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MEDITERRANEAN ACTION PLAN

Meeting of the Bureau of the Contracting Parties to the Convention for the protection of the Mediterranean Sea against pollution and its related protocols

Brussels, 13-14 March 1991

CONTRIBUTION OF THE MEDITERRANEAN COASTAL STATES TO THE 1992 UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED)

(Note by the Secretariat)

U N E P
Athens, 1991

Introduction

1. At their Sixth Ordinary Meeting, held in Athens from 3 to 6 October 1989, the Contracting Parties decided that the Secretariat, including its Regional Activity Centres, should prepare a synthetic report based on data and policy reports supplied by governments as a contribution to the preparatory process of the 1992 United Nations Conference on Environment and Development UNEP(OCA)/MED IG.1/5 .

2. The joint meeting of the Scientific and Technical Committee and the Socio-Economic Committee of the Contracting Parties, held in Athens from 28 May to 1 June 1990, recommended that the report should take into account the decisions of the Preparatory Committee for the 1992 Conference (Nairobi, 6-31 August 1990) and that the Bureau of the Contracting Parties might consider authorizing the holding of a specific meeting to assist in the preparation of the report UNEP(OCA)/MED WG.12/6 .

3. The Bureau of the Contracting Parties, meeting in Rome in September 1990, took note of the work of the Preparatory Committee and, in particular, of its request to review, at its second session, "a comprehensive report with recommendations for action". The Bureau approved a timetable for the preparation of the report, including the convening of a meeting of government-nominated experts to adopt the final version (UNEP/BUR/37/6).

4. The meeting of the Working Group of government-nominated experts was held in Athens from 16 to 18 January 1991. It adopted the text that appears in the Annex to this report for the Bureau's review and approval.

5. During the debate, there was general agreement that the meeting of the Contracting Parties in October 1991 should provide the occasion for a strong declaration by the Contracting Parties that could be transmitted to the 1992 Conference. The Co-ordinator requested that the participants should provide the Secretariat with their suggestions in order to prepare a draft declaration to be reviewed by the Bureau.

6. Furthermore, the meeting decided that the following additional documents and material would subsequently be prepared, subject to the approval of the Contracting Parties:

1. a commitment by States to "Agenda 21", that is to say their future action at the beginning of the XXIst century;

2. an analytical table of socio-economic and environmental development 1970-1990-2010;

3. documents and audiovisual presentations for the general public showing concisely and attractively Mediterranean problems, efforts deployed and prospects.

The participant from France indicated that his country was prepared to contribute to this effort.

ANNEX

Mediterranean Contribution to the Preparatory Process of the 1992 United Nations Conference on Environment and Development

Introduction

The decision of the General Assembly to convene a United Nations Conference on Environment and Development (General Assembly Resolution 44/228) in 1992 following a preparatory process based on national reports and regional conferences, was brought to the attention of the Sixth Ordinary Meeting of the Contracting Parties to the Convention for the protection of the Mediterranean Sea against Pollution (the Barcelona Convention) and its related Protocols held in Athens, from 3 to 6 October 1989. The meeting decided that the Secretariat, including its Regional Activity Centres, should prepare a synthetic report for the Conference based on data and policy reports supplied by governments (UNEP(OCA)/MED IG 1/5).

The Bureau approved a timetable for preparation of the report for UNCED, including the convening of a meeting of government-nominated experts to adopt the final version (UNEP/BUR/37/6).

The present document was reviewed and adopted at a meeting of government experts convened in Athens from 16 to 18 January 1991 (UNEP(OCA)/MED WG. 19/4).

This document is an initial contribution to the Conference's preparation. It outlines the results of the co-operation implemented over 15 years, emphasizing the relationship between environment and development and representing views on Mediterranean prospectives and environmental policy.

International co-operation on the Mediterranean environment started in 1975 and has developed as a result of the determination shown by 18 coastal States and the EEC, under the auspices of UNEP. It consists of a programme entitled the "Mediterranean Action Plan" and is a model of regional co-operation between industrialized and developing countries in Europe, Africa and Western Asia. This experience can serve as a model for international co-operation, in particular, at the Conference on Environment and Development in Rio de Janeiro.

I. MEDITERRANEAN ACTION PLAN

(a) State of the Mediterranean environment

Although the objective of this document is not to summarize the environmental situation of the Mediterranean basin and its relation to development, it is important to note that within the framework the of Mediterranean Action Plan (MAP) more than 300,000 statistical data have been collected. These highlight both environmental degradation and the efforts deployed to reverse it over the last 20 years since the 1972 Stockholm Conference. For example, the number of clean bathing beaches has increased; many coastal countries have decreased the amount of untreated waste water discharged in the sea; several countries now treat over 50 per cent of their sewage.

Governments have provided increasingly reliable information on the state of pollution of coastal waters and the open sea, as well as on the sources of pollution and quantities of pollutants reaching the area, with an indication of the damage they cause.

On the basis of the data supplied, MAP was able to prepare assessment documents on the state of pollution by mercury, cadmium, petroleum hydrocarbons, organohalogen and organotin compounds, used lubricating oils, microbial pollution of bathing and shellfish growing areas and proposed measures to combat such pollution.

A comprehensive report on the state of the Mediterranean marine environment is distributed to the Contracting Parties at approximately five-yearly intervals. The most recent was published in 1989 (MAP Technical Report Series No. 28). The findings of this document and of the assessment documents mentioned above can be summarized as follows:

- the Mediterranean Sea, as a semi-enclosed water body with a permanent coastal population of about 130 million and more than 100 million tourists annually (80 million 20 years ago) has increasingly served as the recipient of a multitude of waste discharges from residential areas, tourist complexes and industrial activities;

- as in other regions, the main human health problems associated with marine pollution in the Mediterranean arise from contact with polluted water and/or sand on bathing beaches and consumption of chemically or microbiologically contaminated seafood. The situation regarding microbiological contamination of bathing beaches and shellfish has improved during the last decade as result of a stricter enforcement of standards for the quality of water and marine organisms coupled with measures to reduce sewage pollution at source;

- adverse health effects through consumption of chemically contaminated seafood appear to be restricted to relatively heavy seafood consumers, but the range and level of such effects have still to be determined;

- industrial sources and the natural geochemical anomalies in certain Mediterranean localities affect the level of mercury in organisms and marine sediments adjacent to these sources. The

high mercury levels found in certain Mediterranean seafood species represent a legal and, possibly, health problem, in addition to any effect these levels may have on marine organisms and ecosystems;

- the levels of cadmium reported for the various compartments of the Mediteranean marine environment are not alarming and, in general, are comparable to those found in other regions of the world. Cadmium in seafood usually constitutes only a small fraction of the total daily intake, and terrestrial food and smoking are much more important;

- information on levels of organochlorine compounds in the Mediterranean Sea area indicates the increased risk of cancer for populations that are large-scale consumers of sea food;

- the concentration of petroleum hydrocarbons in sea water, sediments and organisms varies over a wide range. Measurements of pelagic and beach tar conducted after 1980 suggest a decrease in tar quantity within the last ten years, especially in the eastern Mediterranean;

- generally Mediterranean waters are oligotrophic and eutrophication is mostly associated with embayments, large coastal cities and estuaries, due to discharge of untreated domestic/industrial waste water. Eutrophication is frequent in some localities and the main symptoms consist of disruption of the community structure, excessive algal production and the development of anoxicity in the sub-surface layer. The open-sea oligotrophic Mediterranean waters, however, remain in sharp contrast with to conditions prevailing in peripheral embayments.

In addition to these data on the state of the sea, assessments were also made when preparing the Blue Plan, in particular. In Mediterranean States, the population in 1970 was 286 million and in 1990 it amounted to approximately 380 million, an increase of 33 per cent. This growth rate is higher in southern and eastern Mediterranean countries, despite a reduction in the birth rate. For the first time, statistics have enabled the coastal regions to be defined and growth has been shown to be relatively higher in the coastal areas. Statistics based essentially on United Nations data have allowed the trends in energy consumption, utilization of space, agri-food production and urbanization to be calculated. In 20 years, the urban population has increased by 48 per cent. In many cases, this has shattered the notion of a traditional Mediterranean city. The work carried out has also related environmental developments to economic and social aspects (population, urbanization, living standards).

(b) Historic background and institutional framework

The Mediterranean Action Plan and the Barcelona Convention, signed in 1976[1] and elaborated following the global Stockholm Conference of 1972, constituted the point of departure for model regional multilateral co-operation. MAP has not only been used as the model for other regional programmes ("regional seas"), but also as an interesting legal point of reference in international law. It can serve as a useful future pattern for international co-operation and solidarity, when dealing with regional problems, particularly "eco-regional" problems, or intensifying action carried out at the planetary level.

One institutional characteristic of this action is that it is carried out under the auspices of the United Nations, especially that of UNEP, with the support of other international bodies both within and outside the United Nations family. Another characteristic is that it catalyzes action by States and the European Community, but does not replace it. Although the action carried out within the framework of the Mediterranean Action Plan first and foremost focusses on marine pollution, it is gradually being expanded to include concerns that link environmental protection to socio-economic issues; coastal management, for example, is a valuable geographic framework for such integration. The scenario for the next 30 years (Horizon 2025), which is called the "Blue Plan", is elaborated within the framework of MAP and is another example of the link between environment and development. It is unique in the world and is an activity regularly carried out by the States together.

Some of the results of this inter-Mediterranean work constitute either obligations, in the form of conventions and protocols, or a reference point taken into account by the Contracting Parties and decentralized authorities in their own way, in their own time and bearing in mind national specificities. This work can serve, and has served, as a model for action carried out within the Mediterranean framework: the METAP programme, commenced in 1990 by the World Bank and the European Investment Bank; the Nicosia Charter, adopted in 1990; the final document of the CSCE Meeting in Palma de Mallorca, also adopted in 1990.

MAP's institutional framework and its relationship to the 19 Contracting Parties is simple but original. It comprises the following elements:

- biennial meetings of the Contracting Parties, with ministerial participation;
- a Bureau of four elected members meeting every six months;
- UNEP designated as the Secretariat with a full-time Co-ordinating Unit established in Athens;

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[1] The Contracting Parties are the following: Albania, Algeria, Cyprus, EEC, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Spain, Syria, Tunisia, Turkey and Yugoslavia

- Regional Activity Centres in Valletta (Malta), Split (Yugoslavia), Sophia Antipolis (France) and Salammbo (Tunisia);

- a Mediterranean Trust Fund to which US $35 million have been contributed to date, together with additional firm pledges of contributions up to the end of 1991 representing more than US $ 6 million, and supplementary resources mobilized by States equivalent to two or three times these amounts.

The institutional framework within which inter-Mediterranean action is situated is not only that outlined by the Barcelona Convention and resulting from its implementation; it also consists of the new legal instruments adopted by the Contracting Parties.

The Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft and the Protocol concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency were adopted in 1976 and have since been ratified by all 18 Mediterranean coastal States and by the EEC. The Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources was adopted in 1980 and has since been ratified by 15 Mediterranean States and by the EEC. The Protocol concerning Mediterranean Specially Protected Areas was adopted in 1982 and has since been ratified by 16 Mediterranean States and by the EEC. A draft Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf and the Sea-bed and its Subsoil is being negotiated.

Actions pending in the legal field include the formulation and adoption of appropriate procedures for the determination of liability and compensation for damage resulting from the pollution of the marine environment deriving from violations of the provisions of the Convention and Protocols (as called for by Article 12 of the Convention).

With few financial means and some scientific or technological shortcomings, the Contracting Parties have made significant progress in protection of the Mediterranean basin despite of their widely varying development levels, and different economic, social, political and cultural structures.

Considerable progress has also been made on environmental issues concerning the Mediterranean basin in general, especially in identifying problems related to the marine environment and investigating solutions. Success has been achieved in solving some of the problems, and in the search for a long-term inter-relationship between environment and development.

(c) Activities and achievements

1. Monitoring and control of pollution

A Mediterranean co-ordinated pollution monitoring and research programme (MED POL) was launched in 1975 as part of the Mediterranean Action Plan. At present, more than 100 marine research laboratories

participate in it under the joint scientific supervision of UNEP, WHO, FAO, UNESCO/IOC, WMO and IAEA.

The coastal States and the European Community have progressively adopted common parameters for monitoring, analytical and sampling techniques and data reporting formats. They have also established programmes for training, provision of laboratory equipment and supplies. In addition, a comprehensive data quality assurance programme was launched in order to enable all the countries to participate in MED POL and submit reliable data.

2. Corrective measures adopted

These measures range from outright prohibition of discharges, to emission standards, environmental quality criteria or other actions of a technical or educational nature. The Mediterranean States have unanimously adopted a wide range of measures in each of these categories, in particular:

1. Interim Environmental Quality Criteria for Bathing Waters (1985);

2. Interim Environmental Quality Criteria for Mercury (1985);

3. Measures to Prevent Mercury Pollution (1987);

4. Environmental Quality Criteria for Shellfish Waters (1987);

5. Measures for Control of Pollution by Used Lubricating Oils (1989);

6. Measures for Control of Pollution by Cadmium and Cadmium Compounds (1989);

7. Measures for Control of Pollution by Organotin Compounds (1989);

8. Measures for Control of Pollution by Organohalogen Compounds (1989);

9. In 1989 it was agreed to amend the Dumping Protocol in order specifically to ban ocean incineration activities in the Mediterranean;

10. Full adoption of the precautionary approach with regard to the prevention and elimination of contamination (1989);

11. Commitment to take all necessary measures for the protection of *Posidonia oceanica* and other phanerogams meadows which are vital to the Mediterranean Sea ecosystem, particularly with regard to trawling (1989).

Furthermore, by 1995, measures will have to be prepared, reviewed and adopted for all the other substances appearing in the Black and Grey Lists of the Land-based Protocol, in accordance with a calendar for the implementation of the Protocol adopted in 1985.

3. Co-operation in Cases of Emergency

Conscious of the serious threat to the Mediterranean environment from accidental pollution by oil or other harmful substances, involving ships or other offshore installations the coastal Mediterranean States, through MAP/Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), located in Valletta (Malta), co-operate in marine pollution preparedness and response with a view to intervening against such types of accident.

The principal objective is to facilitate co-operation among the States Parties to the Protocol in cases of emergency and to undertake pollution response preparedness activities, in particular, regarding mutual assistance operations.

As part of the development of a Regional Information System, the Centre collects, disseminates and updates the information necessary to initiate mutual assistance operations, notably data concerning the responsible national authorities, equipment, experts and companies offering services.

In addition, States that so requested were helped to develop national contingency plans and to prepare bilateral operational agreements. A training programme and exercises to test the regional communication system to ensure the transmission, reception and dissemination of alerts and information concerning accidents involving oil and other harmful substances were developed. Operational arrangements and guidelines aimed at facilitating mutual assistance among the Parties to the Protocol were prepared.

4. Coastal zone management

Experience has shown that the major causes of marine pollution originate on land and are due to improper management of coastal areas and large river basins.

In the Mediterranean, the priority areas of concern to all coastal States were identified as early as 1977 and the Regional Activity Centre for the Priority Actions Programme, located in Split, (Yugoslavia), was set up to link national institutions in a series of networks for each component: water, soil, aquaculture, coastal historic settlements, seismic coastal areas. This has resulted in a pooling of experience to be used to develop an endogenous capability and national self-reliance.

On the basis of currently available data on marine pollution and pollution abatement technology and in order to promote application of the common measures in specific coastal areas, the Mediterranean coastal States decided to refocus their programme on the planning and management of coastal areas.

This refocussing was started in a few representative areas proposed by the countries concerned and accepted by the Contracting Parties. These at present included the Bay of Kastela at Split, Yugoslavia, the Bay of Izmir, Turkey, the island of Rhodes, Greece, and the Syrian coast. Preparatory work has also begun in the area of Fuka/Marsa Matruh, Egypt, and Sfax, Tunisia. In each area, a co-

ordinated programme is agreed upon with the national and local authorities to strengthen local capabilities, mobilize national investment and attract further international co-operation. For example, the World Bank and the European Investment Bank have agreed to co-ordinate their efforts in three out of the four coastal area programmes approved.

All the efforts described are aimed at identifying and combating existing pollution and they constitute remedial action taken to correct decades of neglect.

In addition to fragile coastal zones, protection of coastal areas also includes the cultural heritage. In 1987, following preparatory work by UNESCO and the International Council on Monuments and Sites (ICOMOS), the Mediterranean States together identified "100 historic coastal sites of Mediterranean interest". Co-operation commenced within the framework of a "network" of managers of the sites, co-ordinated by a team based in Marseille. The work encompasses inter alia degradation of stonework, problems due to excessive numbers of tourists, and multilingual information. It seeks to ensure appropriate training and to protect marine and underwater archaeological sites.

5. Priority Actions Programme

The Priority Actions Programme was established in Split (Yugoslavia) in 1980 to promote sound environmental management by offering practical guidelines for dealing with priority environmental problems. These may include the implementation of demonstration and pilot projects and the establishment of specific management programmes for coastal zones.

The fields of activity selected for the programme were those deemed to represent best the common experience and needs of Mediterranean countries and therefore most likely to stimulate technical co-operation and exchange of know-how among them.

For example, within the Priority Actions Programme:

- guidelines are being prepared for integrated planning and management of coastal zones, including management tools such as application of the Geographic Information System (GIS) and a simplified approach to environmental impact assessments for projects affecting the coastal and marine environment;

- case studies and a methodological approach to planning, designing and implementation of rehabilitation projects in Mediterranean historic areas have been prepared;

- missions to specific countries were undertaken on the subject of water resources development for islands and isolated coastal areas;

- meetings and seminars have been held on land-use planning in earthquake zones, development of aquaculture, and carrying capacity assessments of tourist establishments.

- potential applications of renewable sources of energy have been identified, with particular emphasis on solar energy;

- improved methods of disposing of solid and liquid waste and soil erosion measurements have been proposed;

6. Protected areas and endangered species

Another aspect related to coastal zone management concerns protected areas. In order to promote the objectives of the Protocol concerning Specially Protected Areas, the Regional Activity Centre for Specially Protected Areas, located in Salammbo (Tunisia), assisted the coastal States in implementing the Protocol through the preparation and adoption of Guidelines for the Selection, Establishment and Management of Protected Areas, Action Plans for the Conservation of Mediterranean Marine Turtles and Monk Seals, and the identification and protection of at least 50 new marine and coastal areas or reserves of Mediterranean interest.

Training programmes for experts in this field have also been carried out. Finally, a network of managers of protected areas is being developed.

7. Climatic Change

The problem of the implications of climatic change on the Mediterranean region was studied by the task team. Following sixteen reports, which included six site-specific case studies and an overview, an assessment of the problem was prepared and proposals for future strategies were made. Further work includes development of computerized scenarios of local changes in temperature and precipitation patterns, preparation of four site-specific case studies as part of comprehensive coastal management projects and study of the problem of increased carbon dioxide emission due to energy production.

8. Toxic waste

A new problem that has recently come to light is the transboundary movement of toxic waste, which can be curbed only through international co-operation and the reduction of waste at source.

At their Sixth Ordinary Meeting (October 1989), the Contracting Parties addressed an appeal to countries that had not yet done so to become signatories to the Basel Convention on the Control of Transboundary Movement of Hazardous Wastesand to accelerate its ratification. They invited the Secretariat to prepare within six months an assessment of the nature of such movements in the Mediterranean, including the carriage of hazardous wastes by ships transiting the Mediterranean Sea. They also requested the secretariat to propose a mechanism to assist Contracting Parties in monitoring the movement of hazardous waste in and through the Mediterranean and its disposal, and, in the light of the assessment, to proceed with the preparation of a draft legal instrument or a protocol on the subject applicable to the Mediterranean region.

9. Airborne Pollution

It is recognized that a significant portion of the pollutant load entering the Mediterranean Sea is transported from land-based sources via the atmosphere. Airborne pollutants of major concern include heavy metals, chlorinated and petroleum hydrocarbons, and radionuclides. Atmospheric transport modelling suggests that the emission sources for some pollutants are quite distant, while coastal areas are also affected by local sources. The estimates made by the World Meteorological Organization on the basis of the most recent studies show that the atmospheric input into the Mediterranean Sea for some elements or compounds is at least comparable in magnitude to riverine inputs.

II - MEDITERRANEAN PROSPECTIVES AND ENVIRONMENTAL POLICY

Mediterranean co-operation as it has developed over the past 15 years, mainly within the MAP framework, is of interest to the global community, not only because it is an example of solidarity among the 18 States with regard to the current environmental situation, but also because these States and the European Community from the beginning decided to situate their action within the long-term prospective (Horizon 2025) and to undertake international commitments over several years.

All MAP's components have contributed to clarifying the inter-relationship between environment and development in the Mediterranean context and have identified specific lines to be pursued in research and monitoring, training, investment and exchange of knowledge. At Genoa in 1985, the Contracting Parties undertook ten-year commitments to fix objectives. Their action with regard to the future has been taken up by other bodies: at Nicosia in 1990 with the participation of the Commission of the European Communities and its Mediterranean partners, at Palma de Mallorca recently within the framework of the CSCE, and by the Union of the Arab Maghreb (UMA). These examples are only some among many in international bodies concerned by the Mediterranean, for example, the World Bank and the Council of Europe.

(a) Interaction between environment and development: Blue Plan's contribution

In the spirit of the 1992 Rio Conference, one of MAP's most relevant activities is the focus on the "integrated socio-economic planning" dimension and the mutual relationship between environment and development in the long-term prospective and in the light of various alternative solutions. That approach is exceptional in the world today.

In 1978, MAP launched what is called the "Blue Plan", which consists of an analysis through the Regional Activity Centre for the Blue Plan, located in Sophia Antipolis, (France), of the environment-development relationship in the future, taking the year 2025 as the horizon. This is the first exercise in the world undertaken in a clearly defined area encompassing 18 States with a total population of 380 million, on the basis of the situation of their natural resources.

A number of reports have been issued on subjects such as fresh water resources, industrial growth and industrialization strategies, energy, population movements, urbanization, rural development, tourism, inter-Mediterranean influences, and others.

This activity resulted in a warning that if the tendencies of the last 20 to 30 years were not modified, in 45 years from now 95 percent of the coast may be urbanized and the Mediterranean basin may have to support more than 500 million inhabitants and 200 million tourists, with 150 million cars. Each year, these people will eat 45 million tons of meat and 250 million tons of cereals, and energy and fertilizer consumption will be multiplied by five or six.

This prospective study has enabled a set of realistic scenarios to be elaborated for sustainable, integrated, social and economic development of the Mediterranean basin, and their analysis from the environmental aspect.

Scenarios have been prepared for three levels of consideration: global, sectoral and sea/littoral. These have been of two types: "trend" scenarios view the future of the Mediterranean based on extrapolation from past data, and "alternative" scenarios explore the consequences of various development policies. These "alternative scenarios" implied a strengthened environmental protection policy and, above all, its more effective integration in development and land-management policies. A number of important gaps have been noted in the following fields: control of urbanization, production and transport activities, and the need for more sewage treatment plants.

(b) Orientations for future action

The Mediterranean Action Plan through the work of its components, has allowed Mediterranean partners to consider together a number of methods of action. Some of these concern the States and decentralized agents, while others are more directly related to Mediterranean co-operation; only the latter will be mentioned here:

1. Reduction of Pollution

One of the main future targets should be the reduction of pollution in the Mediterranean from land-based sources and maritime transportation.

2. Advancement of knowledge

In the area of data and statistics, the activity led to recommendations that greater attention should be paid to environmental data and the use of new techniques such as remote sensing.

Without an active policy on inter-Mediterranean dissemination of knowledge, the gaps between northern and southern Mediterranean countries in the fields of biotechnology applied to agriculture, for example, may become wider.

3. Co-operation in environmental management

- Coastal management

  Co-operation could be implemented, where appropriate, through comparative studies, on management methods, regulations, legal and financial protection mechanisms (coastal land trusts, for example). Further co-operation among those responsible for coastal regions would be extremely useful in this respect.

- Urban management

  In 2025, more than 150 million Mediterranean people will be living in cities in the Mediterranean region (90 million in 1990). Exchange of experience among professionals could mainly focus on the creation of new cities and the management of peripheral areas.

- Water resource management

  For Mediterranean countries, the precariousness and irregularity of water resources constitutes a real obstacle to development. A network of water resource managers would be useful.

- Forestry management

  Co-operation in this field would be very beneficial in the following areas: maintenance and experimenting of multiple use agro-forestry stable systems, management and protection of watersheds and multiple-use forestry management.

- Management of protected areas

  The rich genetic heritage of the Mediterranean region in wild species, is gravely endangered. The protection of coastal and marine regions would benefit from the establishment of a network of managers of parks and reserves, in particular, biosphere reserves (MAB/UNESCO).

- Management of living marine resources

  Although they are not very large, the Mediterranean's living resources could usefully contribute to increasing the food self-sufficiency of some coastal countries if they were exploited rationally so as to be sustainable.

4. Co-operation in appropriate technology

The establishment of new industrial installations in the south and east of the Mediterranean basin, in particular, will rapidly lead to a demand for precautions to be taken in connection with installation, recycling and anti-pollution measures. It would also be useful to exchange "appropriate technology" tools and processes introduced into the

industrial process thereby permitting economic benefits, reduction of waste, savings in materials and energy and reuse of by-products.

5. Co-operation in risk management

- Loss of the genetic heritage

Domesticated breeds of cattle, sheep and goats in the Mediterranean are today only 10 per cent of those a century ago; a number of tree and plant varieties traditionally used for food are also rapidly disappearing. Energetic action is called for.

- Natural hazards

Solidarity in this respect can be particularly effective because neighbouring countries can be affected by the same hazards. The comparative studies on seismic hazards carried out in the region under the auspices of UNESCO, UNDP and PAP should be extended. Likewise, the work done on drought and agroclimatology offers an important opportunity for regional co-operation. Soil degradation, erosion and desertification in the Mediterranean are priority concerns.

- Technological hazards

In this field, co-operation could focus on preventive techniques and practices, the identification of and trade in new products, especially pesticides, the adoption of relevant legislation, measures to be taken in cases of emergency, and transfrontier co-operation among local communities. The progress of some industrialized countries and the European co-ordination already commenced could be used for the benefit of coastal States as a whole. The extension of the Malta Centre's responsibilities is in accordance with this consideration given to new hazards for the prevention of maritime accidents. Among the first priorities, in particular, as far as training is concerned, are co-operation in industrial waste management, especially toxic waste (destruction, transport, storage, retreatment, etc.). The organization of regular contacts among industrialists would be very beneficial, in liaison with public authorities.

(c) International Commitments and other initiatives for the Mediterranean

In the spirit of the United Nations General Assembly resolutions on environment and development, the Mediterranean States have on several occasions expressed, their strong determination to reinforce their co-operation to protect and enhance the Mediterranean environment. In international texts, they have concretely declared their strong determination to place their decisions in the context of the medium-term and long-term future.

1. Genoa Declaration on the second Mediterranean decade

In 1985, in Genoa, the Contracting Parties to the Barcelona Convention outlined major objectives for the coming decade. These "action targets" are a catalyst for every State and for Mediterranean solidarity. They also constitute a reference point for other international bodies such as the World Bank and the European Investment Bank.

The ten priority targets are the following:

- establishment of reception facilities for dirty ballast waters and other oily residues received from tankers and ships in Mediterranean ports;

- establishment, as a matter of priority, of sewage treatment plants in all cities around the Mediterranean with more than 100,000 inhabitants and appropriate outfalls and/or appropriate treatment plants for all towns with more than 10,000 inhabitants;

- use of environmental impact assessments as an important tool for ensuring appropriate development activities;

- co-operation to improve the safety of maritime navigation and to reduce substantially the risk of transport of dangerous toxic substances likely to affect the coastal areas or induce marine pollution;

- protection of endangered marine species (e.g. Monk Seal and Mediterranean Sea Turtle);

- concrete measures to achieve substantial reduction in industrial pollution and disposal of solid waste in the Mediterranean;

- identification and protection of at least 100 coastal historic sites of common interest;

- identification and protection of at least 50 new sites or marine and coastal reserves of Mediterranean interest;

- intensification of effective measures to prevent and combat forest fires, soil loss and desertification;

- substantial reduction in air pollution which adversely affects coastal areas and the marine environment with the potential danger of acid rain.

2. Nicosia Charter on Euro-Mediterranean environmental co-operation

The Nicosia Charter, adopted in June 1990, is different, having brought together in its elaboration the Commission of the European Communities and 12 Mediterranean coastal States. The Charter defines priorities for action, situating them on the 2025 Horizon, based on solidarity among States and with the Commission of the Communities, and

involving major financial institutions - the World Bank and the European Investment Bank. It would interest the international community to know that the partners clearly state that they intend to "evaluate regularly and every two years the results of the EuroMediterranean co-operation for the environment, and this before the United Nations Conference on Environment and Development, that will take place in 1992, with a view to presenting a common subregional proposal at this Conference".

The fundamental objective of the Nicosia Charter is defined as achieving in the Mediterranean basin an environment compatible with sustainable development by the year 2025. For this purpose, Mediterranean States undertake:

A. to provide the appropriate environmental institutions with well-defined management powers and an adequate financial autonomy;

B. to elaborate and adopt environmental management strategies as an integral part of the socio-economic development of the countries;

C. to establish an integrated legislative and regulatory framework that preserves the environment and takes into account international commitments, as well as to ensure its enforcement;

D. to implement environmental impact assessments of development projects;

E. to adopt economic and fiscal incentives and disincentives, as well as administrative measures to improve the integrated management of the environment;

F. to take action to limit population growth in the coastal zones;

G. to accelerate the preparation of the Protocol of the Barcelona Convention dealing with the environmental implications of the exploration and exploitation of the continental shelf and the sea-bed.

They also agreed to carry out the following priority actions:

- identification of coastal zones to be protected by 1993;
- new installation of sewage treatment plants by 1995 for 10 million inhabitants, 25 of them with Community aid;
- creation of 25 controlled waste dumps for industrial products;
- establishment of reception facilities for dirty ballast waters in 20 ports before 1993, etc.

3. Final document of the meeting of the Conference on Security and Co-operation in Europe (CSCE) on the Mediterranean held in Palma de Mallorca

A CSCE meeting on the Mediterranean was held in Palma de Mallorca in September/October 1990. The meeting's final document recognized the need to ensure the ecological stability of the Mediterranean region through the protection and improvement of its ecosystems, and to integrate environmental considerations into economic and social policy and decision-making, thereby contributing to sustainable development. It was also stressed that the marine and watercourses environment and terrestrial ecosystems in the Mediterranean region had become so fragile that increased efforts were required in different fields, namely, protection of the sea, water resource conservation, prevention of air pollution, sound waste management, the fight against forest fires and desertification, protection of biological diversity, development of environmentally sound tourism, and amelioration of the environment, including the cultural heritage.

It should also be noted that the Final Document made a positive reference to the activities of MAP, the Barcelona Convention and its related protocols, while it welcomed the Environment Programme for the Mediterranean initiated in 1990 by the World Bank and the European Investment Bank.

4. Other international activities

Concern regarding the relationship between environment and development has been expressed by many organizations over the past decade. Some are regional organizations such as the Union of the Arab Maghreb (UMA) which for some time has been elaborating programmes for the five countries of the Maghreb; the same is true for the Ligurian Sea, where France, Monaco, and Italy are co-operating within RAMOGE.

Another positive example may result from the co-operation between Yugoslavia and Italy in protection of the Adriatic, which revolves around a joint programme of pollution reduction, involving an exchange of experiences, the securing of funding and strengthening of institutional structures. In addition to this, co-operation in the environmental protection in the Adriatic is envisaged at the quadrilateral level among Italy, Yugoslavia, Greece and Albania. Other parties, including the European Commission, might also take part in this "Adriatic initiative".

(d) Conditions for effective development of Mediterranean co-operation

A significant reduction of Mediterranean pollution through the application of common standards and quality criteria requires investment and financial incentives and disincentives that cannot be mobilized within the existing budgetary structures of the Mediterranean Action Plan.

The notion of the Mediterranean as a common sea for which common policy and investment plans should be developed is not yet widely accepted. New sources of financing, based on those economic activities that directly benefit from it (tourism, fisheries, shipping), will have to be considered.

Turning to the preventive steps, more integrated planning of development efforts, joint ventures, optimal use of natural and manpower resources on a basin-wide scale, hold the key to reducing the environmental impact while increasing economic activities. For this to happen appropriate forums or networks will have to be created. The Mediterranean Action Plan, whose structures have been progressively stretched to cover water and soil, aquaculture, historic centres and protected areas, will have to be reviewed and strengthened. Even so, it cannot become a substitute for multilateral political dialogue, greater interplay with the Community institutions, a more generous flow of bilateral resources, with an expanded role for the non-governmental and voluntary organizations integrated in the effort.

The geographical proximity of the 18 countries concerned, the common nature of the problems faced, the existence of a rich technological pool and capacity for innovation make the Mediterranean basin the foremost region where a new environment/development equilibrium can be achieved. It can serve as a testing ground for ideas and solutions from which other areas in the world could benefit.

Above all, it will be watched as an indicator and a test case. If the challenge cannot be met in the Mediterranean, many other regions of the world that are poorer in many respects and subject to graver environmental threats, past and present, stand no chance of achieving that equilibrium.