action plans (including economic aspects with timetables) for reduction and elimination of pollution at major "hot spots" (MEDPOL)	30*
- Formulation, adoption and implementation of regional action plan for reduction and elimination of pollution from land-based sources and activities (MEDPOL)	30*
<u>Assistance</u> - Assistance to Contracting Parties for the development and implementation of national action plans for reduction and elimination of pollution from land-based sources and activities (MEDPOL)	40
- Assistance to Contracting Parties for the implementation and enforcement of adopted pollution control measures (MEDPOL)	30
- Assistance to Contracting Parties for establishment of national compliance monitoring programmes (MEDPOL)	40**
<u>Training</u> - Training of national staff in relation to strengthening the system of environmental inspection (MEDPOL)	20*
<u>Meetings</u> - Meeting of the National Coordinators for MED POL (MEDPOL)	60

* Additional funding to be sought.

** An additional contribution of 20,000 USD will be provided by WHO.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Inter-Agency Advisory Committee (IAAC) meeting to coordinate activities on MED POL with UN Agencies (MEDPOL)	*
- One meeting of experts for the development of elements of national action plans for the reduction and elimination of pollution from land-based sources and activities (MEDPOL)	48**
TOTAL ACTIVITIES	298

* Travel cost included in MED POL Cooperating Agencies.

** Funded through the Extraordinary Contribution of the Government of Italy. The Italian authorities will also cover all additional expenses for this meeting.

3.2 Pollution prevention

- (b) Prevention of and response to the pollution of the marine environment from sea-based activities
- (i) Preparedness for, response to and cooperation in cases of accidental marine pollution (Emergency Protocol)

Objectives

To strengthen the capacities of the coastal states in the Mediterranean and to facilitate cooperation among them in order to intervene in case of emergencies and accidents causing or likely to cause pollution of the sea by oil and other harmful substances especially in case of emergency in which there is grave and imminent danger to the marine environment or when it can affect human lives.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Assistance to States in developing their national system for preparedness and response (REMPEC)	10
- Assistance to States which so request for the preparation and development of agreements amongst neighbouring coastal States (REMPEC)	6
- Assistance to States in developing port emergency response system (REMPEC)	8
- Adaptation of predicting models and decision support system to the region (REMPEC)	6
- Regional training course on preparedness and response to accidental marine pollution (REMPEC)	74
- Workshop on Crisis Management (REMPEC)	60
- Technical assistance to States in the organisation of national training courses (REMPEC)	8
- Assistance to States in case of emergency (Mediterranean Assistance Unit) (REMPEC)	8
TOTAL ACTIVITIES	180

3.2 Pollution prevention

- (b) Prevention of and response to the pollution of the marine environment from sea-based activities
 - (ii) Prevention of the pollution of the marine environment by dumping from ships and aircraft (Dumping Protocol)

Objectives

Prevention and abatement of pollution of the Mediterranean Sea Area caused by dumping from ships and aircraft.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Collection of information on issuance of permits and dumping activities and assessment of the implementation of dumping protocol (MEDPOL)	10
- Second Meeting of government-designated Experts for the Preparation of Guidelines for the Management of Dredged Material (MEDPOL)	*
TOTAL ACTIVITIES	10

* Funding to be sought.

3.2 Pollution prevention

- (c) Prevention and control of the pollution of the environment resulting from transboundary movements of hazardous wastes and their disposal

Objectives

To provide Contracting Parties with the necessary assistance related to the implementation of the Protocol on the Prevention and Control of the Pollution of the Environment resulting from Transboundary Movements of Hazardous Wastes.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
<u>Regional Activities</u> - Assistance to Contracting Parties in carrying out the appropriate preparatory actions (technical and legal) related to the implementation of the Protocol on the Prevention and Control of the Pollution of the Environment resulting from Transboundary Movements of Hazardous Wastes (development of guidelines, rules and procedures for liability and compensation, legal and administrative measures related to the prohibition of export and transit of hazardous wastes) (MEDPOL)	30
TOTAL ACTIVITIES	30

3.3 Supporting measures

Objectives

Building of the institutional capabilities of the Contracting Parties for the assessment and elimination of marine pollution.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Formulation and implementation of data quality assurance programmes (MEDPOL)	40
- Purchase of standards and reference material (MEDPOL)	25
TOTAL ACTIVITIES	65

4. INFORMATION AND PARTICIPATION

Objectives

To strengthen public awareness of the protection and enhancement of the Mediterranean environment, to strengthen cooperation with appropriate NGOs, and to inform Mediterranean decision-makers, scientists, administrators as well as the public at large on MAP activities.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Publication and dissemination of MAP Technical Reports (MEDU)	15
- Library services (environmental awareness and educational assistance); Librarian (Consultant); Exchange/dissemination of information and reports (MEDU)	20
- Preparation and translation of MAP Newsletter MEDWAVES (Arabic, English and French) (MEDU)	15
- Printing and dissemination of MEDWAVES (MEDU)	25
- Support to public awareness national campaigns on the Mediterranean, the conservation of the coastline, scarce water, etc. (support to NGOs, training, competitions, youth campaigns, etc.) (MEDU)	20
- Preparation, editing and translation of MAP brochures and reports (MEDU)	30
- Printing and dissemination of brochures and reports, including the use of the Internet (MEDU)	20
TOTAL ACTIVITIES	145

III. STRENGTHENING OF THE LEGAL FRAMEWORKObjectives

To seek the early entry into force of the new MAP legal instruments and to promote their early implementation by the Contracting Parties.

To formulate and adopt appropriate rules and procedures for the determination of liability and compensation for damages resulting from the pollution of the marine environment.

To promote the adoption of relevant national legislation and to ensure the compliance of the Contracting Parties to the provisions of the Barcelona Convention and its protocols.

ACTIVITIES	Approved Budget 1997 (,000 US \$)
- Legal assistance to the Secretariat (MEDU)	15
- Assistance to countries to develop their national legislation in line with the objectives of MAP II (MEDU)	15
TOTAL ACTIVITIES	30

ANNEX IV

APPENDIX

MED POL-Phase III

**PROGRAMME FOR THE ASSESSMENT AND CONTROL OF POLLUTION
IN THE MEDITERRANEAN REGION**

(1996-2005)

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PREFACE

In 1992, the Bureau of the Contracting Parties asked the Secretariat to organize the preparation of an in-depth evaluation of the MED POL Programme by scientists/experts external to the MAP Office with a view of using this evaluation in the drafting of the Phase III of MED POL. Five consultants worked during 1993 and an evaluation was prepared and presented to the Eighth Ordinary Meeting of the Contracting Parties in October 1993 (UNEP(OCA)/MED IG.3/Inf.6). During the latter Meeting the Contracting Parties also formally agreed that a Phase III of MED POL should be prepared covering the period from 1996 to 2005 and, to this effect, they set a number of basic objectives and principles which should be used for its preparation (UNEP(OCA)/MED IG.3/5, Annex IV).

The meeting of experts on the preparation of MED POL-Phase III was held in Izmir from 20 to 23 June 1994 with the partial financial support of the Government of Turkey. Twenty experts from the Mediterranean and elsewhere attended the meeting, together with representatives of United Nations agencies and international organizations (UNEP(OCA)/MED WG.75/3). The meeting, after reviewing and discussing the achievements and shortcomings of Phases I and II of the MED POL Programme, prepared a draft MED POL-Phase III Programme, which was submitted for approval to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee (Athens, 3-8 April 1995). Due to lack of time, this document was not considered by the Joint Meeting and delegations were requested to provide comments to the Secretariat in writing. After reviewing the comments received and taking into account the results of the informal consultation meeting on MED POL-Phase III (Athens, 13-15 December 1995), the document was revised to bring it in line with the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP-Phase II), approved by the Contracting Parties in June 1995. Finally, the revised document was first submitted to the Meeting of the MED POL National Coordinators (Athens, 18-22 March 1996), who discussed it in detail and agreed on its content, and subsequently transmitted to the Meeting of MAP Focal Points (Athens, 6-10 May 1996) who approved it. The present document is the final text adopted by the Contracting Parties at their Extraordinary Meeting held in Montpellier from 1 to 4 July 1996.

1. BACKGROUND

1.1 The MED POL Programme, designed initially as the environmental assessment component of the Mediterranean Action Plan, has been operational since 1975. Its first phase (MED POL-Phase I) was implemented from 1975 until 1980 and it comprised seven basic baseline studies covering the major marine pollution problems in the Mediterranean. In 1981, the Contracting Parties to the Barcelona Convention approved a new ten-year long-term programme (MED POL-Phase II, 1981-1990) which included two main components, monitoring and research. In 1991, the Contracting Parties decided to extend MED POL-Phase II until 1995. In 1995, it was further extended to 1996 to allow the completion of the programme as well as the formulation of the next phase.

1.2 In fact, during the implementation of MED POL-Phase II, the need was felt to bring the MED POL Programme closer to the other components of the Mediterranean Action Plan and in particular to the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, which entered into force in 1983, and the more recent Coastal Areas Management Programme (CAMP). As a result, preparations were made to refocus the MED POL Programme and thus prepare a new phase of the programme (MED POL-Phase III, 1996-2005). In addition, global events such as the Rio de Janeiro Summit, Agenda 21 and the Contracting Parties meeting in 1995 outlined a different and more integrated dimension in the approach to marine pollution control programmes, i.e. towards sustainable development.

1.3 As early as 1989, a meeting of experts took place to evaluate the main pollution data gathered until then through MED POL (UNEP(OCA)/MED WG. 5/3). Four experts prepared specific reports on sources of pollution (UNEP(OCA)/MED WG.5/Inf.3), micro-organisms in coastal areas (UNEP(OCA)/MED WG.5/Inf.4), heavy metals in coastal and reference areas (UNEP(OCA)/MED WG.5/Inf.5) and petroleum and chlorinated hydrocarbons in coastal and reference areas (UNEP(OCA)/MED WG.5/Inf.6), which presented the available data, showed the existing gaps, and made suggestions for the improved collection and use of data.

1.4 In addition, several meetings and consultations took place within and outside the Secretariat with the scientific community and the United Nations bodies involved in the Programme; in particular, large forums such as the ICSEM/IOC/UNEP Workshops on pollution of the Mediterranean Sea were utilized to discuss with the scientific community the major achievements and shortcomings of the Programme and to propose new approaches. Two review papers, "Monitoring Strategies of Marine Pollution" and "Pollution Problems in the Mediterranean and Relevant Research Strategies", were presented and widely discussed during the Xth CIESM/IOC/UNEP Workshop held in Perpignan (1990). The papers summarized and critically analysed the work carried out within the framework of MED POL in the field of monitoring and research and proposed follow-up activities. During the XIth CIESM/IOC/UNEP Workshop on Pollution held in Trieste (1992) another review paper "The Data Quality Assurance Programme of MED POL" presented the new strategy of MED POL as to data quality assurance and the prospects in the specific field. Discussions on the subject of the new phase of MED POL were also held in the course of all Inter-Agency Advisory Committee Meetings of MED POL.

1.5 In 1992, the Bureau of the Contracting Parties asked the Secretariat to organize the preparation of an in-depth evaluation of the MED POL Programme by scientists/experts external to the MAP office with a view to using this evaluation in the drafting of Phase III of MED POL.

Five consultants worked during 1993 and an evaluation was prepared and presented to the Eighth Ordinary Meeting of the Contracting Parties in October 1993 (UNEP(OCA)/MED IG.3/Inf.6). During the latter Meeting, the Contracting Parties formally agreed that a Phase III of MED POL should be prepared covering the period from 1996 to 2005 and, to this effect, they set a number of basic objectives and principles to be used in its preparation (UNEP(OCA)/MED IG.3/5, Annex IV).

1.6 The meeting of experts on the preparation of MED POL-Phase III was held in Izmir from 20 to 23 June 1994 with the partial financial support of the Government of Turkey. Twenty experts from the Mediterranean and elsewhere attended the meeting, together with representatives of United Nations agencies and international organizations (UNEP(OCA)/MED WG.75/3). The meeting, after reviewing and discussing the achievements and shortcomings of Phases I and II of the MED POL Programme, prepared a draft MED POL-Phase III Programme, which was submitted for approval to the Joint Meeting of the Scientific and Technical Committee and the Socio-Economic Committee (Athens, 3-8 April 1995). Due to lack of time, this document was not considered by the Joint Meeting and delegations were requested to provide comments to the Secretariat in writing. After reviewing the comments received and taking into account the results of the informal consultation meeting on MED POL-Phase III (Athens, 13-15 December 1995), the document was revised to bring it in line with the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP-Phase II), approved by the Contracting Parties in June 1995. Finally, the revised document was first submitted to the Meeting of the MED POL National Coordinators (Athens, 18-22 March 1996), who discussed it in detail and agreed on its content, and subsequently transmitted to the Meeting of MAP Focal Points (Athens, 6-10 May 1996) who approved it. The present document is the final text adopted by the Contracting Parties at their Extraordinary Meeting held in Montpellier from 1 to 4 July 1996.

2. INTRODUCTION

2.1 The organization of a programme for monitoring of the sources, levels and effects of contaminants, as well as the research related to this monitoring, was one of the cornerstones of the Mediterranean Action Plan (MAP) adopted by the governments of the Mediterranean countries in February 1975. With the adoption, in 1976, of the Barcelona Convention by the same governments, and the subsequent adoption of the Protocols to this Convention, the objectives and methodologies of the programme were gradually modified in order to respond to the expanding goals set by the governments.

2.2 The declared objectives of the first phase of the Programme, MED POL-Phase I (1975-1980), were:

- to formulate and carry out a coordinated pollution monitoring and research programme taking into account the goals of the Mediterranean Action Plan and the capabilities of the Mediterranean research centres to participate in it;
- to assist national research centres in developing their capabilities to participate in the Programme;
- to analyse the sources, levels, pathways, trends and effects of pollutants relevant to the Mediterranean Sea;
- to provide the scientific/technical information needed by the Governments of the Mediterranean States and the EEC for the negotiation and implementation of the Convention and its related Protocols; and
- to build up consistent time-series of data on the sources, pathways, levels and effects of pollutants in the Mediterranean Sea and thus contribute to the scientific knowledge of the Mediterranean Sea.

2.3 While the first phase of the Programme focused on strengthening national capabilities in order to enable all countries to participate in the Programme and on the development of methodologies needed to implement it, the next phase of the Programme¹ (MED POL-Phase II, 1981-1996) had more general and broader objectives to provide the Parties to the Barcelona Convention with:

- information required for the implementation of the Convention and the Protocols;
- indicators and evaluation of the effectiveness of the pollution prevention measures taken under the Convention and the Protocols;
- scientific information that may lead to eventual revision and amendment of the relevant provisions of the Convention and the Protocols, and for the formulation of additional protocols;

¹ *Long-term programme for pollution monitoring and research in the Mediterranean (MED POL)-Phase II.* UNEP Regional Seas Reports and Studies No. 28. Rev.1. UNEP, 1986.

- information that could be used in formulating environmentally sound national, bilateral and multilateral management decisions essential for the continuous socio-economic development of the Mediterranean region on a sustainable basis; and
- periodic assessment of the state of pollution of the Mediterranean Sea.

2.4 During the second phase of MED POL:

- the gains of the first phase were consolidated by considerable strengthening of national institutional capabilities through: training; provision of equipment; development of suitable sampling and analytical techniques, quality assurance programmes including intercalibration exercises, equipment maintenance and other forms of assistance;
- the monitoring of the levels and effects of contaminants was intensified, and gradually focused on monitoring related to compliance with the pollution control measures adopted by the Contracting Parties, through agreements with governments involving about 80 national institutions in practically all Mediterranean countries;
- the research programme contributing to the improved understanding of the requirements for pollution control measures was considerably broadened, and implemented through more than 500 research contracts with national institutions in practically all Mediterranean countries;
- a detailed survey (inventory) of pollutants from land-based sources, as defined by the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources (LBS Protocol), was initiated;
- consistent databases resulting from monitoring, research and survey activities, and other sources, were built-up and used in the preparation of studies, analyses and assessments of specific environmental pollution problems;
- a regional assessment of the environmental state of the marine and coastal environment was prepared (1989 and 1995);
- a regional assessment of the possible implications of expected climate changes was prepared (1992 and 1995), and 11 detailed site-specific studies were carried out on the implications of these changes, with concrete recommendations for the possible mitigation of the negative effects;
- in-depth analyses ("assessment documents") of 13 specific problems related to the control of individual contaminants (or group of contaminants) covered by the LBS Protocol were prepared and used as the basis for the formulation of control measures subsequently adopted by the Parties to the Convention; and
- significant input was made from all activities listed above into the Coastal Area Management Programme (CAMP) carried out within the framework of the Action Plan.

2.5 The Eighth Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Antalya, 12-15 October 1993) reaffirmed the objective of the Mediterranean Action Plan (MAP) since its establishment to act as an instrument of regional cooperation covering the concerns

both of the environment and of development, and approved a set of recommendations (UNEP(OCA)/MED IG.3/5, Annex IV) on the general strategy to be followed in MAP, as well as the action to be taken under specific components of MAP in order to implement this strategy.

2.6 Recognizing that:

- in line with UNCED and Agenda 21, further emphasis is to be given to those MAP activities contributing to the implementation of the sustainable development concept; and that
- MED POL, as the scientific and technical component of MAP, provides the scientific basis for decision-making related to marine pollution in the region in the process of achieving sustainable development;

recommendation 7.2 of the Antalya meeting called for the development of MED POL-Phase III and specified the fields in which it should assist the Contracting Parties, with the following overall objectives:

- organization of a Mediterranean coordinated marine pollution monitoring and research programme, concentrating on contaminants and pollutants affecting the quality of the marine and coastal environment, as well as the health of man and of the living resources in the Mediterranean and interpretation/ assessment of the results of the programme as part of the scientific basis for decision-making in the region;
- generation of information on the sources, levels, amounts, trends (trend monitoring) and effects of marine pollution, development of capabilities for assessing the present and future state of the marine environment within the Mediterranean region as an additional component of the scientific basis upon which the formulation of proposals for preventive and remedial action can be based;
- formulation of proposals for technical, administrative and legal programmes and measures for the prevention and/or reduction of pollution;
- strengthening and, when necessary, development of the capabilities of the national institutions, in accordance with the circumstances and the country requesting it, so as to implement monitoring and research of pollution of the marine environment; and
- assistance, as appropriate, to Contracting Parties for the implementation of the recommendations adopted with a view to the assessment of their effectiveness; this assistance will allow the competent authorities to verify the recommendations adopted taking into account data of a satisfactory standard.

2.7 The Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995) approved the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean (MAP-Phase II). Chapter 3 of MAP-Phase II, which deals with the assessment, prevention and elimination of marine pollution, gives the framework for MED POL-Phase III. In addition, the adoption of the amendment to the 1980 LBS Protocol by the Conference of Plenipotentiaries held in Syracuse on 6-7 March 1996, also provides MED POL with the legal framework of pollution control for the Mediterranean, thus indicating the main programme strategy to be followed.

2.8 The main strategic change in the MED POL Programme is therefore the shift of the emphasis from pollution assessment to pollution control, which brings the programme close to the objectives of the LBS Protocol and MAP-Phase II and makes it an effective tool for achieving sustainable development. The Programme also includes monitoring for compliance purposes, especially as far as the control measures adopted are concerned.

3. OBJECTIVES OF MED POL-PHASE III (1996-2005)

3.1 The objectives of MED POL-Phase III were formulated taking into consideration the experience gained during MED POL-Phases I and II, as well as the documents adopted by the Ninth Ordinary Meeting of the Contracting Parties (Barcelona, 5-8 June 1995), namely, MAP-Phase II, the Barcelona Resolution, the Priority Fields of Activities (1996-2005) and the amended Barcelona Convention and Protocols.

3.2 The ultimate and overall objective of MED POL-Phase III (1996-2005) is the elimination of pollution² of the Mediterranean Sea from all activities that cause such pollution, in particular land-based activities, through the full implementation of the LBS Protocol. MED POL-Phase III provides the basis for action related to assessment, prevention and elimination of marine pollution and relates such action to other components of MAP-Phase II in the perspective of sustainable development.

The specific objectives of MED POL-Phase III are in particular:

- (a) the assessment of all (point and diffuse) sources of pollution, the load of pollution reaching the Mediterranean Sea, and the magnitude of the problems caused by the effect of contaminants on living and non-living resources, including human health, as well as on amenities and uses of the marine and coastal regions;
- (b) assistance to countries, including capacity-building, in the development and implementation of national action plans for the elimination of marine pollution, in particular from land-based activities;
- (c) the assessment of status and trends in the quality of the marine and coastal environment as an early warning system for potential environmental problems caused by pollution;
- (d) the formulation and implementation of action plans, programmes and measures for the prevention and control of pollution, for the mitigation of impacts caused by pollution and for the restoration of systems already damaged by pollution; and
- (e) the monitoring of the implementation of the action plans, programmes and measures for the control of pollution and the assessment of their effectiveness.

3.3 In view of the broad cross-sectoral mandate of MED POL with heavy emphasis on pollution control from all sources, in particular from land-based sources and activities, and taking

² In the context of this document, "pollution of the marine environment" is interpreted according to the definition adopted in the United Nations Convention on the Law of the Sea and in the Barcelona Convention (as amended in 1995) as:

the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

into account the fact that the control of marine pollution is one of the central issues to be resolved within the framework of MAP-Phase II in order to enable the sustainable development of the Mediterranean region, the new phase of MED POL will require intensified interaction between MED POL and practically all other components of MAP, and with the Coastal Area Management Programme (CAMP) in particular. Therefore, in outlining the possible elements of MED POL's new phase, an attempt is made in the present document to link the specific objectives and activities proposed for MED POL-Phase III with those adopted for the other components of MAP-Phase II.

3.4 In addition to reflecting the links between MED POL-Phase III and the other components of MAP-Phase II, the Programme was also prepared with due regard for the concepts and recommendations contained in Agenda 21 as they bear on activities relevant to MED POL, specifically those contained in Chapter 17 of Agenda 21³.

3.5 The stated goals shall be achieved through the implementation of interdependent and linked (see Figures 1 and 2) activities grouped in three basic MED POL-Phase III programme elements (assessment of pollution-related problems; pollution control; and supporting measures), all contributing to the ultimate goal of MED POL-Phase III and MAP-Phase II. The rationale of these activities, their specific objectives and means of implementation are described in Sections 5-8 of the present document.

3.6 The development of suitable measures for the prevention, abatement and control of pollution from all sources, and continuous assessment of the effectiveness of their implementation, are the central goals of the new phase of MED POL. All other activities are subsidiary to these goals and contribute to their more efficient achievement. By concentrating on these goals, MED POL-Phase III is expected to provide critically important inputs into practically all other components of MAP-Phase II, notably CAMPs (giving due consideration to pollution problems associated with coastal development), and thus make a significant contribution to the sustainable development of the Mediterranean region.

³ Chapter 17 of Agenda 21, adopted by the United Nations Conference on Environment and Development (Rio de Janeiro, 3-14 June 1992), lists 33 objectives and more than 180 types of activity that are recommended under the heading *Protection of the oceans, all kind of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their resources.*

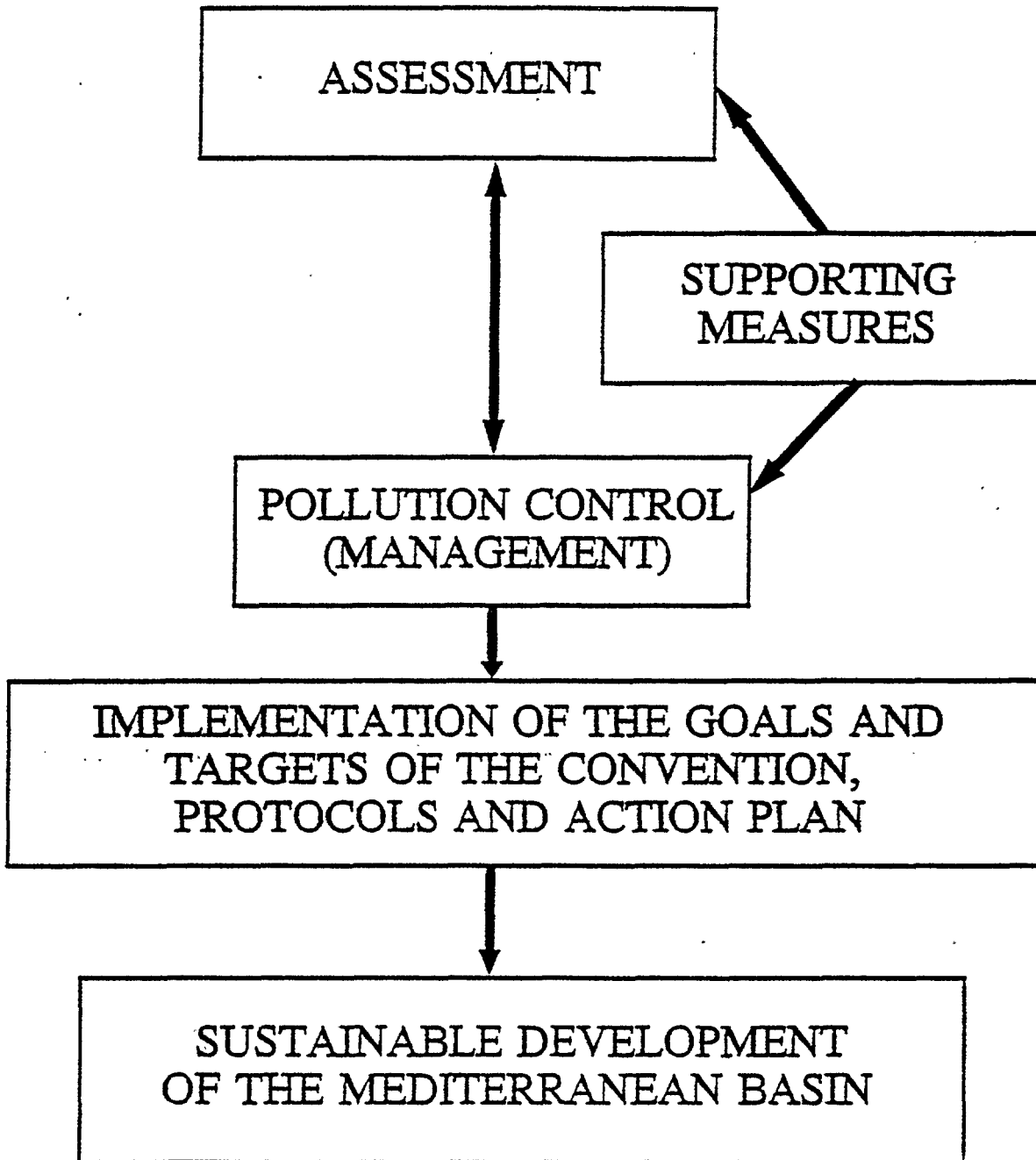


Figure 1: Relationship of MED POL-Phase III to the goals of the Mediterranean Action Plan emphasizing the feed-back relationship between assessment and pollution control.

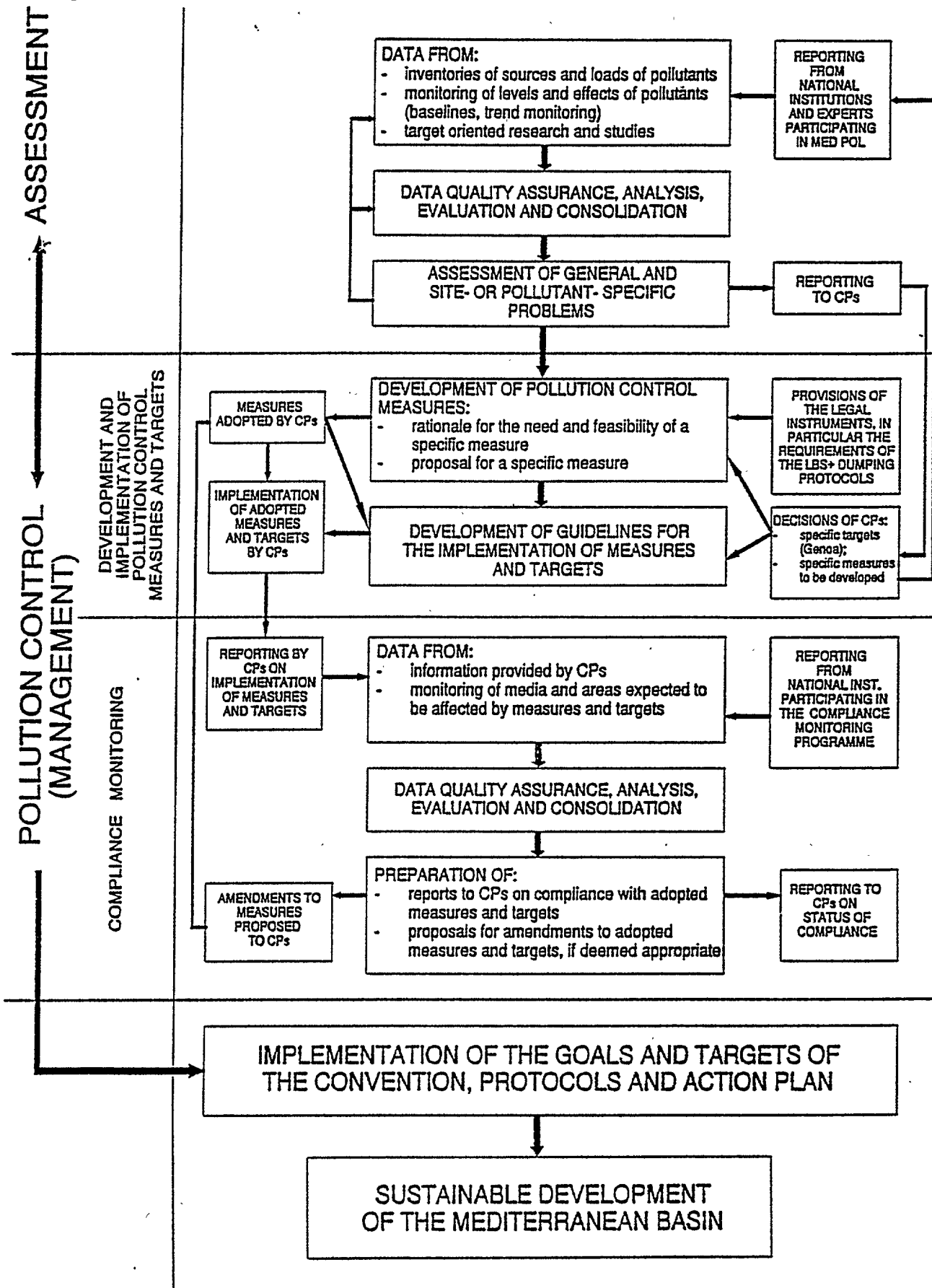


Figure 2: Simplified flow chart showing the more important links between the substantive activities of MED POL-Phase III.

4. MODALITIES OF COOPERATION BETWEEN THE CONTRACTING PARTIES AND THE SECRETARIAT REGARDING MED POL

4.1 In order to ensure the efficient coordination of national efforts related to MED POL and a streamlined communication channel between the *Secretariat of MAP* and the national structures designated by the Contracting Parties to participate in MED POL, each Contracting Party designates a person or office as the *National Coordinator for MED POL*. Their mutual responsibilities shall be as follows:

Responsibilities of the National Coordinators for MED POL

4.2 The National Coordinators for MED POL should actively promote MED POL-related activities in their respective countries and should maintain close and continuous contact with the MED POL Collaborating Institutions, other national agencies involved in the implementation of MED POL, as well as the Secretariat. In order to maximize the National Coordinators' efficiency, the Contracting Parties should establish, as appropriate, national mechanisms (e.g. Intersectoral Coordination Committees, Technical Committees, Scientific Advisory Groups) to assist the National Coordinators in the fulfilment of their duties. Furthermore, the Contracting Parties should endeavour to involve the National Coordinators in MAP-related decision-making at the highest possible levels⁴.

4.3 Responsibility for implementing MAP II of the Barcelona system lies with the MAP Focal Points and consequently also the implementation of MED POL. It is the responsibility of the MAP Focal Points to assist MED POL National Coordinators in the implementation of MED POL.

4.4 The specific responsibilities of the National Coordinators shall be:

- (a) to ensure the implementation of all activities of the national monitoring programme of MED POL covering compliance and trend monitoring;
- (b) to ensure selection and designation of *National MED POL Collaborating Institutions* and coordinate their activities relative to all MED POL activities;
- (c) to serve as the channel for all formal communications between the Secretariat and the National MED POL Collaborating Institutions, while for technical matters Institutions may be contacted directly by the Secretariat;
- (d) to ensure the collection and evaluation of the data and information provided by the National MED POL Collaborating Institutions and to transmit these data and information annually, as well as their evaluation, to the Secretariat according to agreed formats and schedules;
- (e) to ensure preparation and submission of reports on dumping activities relevant to the Dumping Protocol and on implementation of the LBS Protocol;

⁴ Should the Contracting Parties establish National Committees for MAP, the National Coordinators for MED POL should be members of such Committees.

- (f) to organize the preparation of national surveys and/or inventories of point and non-point land-based sources of pollutants relevant to the LBS Protocol, including those relevant to airborne pollutants;
- (g) to organize the preparation of national reports on the state of the marine and coastal environment areas, to be prepared every four years with the first report being prepared by the year 2001;
- (h) to follow the progress achieved in the implementation of national MED POL-related activities and to report to the Secretariat thereon according to agreed formats and schedules;
- (i) to participate in or be represented at the meetings of the MED POL National Coordinators; and
- (j) to review the MED POL-related technical and policy documents and proposals prepared by the Secretariat before their submission to the Contracting Parties, and to advise the Contracting Parties and the Secretariat on how to handle these documents and proposals.

Responsibilities of the National MED POL Collaborating Institutions

4.5 As far as the national monitoring programmes are concerned, individual responsibilities shall be determined by the National Coordinators for MED POL in consultation with the Secretariat, as appropriate; such responsibilities shall be reflected in the monitoring agreements signed between the Secretariat and the National Coordinators for MED POL, as appropriate. The Institutions shall report to the Secretariat through the respective Coordinator according to agreed formats and schedules, and shall participate in the ongoing mandatory Data Quality Assurance programmes organized by the Secretariat.

Responsibilities of the Secretariat

4.6 The specific responsibilities of the Secretariat shall be:

- (a) to coordinate and harmonize the work carried out within the framework of the agreed national MED POL programmes in close cooperation with specialized bodies of the United Nations system supporting or participating in the Programme; this shall be done in close consultation and cooperation with National Coordinators for MED POL, National MED POL Collaborating Institutions, MAP's Regional Activity Centres and international and intergovernmental specialized organizations;
- (b) to evaluate and analyse the data stored in the Secretariat's database received through the National Coordinators for MED POL;
- (c) to organize Data Quality Assurance programmes with or through the relative competent United Nations specialized agencies participating in the Programme, as appropriate;
- (d) to organize and implement training and capacity-building activities when needed and requested by developing countries;

- (e) to convene the periodic meetings of the MED POL National Coordinators and any other *ad hoc* groups of experts called to:
- assist in the analysis, evaluation, and integration of data and information made available through the National Coordinators for MED POL or other sources; and
 - review and advise on the technical and policy documents prepared by the Secretariat and the United Nations specialized agencies;
- (f) to prepare, jointly with or through the relevant competent United Nations specialized agency or agencies participating in the Programme, whenever appropriate, technical and policy documents, including guidelines, for the Contracting Parties based on data and information received through the National Coordinators for MAP, through MED POL Collaborating Institutions, through other research Institutions and open scientific literature. These technical and policy documents include:
- reports on the state and trends in the environmental quality of the marine and coastal areas; and
 - proposals for action plans, programmes and measures for pollution control, including those that may prevent or abate the environmental degradation of these areas, or contribute to the restoration of the areas affected by degradation; and
- (g) to provide the Contracting Parties, and other interested bodies with information available on the state of the Mediterranean environment.

5. ASSESSMENT OF POLLUTION-RELATED PROBLEMS

Basis for action

5.1 A scientific assessment of pollution-related problems of the Mediterranean region is one of the basic prerequisites for development of a rational approach towards the sustainable development of the region. Such an assessment, together with information provided through the other components of MAP-Phase II, is the sound foundation for the decisions and recommendations of the Contracting Parties to the Convention to adopt action plans, programmes and measures suitable and applicable in the Mediterranean region⁵.

Objectives

5.2 The specific objectives of this programme element shall be:

- (a) to identify the sources, assess the present levels and keep under periodic review the trends in the load of contaminants reaching the Mediterranean Sea from marine and land-based sources including point and non-point sources and airborne contaminants. This will constitute an inventory of sources of pollution required as basic information for the implementation of the LBS and other Protocols⁶;
- (b) to assess, in areas under direct influence of pollution sources (e.g. coastal waters, estuaries), the levels and trends of contaminants and their potentially harmful effects on marine life and human health, and the negative effects on fisheries and aquaculture⁶;
- (c) to assess, in areas not under direct influence of identifiable point or non-point sources of pollution ("reference areas"), the magnitude of parameters which may serve as indicators for the general trend in the environmental quality of larger areas⁶;
- (d) to evaluate the anthropogenic loads of pollutants and to assess their potential harmful effects on the marine environment, taking into consideration and comparing (on a sub-regional basis) with background levels of relevant substances;
- (e) to identify and assess potential short- and long-term threats to the Mediterranean environment;
- (f) to provide the Contracting Parties, and other interested parties, with information available on the state of the Mediterranean environment.

Activities

5.3 The stated objectives shall be achieved through:

- (a) monitoring/studies/surveys, as appropriate, of levels, loads, pathways, and distribution of contaminants and their effects;

⁵ Articles 5, 6, 7, 8 and 11 of the Barcelona Convention (1995).

⁶ Paragraph 17.35 of Agenda 21.

- (b) monitoring of trends in the levels and effects of contaminants⁷ (see Annex);
- (c) target-oriented research in support of monitoring activities⁸;
- (d) analysis and evaluation (at a national, sub-regional or regional level) of pollution related data from surveys, baseline studies and monitoring organized within the framework of MED POL;
- (e) preparation of reports on the assessment of specific pollution-related problems of the Mediterranean region including recommendations for action, if deemed appropriate⁹;
- (f) preparation of national reports on the state of the marine and coastal environment, to be prepared every four years with the first report being prepared by the year 2001;
- (g) preparation of short and concise reports on the state of pollution of the Mediterranean environment for each meeting of the Contracting Parties, specifically highlighting the changes and trends identified since the submission of the last report¹⁰; and
- (h) preparation by the Secretariat for the 2001 meeting of the Contracting Parties, of a consolidated report on the state of the Mediterranean environment¹¹.

5.4 The monitoring shall concentrate on the assessment of trends in pollution-related problems in order to provide a solid basis for the appraisal of the environmental health of the Mediterranean as a whole, and to serve as an early warning system for the problems that may be encountered in the future (see Annex), as well as the preparation of inventories of point and non-point sources of pollution, particularly the land-based sources, and the monitoring of the pollution loads reaching the Mediterranean from these sources.

5.5 In some instances, data from monitoring programmes alone will not be sufficient for the assessment of pollution-related problems and their long-term implications. Therefore, in such cases, monitoring data will have to be supplemented by well-defined target-oriented research as indicated by the Contracting Parties.

5.6 Although the overall assessment for the Mediterranean will be organized by the Secretariat of MAP, there is also a need for national assessments in order to decide on national management measures.

⁷ Article 12 of the Barcelona Convention (1995).

⁸ Article 13.3 of the Barcelona Convention (1995).

⁹ The recommendations may lead to the development of proposals for concrete pollution control measures, as described in Section 6A of the present document.

¹⁰ Paragraph 17.106 (d) of Agenda 21.

¹¹ Reports of this nature were published in 1990 and 1996.

Means of implementation

5.7 The assessment of pollution-related problems will require a high degree of coordination and close cooperation between the Secretariat of MAP¹², the National Coordinators for MED POL, the National MED POL Collaborating Institutions, the specialized agencies of the United Nations system supporting or participating in MED POL, as well as other specialized intergovernmental and international organizations¹³. The modalities of their cooperation are described in Section 4 of the present document.

5.8 Data and information relevant to the monitoring of trends in the levels and effects of contaminants, as well as to the inventories of pollution sources and loads (paragraphs 5.3(a) and (b) and 5.4), will be generated and provided to the Secretariat by the National MED POL Coordinators and by the National MED POL Collaborating Institutions as described in Section 4.

5.9 Target-oriented research (paragraphs 5.3(c) and 5.5) will be based on research projects selected by the Secretariat in cooperation with the relative United Nations specialized agency participating in the Programme. For such projects, research contracts will be signed by the Secretariat or agency and the National MED POL Collaborating Institutions, in consultation with the relevant National Coordinators for MED POL. The Collaborating Institutions may receive financial support from the Trust Fund to cover part of the cost of the research carried out by them.

5.10 Assistance to developing countries will be needed in the form of training of their national experts and technical assistance (equipment, consumables, Data Quality Assurance) to their national institutions, in order to enable them to participate effectively in the programme element¹⁴.

¹² In the context of this document, UNEP's Coordinating Unit for the Mediterranean Action Plan in Athens is identified as the Secretariat of MAP.

¹³ - United Nations Environment Programme (UNEP)
- Food and Agriculture Organization of the United Nations (FAO)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- World Health Organization (WHO)
- World Meteorological Organization (WMO)
- International Atomic Energy Agency (IAEA)
- Intergovernmental Oceanographic Commission (IOC)
- World Conservation Union (IUCN)

¹⁴ Article 13.3 of the Barcelona Convention (1995).

6. POLLUTION CONTROL

6.1 A scientific assessment of pollution-related problems of the Mediterranean region is only the first step towards action to prevent, abate and control pollution and its effects. Therefore, the substantive focus of MED POL-Phase II gradually shifted from assessment of the problems related to pollution to the development of proposals for concrete pollution control measures. Taking into account the data and information obtained in the previous phases of MED POL and relying on a permanent system for keeping the present assessment up to date through activities envisaged in Section 5 of the present document, MED POL-Phase III will further emphasize the development of action plans, programmes and measures for the control of pollution and compliance with those adopted by the Contracting Parties, as its central activities.

A. Development and implementation of pollution control measures¹⁵

Basis for action

6.2 Pollution from land-based sources was recognized in the very early stages of MAP as the major problem for the Mediterranean region. The adoption of the LBS Protocol (1980), its entry into force (1983), and its amendment (1996), provided the legal basis for the development of action plans, programmes and measures for the control of pollution from land-based sources and activities in accordance with the Protocol.

6.3 Although the control of pollution from land-based sources remains a major objective of MAP-Phase II, the control of pollutants from other sources and activities is not neglected, as exemplified by the adoption of protocols associated with the Barcelona Convention which deal with pollution from dumping and emergency situations, as well as with offshore exploration and exploitation¹⁶.

Objectives

6.4 The specific objectives of this programme element shall be:

¹⁵ In the context of this document, *pollution control measures* are broadly interpreted as a combination of technical (technological), economic, legal and administrative policies, measures and practices contributing to the:

- prevention and mitigation of pollutants' impact on human health and on the quality of the marine and coastal environment, including their living and non-living resources, and amenities;
- general decrease of pollution load reaching the Mediterranean Sea;
- rehabilitation of marine and coastal environment damaged by the present impact of pollution; and
- achievement of sustainable development.

¹⁶ *Protocol concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances* (adopted in 1976, entered into force in 1978); *Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft* (adopted in 1976, entered into force in 1978, amended in 1995); *Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf, the Seabed and its Subsoil* (adopted in 1994).

- (a) to develop action plans, programmes and measures for the control of pollution as required by the Barcelona Convention and its Protocols and by the decisions and recommendations of the Contracting Parties; and
- (b) to implement the action plans, programmes and measures for the control of pollution adopted by the Contracting Parties.

Activities

6.5 The stated objectives shall be achieved by:

- (a) providing an assessment of the magnitude and intensity of the problem, which is to be tackled by the measures ("assessment document"), including a scientifically sound rationale for pollution control measures, taking into account ecotoxicological criteria and the precautionary principle¹⁷;
- (b) formulation of proposals for action plans, programmes and measures for the control of pollution, taking into account article 4.4 of the Barcelona Convention (1995)¹⁸ and the feasibility of implementing the measures in the Mediterranean region;
- (c) formal adoption of the proposed action plans, programmes and measures, or of their amended versions, by the Contracting Parties;
- (d) development of technical guidelines for the implementation of adopted action plans, programmes and measures; and
- (e) implementation by the Contracting Parties of the adopted action plans, programmes and measures for the control of pollution.

Means of implementation

6.6 A high degree of cooperation and coordination will be required among the Secretariat, the Contracting Parties, the National Coordinators for MED POL, as well as the relevant Regional Activity Centres of MAP, the specialized agencies of the United Nations system (see footnote 13) as well as the relevant international and intergovernmental organizations to implement the activities listed above.

6.7 The priorities for the formulation of action plans, programmes and measures, as well as the timetable for the development of proposals, shall be determined by the Contracting Parties.

¹⁷ Article 4.3 of the Barcelona Convention (1995).

¹⁸ Article 4.4 of the Barcelona Convention (1995) states that:
In implementing the Convention and the related Protocols, the Contracting Parties shall:

- (a) adopt programmes and measures which contain, where appropriate, time limits for their completion;
- (b) utilize the best available techniques and the best environmental practices and promote the application of, access to and transfer of environmentally sound technology, including clean production technologies, taking into account the social, economic and technological conditions.

6.8 Based on the decisions of the Contracting Parties, the Secretariat will coordinate the preparation of the assessment documents, the formulation of proposals for action plans, programmes and measures, and the technical guidelines for their implementation.

6.9 Consultants and *ad hoc* meetings of experts may be used by the Secretariat for the preparation of the assessment documents, the proposals for action plans, programmes and measures, and the guidelines for their implementation.

6.10 The meetings of the MED POL National Coordinators shall review, and revise as necessary, the drafts of the assessment documents, the proposals for action plans, programmes and measures and the guidelines for their implementation, before they are submitted for the consideration of the Contracting Parties.

6.11 The implementation of the adopted action plans, programmes and measures shall be the responsibility of the individual Contracting Parties¹⁹.

6.12 Assistance shall be provided through the Secretariat to developing countries requesting training of their national experts, or technical and legal advice to their national institutions, in order to ensure timely and effective implementation of the adopted action plans, programmes and measures for the control of pollution²⁰.

B. Compliance control

Basis for action

6.13 Compliance with the provisions of MAP-Phase II, the Barcelona Convention and its Protocols (in particular the LBS and Dumping Protocols), and specifically with the decisions and recommendations adopted by the meetings of the Parties to the Convention²¹, is the key to successful environmental protection of the Mediterranean Sea. The most relevant decisions and recommendations pertinent to the abatement, prevention and control of pollution are:

- (a) the relevant targets of the Genoa Declaration, adopted by the Contracting Parties in 1985²², to be achieved as a matter of priority during the second decade of the Mediterranean Action Plan;
- (b) the specific action plans, programmes and measures adopted by the Contracting Parties in the context of the implementation of the LBS Protocol²³; and

¹⁹ Regarding potential financial support for the implementation of the adopted measures, see paragraph 7.8.

²⁰ Article 13.3 of the Barcelona Convention (1995), and Article 10 of the LBS Protocol (1996).

²¹ Article 27 of the Barcelona Convention (1995).

²² Genoa Declaration. UNEP(OCA)/IG.56/5.

²³ The common measures adopted so far are included in MAP Technical Reports Series No. 95.

- (c) the relevant decisions of the Contracting Parties and especially paragraph 6 of the Barcelona Resolution adopted by the Conference of Plenipotentiaries (Barcelona, 9-10 June 1995).

Objectives

6.14 The specific objectives of this programme element shall be:

- (a) to monitor, on a continuous basis, the implementation and to assess the effectiveness of the implementation of action plans, programmes and measures for the control of pollution adopted or recommended by the Contracting Parties;
- (b) to identify problems experienced by the Contracting Parties in the implementation of the action plans, programmes and measures, and formulate proposals that may assist in overcoming those problems²⁴; and
- (c) to keep the Contracting Parties regularly informed about the status of the implementation of the adopted action plans, programmes and measures²⁵.

Activities

6.15 The stated objectives shall be achieved through:

- (a) analysis and evaluation at a national, subregional or regional level of data and information generated by the Contracting Parties on the status of implementation of the adopted or recommended action plans, programmes and measures for the control of pollution²⁶;
- (b) compliance monitoring programmes²⁷ carried out by National MED POL Collaborating Institutions (see Section 4 and the Annex);
- (c) analysis and evaluation of data and information received through the National Coordinators for MED POL from national compliance monitoring programmes (see Section 4);

²⁴ Paragraph 17.25 (b) of Agenda 21.

²⁵ Paragraph 17.35 (b) of Agenda 21.

²⁶ Article 26 of the Barcelona Convention (1995); Articles 4, 5 and 6 of the Dumping Protocol (1995); and Article 13 of the LBS Protocol (1996).

²⁷ Article 12 of the Barcelona Convention (1995), and Article 8 of the LBS Protocol (1996).

- (d) target-oriented research in support of national compliance monitoring programmes²⁸; and
- (e) preparation of consolidated reports for the Contracting Parties on the status of the implementation of the action plans, programmes and measures, including recommendations on the ways and means to improve the efficiency of their implementation.

6.16 The type of data and information that will be expected from the Contracting Parties, may include, *inter alia*:

- (a) the status of the adopted or recommended action plans, programmes and measures (paragraph 6.13(b)) in relation to the relevant national legislation and national administrative procedures and practices²⁹;
- (b) information on the permits issued for dumping of waste³⁰;
- (c) the experience gained with the implementation of the action plans, programmes and measures for the control of pollution and dumping permits, and the permits provided for by the LBS Protocol;
- (d) the results of the time series of measurements and observations (see Annex) regarding the levels and effects of contaminants in media directly affected by the measures (e.g. effluent waters, recipient waters);
- (e) the major marine and land-based sources of marine pollution (including airborne) on the national territories, including coastal waters, and estimates of the amounts of contaminants reaching the marine environment from these sources; and
- (f) with regard to land-based pollution, information relevant to the monitoring of the status of the biological diversity, and on threats to specially protected areas, which may come from sources of pollution outside their control³¹.

Means of implementation

6.17 The Secretariat will coordinate all activities envisaged under the programme element. Close cooperation with and among the Contracting Parties and their institutions designated to participate in the programme element is the basic prerequisite for its successful implementation.

²⁸ Article 13.2 of the Barcelona Convention (1995), and Article 9 of the LBS Protocol (1996).

²⁹ Article 27 of the Barcelona Convention (1995) and Article 13 of the LBS Protocol (1996).

³⁰ Articles 5 and 6 of the Dumping Protocol (1995).

³¹ Article 21 of the SPA protocol.

6.18 Data and information on the status of the adopted or recommended action plans, programmes and measures, and on the experience gained with their application (paragraphs 6.16(a), (b) and (c)) will be provided to the Secretariat by the Parties to the Convention, or on their behalf by the designated National Coordinators for MED POL, without cost to the Trust Fund.

6.19 Data and information on the results of the time series of measurements and observations, and on the marine and land-based sources of pollution (paragraphs 6.16(d) and (e)) will be provided to the Secretariat by the Contracting Parties through the National Coordinators for MED POL. The costs involved are expected to be shared between the Trust Fund and the relevant national institutions on the basis of agreements between the Secretariat and the relevant national authorities (see Section 4).

6.20 Target-oriented research (paragraph 6.15(d)) will be based on research projects selected by the Secretariat in cooperation with the relevant United Nations specialized agency participating in the Programme. For such projects, research contracts will be signed by the Secretariat or agency and the National MED POL Collaborating Institutions, in consultation with the relevant National Coordinators for MED POL. The Collaborating Institutions may receive financial support from the Trust Fund to cover part of the cost of the research carried out by them.

6.21 Assistance shall be provided through the Secretariat to developing countries requesting training of their national experts, or technical advice or assistance (equipment, consumables and Data Quality Assurance³²) to their national institutions participating in monitoring the effectiveness of the implementation of pollution control measures and reporting on national compliance with these measures.

³² See paragraph 7.7 and the Annex.

7. SUPPORTING MEASURES

7.1 References have been made in Sections 5 and 6 of the present document to some of the measures supporting the substantive MED POL activities, but in view of their importance for the MAP as a whole, they are described in these sections of the document in a more comprehensive way.

A. Assistance (capacity-building)

Basis for action

7.2 MED POL-Phase III cannot be implemented in a meaningful way without a strong national institutional basis supported with adequate financial resources, equipment and experts. While the situation in developed countries of the Mediterranean region seems adequate to deal with the implementation of the MED POL Programme, the capacity of the developing countries will need further strengthening.

Objective

7.3 The objective of the programme element is:

- to facilitate the full participation of all Contracting Parties in MED POL, including the implementation of the action plans, programmes and measures for the control of pollution and the recommendations adopted by the Contracting Parties³³.

Activities³⁴

7.4 The stated objective shall be achieved by providing countries requesting assistance with:

- (a) technical advice on the most suitable institutional arrangements that may be needed for the implementation of the MED POL programme;
- (b) advice and technical assistance in all aspects of design and implementation of national MED POL programmes;
- (c) advice on legal³⁵, technical³⁶ and fiscal³⁷ policies, strategies, and practices that may contribute to the implementation of the action plans, programmes and measures for the

³³ Paragraphs 17.6 (k), 17.9, 17.14, 17.17, 17.23, 17.35 (f), 17.38 (f), 17.40 and 17.104 of Agenda 21.

³⁴ References to the legislative authority for specific assistance measures are given in the relevant paragraphs of Sections 5 and 6 of the present document.

³⁵ E.g., review of the adequacy of existing national legislation, proposals for adjustments in national legislation, proposals for new legislation.

³⁶ E.g., clean production technologies, minimization of waste.

³⁷ E.g., user fees, charges for violating pollution control measures, pricing policies and practices, fiscal incentives, possible loans and grants from international financial institutions.

control of pollution and targets adopted by the Contracting Parties;

- (d) individual and group training (e.g. seminars, workshops) of national experts (administrators, technicians, scientists) in all subjects related to the MED POL Programme;
- (e) equipment and material donated to the National MED POL Collaborating Institutions;
- (f) guidelines, manuals, documents and reference publications relevant to the implementation of the MED POL Programme; and
- (g) assistance in maintaining the analytical equipment used in national pollution monitoring programmes.

Means of implementation

7.5 Provision of the assistance shall be coordinated by the Secretariat, involving as necessary the relevant RACs of MAP, the specialized agencies of the United Nations system, as well as other international and intergovernmental organizations and programmes ready to offer or provide such assistance. The cost of the assistance will normally be at the expense of the Trust Fund, but the Secretariat will also solicit direct bilateral assistance (without cost to the Trust Fund) from countries and financial institutions ready to provide such assistance.

7.6 Assistance may also be provided by the Secretariat to the MED POL National Coordinators needed to fulfil their role as defined in Section 4.

7.7 Activities related to Data Quality Assurance (DQA)³⁸ will continue to be provided to MED POL Collaborating Institutions through the appropriate United Nations specialized agencies. The DQA programme will include all the elements necessary to achieve good quality data. Such elements cover all aspects of the monitoring programme ranging from sampling to data interpretation. The DQA programme should be mandatory and form an integral part of each national monitoring programme (see Annex, paragraphs 10 and 11).

7.8 The implementation of MED POL may be eligible for financial support (loans or grants) from international or regional financial institutions and mechanisms on a regional or country basis. The Secretariat will explore the possibilities for such support and will assist interested and potentially eligible countries to formulate project proposals aimed at accessing these resources³⁹.

³⁸ Data Quality Assurance is a mechanism for ensuring that the quality of the data is sufficiently reliable for its intended application.

³⁹ The Global Environment Facility (GEF), the European Union and the World Bank's Mediterranean Environment Programme are at present the three most promising mechanisms that may support MED POL-related activities.

B. Data and information management⁴⁰

Basis for action

7.9 The nature and quality of data and information provided through MED POL is of crucial importance for the soundness of the scientific and technical rationale underlying the decisions of the Contracting Parties. Therefore, great emphasis should be placed on appropriate data and information management procedures and techniques.

Objectives

7.10 The management of MED POL data and information shall have a twofold objective:

- (a) to make available to the Contracting Parties on a continuous basis reliable data and the information required for the development and effective implementation of action plans, programmes and measures for the control of pollution; and
- (b) to assist all components of MAP, and the Coastal Area Management Programmes (CAMPs) in particular, with data and information on the sources, levels (concentrations), trends and effects of contaminants in the Mediterranean region.

Activities

7.11 The stated objectives shall be achieved through the following activities of the Secretariat:

- (a) collection of data and information resulting from MED POL activities;
- (b) quality control (validation) of collected data and information;
- (c) storage of validated data and information in appropriate databases maintained at the Secretariat or in the country concerned;
- (d) analysis and reduction, if appropriate, of the validated data at a national or regional level;
- (e) preparation of synthesis reports (evaluations) on general and specific MED POL related issues; and
- (f) distribution (exchange) of data, information and synthesis reports to the Contracting Parties and their subsidiary bodies, RACs, National Coordinators for MED POL, National MED POL Collaborating Institutions, meetings organized within the framework of MAP, and other individuals and organizations, as appropriate, and in accordance with the policy that will be adopted by the Contracting Parties (see paragraph 7.14).

⁴⁰ Data and information management in the context of this document is understood as involving acquisition, quality control, analysis, evaluation, storage, retrieval and exchange (dissemination) of data and information.

Means of implementation

7.12 The National Coordinators for MED POL and the National MED POL Collaborating Institutions shall be the primary source of data and information supporting the development and implementation of MED POL.

7.13 The collection, quality control, analysis and evaluation of the data and information will be carried out nationally with the help of the Secretariat if needed, or by the Secretariat (with the help of the relevant organizations of the United Nations system, outside experts, and *ad hoc* meetings of experts, as necessary), for data stored at the Coordinating Unit.

7.14 The Secretariat's databank will include only data useful for the establishment of trends. The Secretariat, with the assistance of relevant experts, will develop a proposal for data and information distribution policy to be submitted for adoption to the Contracting Parties. The guiding principle of that policy should be that access to the data and information received by the Secretariat will normally be free for the parties involved in MED POL.

7.15 The reports of the Secretariat to the Contracting Parties will be transmitted through the subsidiary bodies of the Contracting Parties.

C. Coordination and cooperation

Basis for action

7.16 MED POL, as one of the basic and most complex MAP activities, linked with virtually all other MAP activities, requires a well-coordinated approach in order to ensure the harmonious cooperation and interaction of, and inputs from, the various actors contributing to its implementation.

Objective

7.17 The objective to be achieved through the coordination of MED POL activities is:

- to ensure the full implementation of Contracting Parties' decisions relevant to MED POL through the highest degree of efficient cooperation among the Secretariat, national structures, international organizations, and individuals participating in the implementation of MED POL⁴¹.

Activities

7.18 The stated objective shall be achieved by:

- guidance provided directly or indirectly by the Secretariat to all parties involved in MED POL; and
- close cooperation among all parties involved in MED POL.

⁴¹ Paragraph 17.10 of Agenda 21.

Means of implementation

7.19 The Secretariat shall coordinate all MED POL activities, in close cooperation with the National Coordinators for MED POL⁴², the national MED POL Collaborating Institutions, the specialized agencies of the United Nations system, as well as other international and intergovernmental organizations ready to offer or provide support.

7.20 The Meeting of the MED POL National Coordinators, as the subsidiary body of the Contracting Parties, will continue to review periodically the progress of MED POL, evaluate its results and advise the Contracting Parties on the strategies to be followed for its implementation.

7.21 The MED POL National Coordinators may establish *ad hoc* expert groups to advise them on specialized topics.

7.22 The coordination of the inputs from the specialized organizations of the United Nations system into MED POL will continue to be ensured through direct working level contacts with these organizations and periodic Inter-Agency Advisory Committee (IAAC) Meetings on MED POL.

7.23 The periodic meetings of the heads of RACs with the Secretariat will continue to be used to ensure: (a) the coordination between complementary activities of MAP implemented by the Secretariat and the respective RACs; and (b) the inputs of MED POL into activities carried out by RACs.

⁴² The modalities of cooperation are described in Section 4.

8. IMMEDIATE PRIORITIES FOR THE IMPLEMENTATION OF MED POL-PHASE III

8.1 In view of the fact that MED POL-Phase III encompasses a wide range of important activities that require urgent implementation, the MED POL budget should be increased substantially. However, since such an increase does not appear feasible through the MED Trust Fund, it is considered necessary to seek outside funding (see paragraph 7.8). Until such outside assistance is possible, it is recommended that, during the initial stage of its implementation, the MED POL Programme concentrate on a number of priority activities.

8.2 The following activities (not in order of priority), which are in line with the Priority Fields of Activities adopted by the Contracting Parties (Barcelona, 1995), are recommended:

- (a) Formulation, including the setting of priorities, and implementation of regional, subregional and national action plans, programmes and measures for the control of land-based pollution.

The implementation of the LBS Protocol will be the cornerstone of MED POL-Phase III. This implementation will be based on national and regional action plans, programmes and measures. In order to formulate such action plans, programmes and measures, MED POL-Phase III will establish the priorities in accordance with those set out in the annexes to the LBS Protocol, taking into account the characteristics of substances provided in Annex I to the Protocol.

- (b) Formulation and implementation of a programme of coastal zone trend monitoring on a regional basis.

On the basis of the experience gained through MED POL-Phases I and II and in view of the objectives of MED POL-Phase III, national monitoring programmes will have to be designed or redesigned in order to satisfy national needs and enable the results of the programme to be used as a management tool for controlling marine pollution. A number of fixed coastal stations from the national programmes will be selected for inclusion in a regional monitoring network for the establishment of trends in the Mediterranean. This programme will provide information that can be used for the assessment of the overall quality status of the Mediterranean Sea, as well as for the effectiveness of control measures taken.

- (c) Identification of sources (especially major "hot spots") and assessment of loads of pollution.

The preparation of inventories of point and non-point sources of pollution, particularly the land-based sources, and the monitoring of the pollution loads reaching the Mediterranean from these sources, is considered a high priority since such information is necessary for making management decisions. Within this context, a list of major pollution "hot spots" in the Mediterranean will be prepared and relevant action plans (with economic aspects and timetables) for reduction and elimination of pollution will be developed and implemented.

- (d) Assistance to countries for the formulation, development and implementation of national monitoring programmes.

Although considerable progress was achieved during MED POL-Phase II, in many cases, national monitoring programmes have not yet produced the expected results, either because the programme was not designed properly or was not implemented fully (temporal and spatial gaps) and the data were not of the required quality. Through MED POL-Phase III, assistance will be provided for the formulation of appropriate monitoring programmes to developing countries requesting it, as defined in paragraph 7.4.

- (e) Assistance to countries (including capacity-building) for the implementation and enforcement of adopted pollution control measures.

It is clear that without the proper implementation of the control measures the success of the programme will be jeopardized. In accordance with paragraph 6.12, assistance will be provided to facilitate the implementation and enforcement of measures to developing countries requesting it as defined in paragraph 7.4.

- (f) Eutrophication and biological effects to be considered as priority subjects for research.

From MED POL-Phase II results it appears that eutrophication is becoming a major problem at regional level. As a result, special attention should be given to this problem and extra efforts are required for its solution. Being very complex and involving a number of processes, more research is required to understand its causes, effects, geographical distribution and trends and eventually propose remedial action.

The Contracting Parties (Antalya, 1993) have decided to introduce monitoring of biological effects in the MED POL Programme. This is not possible unless reliable techniques that can be used routinely are developed. Research is required to assist in the final selection of the techniques and in developing and testing the methodologies.

ANNEX

MONITORING OF THE LEVELS AND EFFECTS OF CONTAMINANTS IN THE CONTEXT OF MED POL-PHASE III

1. Two basic types of monitoring are identified within the framework of the MED POL-Phase III Programme: compliance and trend monitoring. Surveys will also be carried out in order to complement the monitoring data and facilitate decision-making for management purposes.
2. Compliance monitoring is defined as the collection of data through surveillance programmes to verify that the regulatory conditions for a given activity are being met e.g. concentration of mercury in effluents. In the case of identifying an instance of non-compliance, appropriate enforcement can be established which can be escalated until compliance is achieved.
3. Trend monitoring is defined as the repeated measurement of concentrations or effects over a period of time to detect possible changes with time. This type of monitoring will provide information that can be used for the assessment of the state of the environment and the effectiveness of pollution control measures taken. If the effectiveness of measures is deemed inadequate, additional activities may be initiated such as the formulation of new measures or the revision of existing ones, etc.
4. Depending on the matrices and parameters included in the programme, monitoring will be carried out for the following purposes:

Compliance monitoring

- **Compliance monitoring of health-related conditions** (eg. sanitary quality of bathing areas and waters used for aquaculture, quality of seafood). This type of monitoring has a national significance, but data may also be used for regional assessments;
- **Compliance monitoring of effluents** to determine whether the adopted common measures concerning concentrations of contaminants in effluents (e.g. mercury, cadmium) are complied with; and
- **Compliance monitoring in "hot spot" areas** to determine whether the environmental quality objectives or limit values set are complied with (e.g. DDT in water).

Trend monitoring

- **Coastal zone trend monitoring**, through a regional network of selected fixed coastal stations, of parameters that contribute to the assessment of trends and the overall quality status of the Mediterranean Sea. As explained under Section 8, this type of monitoring will be carried out on a regional basis;
- **Trend monitoring in "hot spot" areas** (intensively polluted areas) and high risk areas that are likely to become heavily polluted, are subject to harmful seasonal phenomena such as algal blooms, or where control measures have been taken. This type of monitoring will be designed as necessary at the subregional level, and will be carried out on a national basis, and the data will be utilized for taking management decisions at a

local level, including the assessment of the effectiveness of the control measures taken;

- **Trend monitoring of loads** (e.g. from land-based sources of pollution in general or from identified sources, pollutants transported by atmosphere, pollutants carried by rivers) and assessment of loads originating from non-point sources. Data from this type of monitoring will be utilized locally but also for regional assessments; and
 - **Trend monitoring of biological effects** at different organizational levels, including molecular, cellular, physiological, behavioural, community and ecosystem levels, can also be used as an early warning system. This type of monitoring can be included in national monitoring programmes as well as in the regional trend programme.
5. In addition, surveys will be carried out to complement the monitoring data:
- surveys of health-related effects (e.g. occurrence of illnesses in bathers exposed to contaminated waters and sand and in consumers of seafood) will be carried out on a routine basis;
 - surveys of point and non-point land-based sources of pollution needed for the development, compilation and maintenance of inventories, will be carried out; and
 - baseline and trend surveys through international and multinational cruises of the whole Mediterranean Sea will be conducted at periodic intervals (once every five or ten years) in order to contribute to the assessment of the overall quality status of the Mediterranean Sea.

Matrices to be monitored

6. The matrices (one or several) included in monitoring programmes will depend on the objective and purpose of the monitoring. The most common matrices which could be included in monitoring programmes are:
- (a) effluents reaching the marine environment from industrial plants, municipal sewerage systems and agriculture drainage channels;
 - (b) waters, sediments and biota (which also include individuals, populations and communities of marine mammals and sea birds) of marine coastal zones and estuaries which are, or are likely to be, under the direct impact of identifiable point or non-point source(s) of pollution;
 - (c) atmosphere through which pollutants may enter the marine environment and thus affect its quality; and
 - (d) humans who may be affected by pollutants through direct or indirect exposure to polluted marine media, or products (e.g. food) derived from such media.

Parameters or indicators to be monitored

7. Parameters or indicators to be monitored will vary from case to case, i.e. will be site and problem specific. They may include one or several of the following types of physical, chemical or biological parameters or health-related indicators:

- physical and chemical properties of the monitored abiotic media;
- the concentration of a specific chemical compound or group of compounds in a given matrix;
- marine ecosystem health on molecular, cellular, individual organism, community and ecosystem levels (e.g. bioassays, teratogenic or genetic changes if appropriate, biomarkers, histopathology, physiology, population structure);
- sanitary quality of media used by people (e.g. microbiological quality of bathing waters), or for food production (e.g. quality of waters used for and by aquaculture);
- ecological effects of coastal aquaculture (land-based and marine facilities);
- health effects on humans exposed to contaminated media (e.g. bathers) or products (e.g. contaminated shellfish) derived from such media;
- marine litter.

8. In case of compliance monitoring, the selection of the parameter(s) to be monitored is determined by the pollution control measure whose compliance is being monitored.

Programme design⁴³

9. For both compliance and trend monitoring, it is essential that the question being posed is both testable and specific, i.e. within a statistical context. The question must relate to a specific environmental compartment, i.e. water, suspended material, sediment or biota. The sequence then is:

- to identify meaningful levels of change and the confidence limits of that change that are to be detected (e.g. with what precision can a 20 per cent loss in number of species of a benthic sediment-living community be detected?);
- to obtain knowledge of special and temporal variability of the element being sampled from a desk study or pilot study;
- application of power analyses is essential in order to rationalize the programme⁴⁴;
- selection of elements of the programme taking into account logistic constraints⁴⁵;

⁴³ See Guidelines for monitoring chemical contaminants in the sea using marine organisms. UNEP Reference Methods for Marine Pollution Studies No. 6.

⁴⁴ See Peterman, R.M. and M'Gonigle, M., Statistical Power Analysis and the Precautionary Principle, Marine Pollution Bulletin, Vol. 24, No. 5, pp. 231-234, 1992.

⁴⁵ See also new experimental designs (Underwood, Aust. J. Mar. Sci. 1993).

- define data quality objectives and decide *a priori* on the statistical methods to be applied in analysing the data; and
- to select sampling sites and sampling frequency based on the foregoing information.

Data Quality Assurance Programme

10. Following the design of a scientifically-based national monitoring programme, a Data Quality Assurance (DQA) programme is required to ensure data reliability. The required quality assurance must address all aspects of the programme, including:

- trained staff;
- appropriate facilities, sampling and measurement equipment and other consumables;
- regular calibration, maintenance, and servicing of the equipment;
- sampling that conforms to sampling design (see paragraph 9);
- sample handling procedures, including, for example, transportation, preservation, storage, tissue dissection, bone grinder, homogenization, sub-sampling (sub-sampling includes all steps up to the measurement);
- regular checks of accuracy and precision of routine measurements, by analyses of appropriate reference materials (when available) and the documentation of the results on control charts;
- external quality assessment (e.g. participation in intercomparison exercises);
- standard operating procedures (written protocols with precise descriptions of all elements of the measurements and quality control procedures);
- record of all calculations such as data translation and transcriptions prior to final documentation (record books and/or computers);
- data evaluation procedures (e.g. converting data into a report).

11. The results obtained by sampling, measurement and observation must be of adequate quality not only analytical (accuracy and precision) but also meet the requirements of the objectives⁴⁶ and be comparable on a Mediterranean-wide basis. Failure to include DQA information with the submission of monitoring data will mean that the data may not be included in the MED POL database and therefore will not be considered in the overall evaluation. The results must be reported to the Secretariat according to agreed formats and schedules, in order to satisfy the reporting requirements. The Secretariat will assist countries in the interpretation of data.

⁴⁶ The experience with quality assurance programmes, largely based on the practices of MED POL, is described in *Contaminant Monitoring Programmes using Marine Organisms: Quality Assurance and Good Laboratory Practice* (Reference Methods for Marine Pollution Studies No.57, UNEP, 1990).