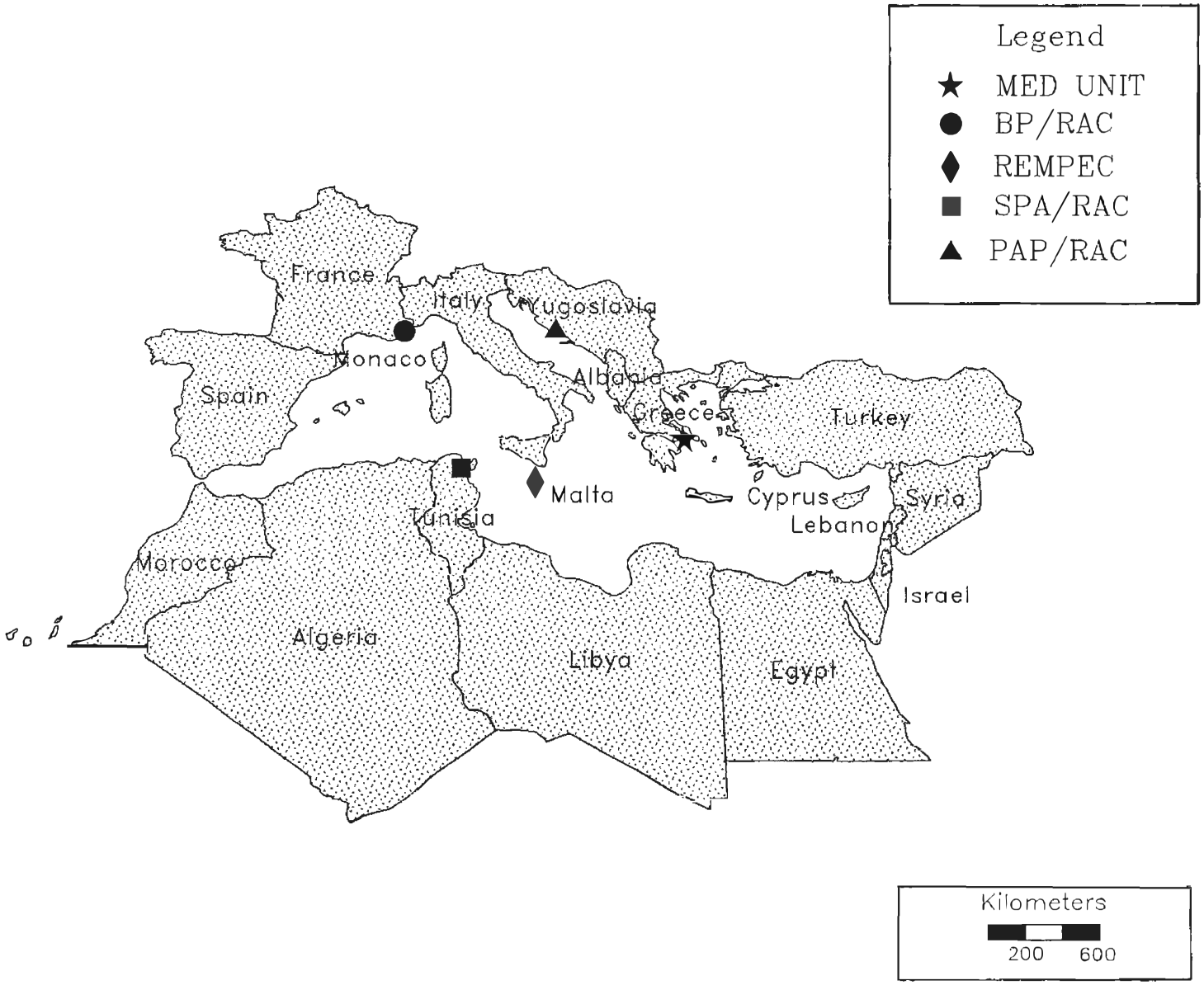
UNITED NATIONS ENVIRONMENT PROGRAMME

THE MEDITERRANEAN ACTION PLAN

Saving our common heritage

UNITED NATIONS

Mediterranean Action Plan



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" ..... when several countries share a common resource on which their life depends to a large extent and which is threatened, they come to realize that none of them can solve such a problem alone at national level. They realize that whatever they do to protect the area they have in common - a lagoon, a sea - would not be at all effective if their neighbours did not take similar measures to improve the situation .....

Mostafa Kamal Tolba
UNEP Executive Director

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FOREWORD

It has been more than 20 years that we have known it : the Mediterranean is seriously threatened and has become fragile. There is perhaps no other area in the whole world where nature has so lavishly bestowed its gifts to Man. The mildness of its climate, the purity of its landscapes, its extraordinary position at the crossroads of three continents have fascinated people, both those that lived here and those than came as conquerors. Man in return has founded on its shores many civilizations that have left an indelible mark on history. However, the 60's brought to the Mediterranean industrialization, demographic pressure, urbanization and, more so here than to other places, very rapid tourist development. The holiday postcard with its golden sand and the blue colour of both the sky and the sea has gradually been replaced by a darker image which may spell for our children and grandchildren the end of the idyllic picture. Upsetting images keep haunting us : birds trapped in a black oil spill, forests that go up in smoke, rubbish on beaches or accumulating on the seabed, fish victims of eutrophication, sun eclipsed by smog in the modern urban sprawls. The constant repetition of such images has made us believe that we bring about our own destruction. Just a short while ago, environmental protection was the concern of just a few; it has now become everybody's concern, from the political leader to the man in the street. The theories and conclusions formulated in scientific colloquia immediately become common knowledge; sometimes they even give rise to fantastic stories. The greenhouse effect, the hole in the ozone layer, and toxic wastes vie for first place in the headlines with military conflicts, economic crises and other spectacular news. Our perception of the Mediterranean environment has completely changed.

What is not widely known is that environmental degradation in the area would be a lot more serious and, in many respects, irreversible if the countries around the Mediterranean had not committed themselves in 1975 to work together to combat the different forms of pollution and to control development. This form of cooperation launched and promoted under the aegis of The United Nations Environment Programme (UNEP) has kept the name it was originally given, the Mediterranean Action Plan (MAP). Today, there are eleven similar plans around the world launched in other regional seas under the sponsorship of UNEP, but MAP remains an example for many reasons : its solid legal framework adopted in Barcelona in 1976 and, since then, complemented by new Protocols, the diversity of its components and its dynamic Activity Centres, the protection measures taken by all parties involved and the prospective work to the year 2000 and 2025 horizons and finally the first field activities to manage its coastal areas.

Away from the spotlight of the mass media and the commonly adopted gloomy attitude, the 18 Coastal States and the European Economic Community (which borders the Mediterranean through 4 of its Member States) have, over the years, patiently woven the threads of their cooperation. Over 100 laboratories participating in the MED POL Programme have tracked down, identified and attempted to understand better both the sources of pollution and the processes which take place in the sea, the soil and the air. Work of this type enabled us to draw up a picture of the state of the marine environment, a prerequisite for any sensible action. The first measures

were adopted in 1985 : standards, quality criteria, guidelines. The result was improvement in certain critical areas. For example, the number of clean beaches where swimming is safe increased, as more and more waste treatment plants and submarine outfalls were put into operation. Within MAP, most decisions are taken unanimously, which in itself is remarkable in a region characterized by political disputes, economic, social and cultural differences. In the Mediterranean today, environment is the only area of multilateral cooperation among governments : the challenge that it represents bridges the gaps. This is something that helps the people around the Mediterranean build their common future. The knowledge acquired and the work accomplished since MAP was set up are considerable. The sea that in the beginning of the 70's was pronounced "dead or dying" proved, when carefully examined, to possess considerable resistance (although certainly not unlimited) against our aggressive behaviour. We know now that we can help the Mediterranean survive, if we willing to pay the price and continue working together towards a common goal. The environment cannot be our dumping ground; it reacts and evolves, in a complex way, like any other living organism. This reality can be summed up as "managing the unpredictable". Environmental protection is like fighting the Lernaean Hydra : the minute one problem is solved or nearing a solution, another one appears. Wastewater treatment plants are set up, but solid waste accumulates. Planning the sustainable development of the coast is proceeding smoothly, but the possibility of climatic change and sea level rise forces us to rethink the whole matter.

An overview of the state of the environment in the region and of the Mediterranean Action Plan - its history, functions, mechanisms, applications, and perspectives - is presented in the pages that follow. It is not a rosy description of imaginary victories against pollution in the area. Environmental protection must be based on honest information. An inaccurate picture, either overly optimistic or overly pessimistic, would have the same net result : those willing to work are discouraged in the long run. The Mediterranean Action Plan has had successes, but there is still room for improvement. Nor can it be by itself the magic cure for all the ills plaguing the Mediterranean. Its relatively modest budget ensures the coordination that all the Mediterranean countries wish, through technical and administrative support; it is not meant to replace national action. The commitments undertaken by the States, and the measures that they adopt are only as good as the compliance that each shows by putting its own house in order. That in turn means large investments. The cost of a treatment plant for a medium- sized city amounts to about one-third of MAP's annual budget. Thus, it is obvious that the developing countries of the South and East of the Mediterranean do not have the financial resources of their industrialized partners of the North. Recommending the transfer of technology is one thing, implementing it is quite another. More compelling forms of solidarity must be found soon, through innovative institutional and financial mechanisms. MAP is an excellent tool for that. The Mediterranean, by its composition, and its North-South distribution, is a microcosm of the Planet. It is almost designed as a model and has played a pioneer role since the signing of the Barcelona Convention. Those living around it or who come as visitors will have to realize that they must join forces to help it survive. And this is another lesson that we have learned through the 17-year experience of MAP : that the battles fought by experts and by national and local authorities for the protection of the Mediterranean environment cannot be won unless a well- informed public gives them its active and enthusiastic support.

I. THE STATE OF THE MEDITERRANEAN ENVIRONMENT : PROBLEMS AND CHALLENGES

In order to understand the motivation of the Coastal Mediterranean States to adopt the common Action Plan, it is important to highlight the special features of the region and outline the most threatening problems for the sea and the coast. Obviously a "still" image of the environment cannot be drawn up. Development continues unabated, aggravating the pressures, making the concentration of certain pollutants reach critical levels and bringing about new challenges that the whole world faces, such as climatic change and toxic waste disposal. Therefore the degradation of the Mediterranean environment must be placed within the framework of accelerated, but still hypothetical, evolution of the basin.

1. THE PHYSICAL AND HUMAN FRAMEWORK

The Mediterranean Basin has been the cradle where sprang and flourished sometimes in succession, sometimes in conflict, some of the most remarkable civilizations in history. Those civilizations, even when they became extinct, continued to complete and enrich one another bringing about a "distinct and regional identity" which is seen in the living styles of the people and their temperament which, because of scarcity of resources, is frugal; on the other hand the sea which is ever present makes men excellent mariners and tradesmen; Man and Sea have patiently chiselled together a unique and varied landscape.

A UNIQUE GEOGRAPHIC POSITION

In the era of the global village, where does the Mediterranean begin and where does it end? It may sound like a simple question, but the answers vary according to the criteria used : olive tree cultivation, climatological, hydrographical and sociocultural criteria have all been used. Its borders must be extended when one considers pollution. Even if the Mediterranean is primarily polluted by the countries around it, the origin of a problem may be found much farther afield because of the pollutant loads brought to it by rivers and the atmosphere. The Rhone originates in Switzerland but flows into the Golfe du Lion, the Nile gathers the waters of Northeast Africa before it reaches Egypt and the Mediterranean and the forests of Dalmatia are ravaged by sulphur dioxide brought down from Central and Western Europe.

The crossroads of the world, the Mediterranean, located between three continents and two oceans, can put the blame for part of its degradation on the rest of the world. Twenty percent of world oil transits through its waters. And what about the 100 million tourists who rush to the beaches year after year? They are all potential polluters regardless of whether they

come from Tokyo, New York, Stockholm or a nearby village a few kilometres inland. Environmental law is just starting to envisage the problems caused by such international promiscuity.

In terms of the Barcelona Convention, the Mediterranean Sea area means the maritime waters of the Mediterranean Sea proper, including its gulfs and seas, from the Straits of Gibraltar to the Straits of the Dardanelles. It does not include therefore the Sea of Marmara and the Black Sea. The Coastal States are 18, and all participate in MAP (along with the EEC, also a party to the Convention) : Albania, Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Spain, Syria, Tunisia, Turkey and Yugoslavia[1]

A LARGE VULNERABLE LAKE

The etymology of its name gives us a good clue. From Latin *medius* and *terra,* the word Mediterranean means "surrounded by land". And that's exactly what we see when we look at the World Atlas and the image that the satellites orbiting the earth send us day after day. The surface of the Mediterranean is only 0.7% of the total surface of the world seas and oceans. It is almost an enclosed sea; its waters are renewed every 80 to 90 years from the Atlantic surface water through the narrow Gibraltar Straits. Only 75% of what is lost through evaporation is compensated by rainfall and river inputs. This enclosed sea is further subdivided by the Iberian, Italian and Balkan Peninsulas, by the Anatolian Plateau and the string of islands from the Balearics to Cyprus into a series of smaller seas or "basins" : Tyrrhenian, Adriatic, Ionian, Aegean, Levantine. Weak tides are good for navigation but bad for dispersion of pollutants near the coast. Generally speaking, the fact that the Mediterranean is an enclosed sea is the most important factor affecting pollution, and makes more difficult the "self-cleaning" of its waters.

FORESTS, BEARS AND LYNX

Most of the area around the Mediterranean is mountainous and fragmented except for the Southeastern coast and the Egyptian-Libyan coast, where the Sahara table comes directly to the sea. The close contact of sea and mountains has had considerable effects : large plains are rare, the agricultural resources limited, and man has to wrest from the soil. Between the 10th and the 2nd millennium B.C., the region was covered by thick forests in which bears, lynx, wild cats and antelopes lived. Rock paintings found in the Sahara show that the prairie reached that region and that cattle were raised there. Man's intervention to alter the Mediterranean ecosystem is very old. Most crops and plant species considered "typical" of the region - cypress, eucalyptus, fig tree, orange tree, tomato, aubergine, etc. - were gradually imported over the centuries. Successive peoples settling in the area practiced heavy thinning of the forests for heating, construction, shipbuilding; the forests were also cleared, burned by shepherds, or suffered from overgrazing. The long declining of the forest, aggravated recently by devastating forest fires, led to a new type of vegetation of small trees, the maquis, which in turn becomes garrigue and badlands. Today forests cover only 5% of the land area. The scant vegetation of

(1) Official list in force at the time of the Seventh Ordinary Meeting of the Contracting Parties (Cairo, October 1991).

the Southern and Southeastern Mediterranean coasts is eaten up by desertification; thousands of hectares are lost each year due to human and climatological factors.

A DOUBLE-EDGED SWORD

The Mediterranean is the only sea in the world to have given its name to a type of climate, with hot and dry summers and mild and humid winters. That partly explains the attraction of the coast, even though that is a recent phenomenon. Until the end of the 19th Century, the coast was considered as a hostile, unhealthy environment (marshes) open to the dangers of the high seas, the pirates, the conquerors, the settlers. It was in the 20th Century in just a few short decades and mostly after World War II, that the coast became industrialized and urbanized. The Mediterranean that until then had maintained the balance between Man and Nature, became "a sea beset with problems". All the projections of the Blue Plan underscore the seriousness of this upheaval. By the year 2025, the population of the coastal regions from 133 million in 1985 will reach between 195 and 217 million (up 45 to 62%). The rate of urbanization which is currently a little over 61%, will reach between 74 and 78%. In terms of jobs, housing, education, health, transport, it will all amount to a real challenge at the level of coastal management. These projections must be completed by the projections concerning tourism : the 100 million tourists (both foreign and national) that come to the beaches year after year will become, by the year 2025, according to the increased scenario, 170 to 340 million. The impact will be felt in the allocation of space, the production of solid and liquid wastes and the depletion of fresh water resources. They in turn may bring about social problems, tensions and conflicts. The response differs depending on whether the countries belong to the North or to the South and East of the Mediterranean : the former face stagnation and ageing of their populations, the latter a demographic boom with an increasing share of the young people aged 15 or younger (more than 40% now, versus 20% for the North); that in turn leads to continuing urbanization and extension of the big cities like Algiers, Alexandria, Cairo, Izmir, Istanbul on the one hand and the multiplication of medium-sized cities on the other. If this trend is not controlled, the pressure in the labour market, in housing and all the public services is going to be tremendous.

2. THE PROBLEMS

To the demographic difference one must add the disparity in economic development, where the same North-South gap is found. Between 1945 and 1985, spectacular industrialization rates were achieved mostly in the North. Three industrialized countries account for 85% of the manufacturing capacity of the whole area : France, Italy and Spain. Despite the ever stricter control measures being taken, these countries account for 3/4 of the industrial pollution in the Mediterranean. The other countries with medium or low level of industrialization pollute proportionately more because of the too high (for them) cost of

applying adequate standards of emissions and pollutant discharges.

COASTAL AND MARINE POLLUTION

The sea has always been the dumping ground for the wastes generated by human activities, but pollution only started reaching threatening proportions in the industrial era. The marine environment is polluted by municipal and industrial effluents, agricultural run-off, deliberate or accidental discharges from ships, garbage originating in the sea or on land and by pollutants transported through the atmosphere, having originated as emissions from activities on land. About 500 rivers flow into the Mediterranean, some of which drain vast agricultural and industrial regions (Ebro, Rhone, Po, Nile). The pollutant load they carry is higher than direct dumpings from the coast.

• Urban and industrial waste

A very large proportion of it is still dumped into the coastal waters untreated. Industrial effluents contain heavy metals which, once they reach the sea, can pose health problems because they go up the food chain and contaminate fish and shellfish. Mercury has been strictly controlled because of its toxicity, the fact that there are natural deposits in the area, and because it is used in industry. Urban sewage brings bacterial and viral pollution to seawater and causes various diseases (typhoid, hepatitis, gastro- enteritis, etc.) contacted either by seawater ingestion or direct contact (skin ailments) during swimming. Some countries of the Northern Mediterranean now treat 50% of their urban sewage and that is translated into a distinct improvement of their beaches in the last few years.

• Eutrophication

The mass media have made us all familiar with images of coastal waters choked with a gelatinous mass where hundreds or thousands of dead fish float. This phenomenon, called eutrophication, is caused by excessive concentration in the sea of nutrient salts brought down by agricultural run-off and rivers (phosphates and nitrates of fertilizers, urban sewage, detergents). These nutrients, through their decay, cause the proliferation of the microscopic algae (phytoplankton) which consume all the oxygen available in the water : fish and crustaceans all die because of lack of oxygen. Eutrophication phenomena are common in the deltas of the large rivers (Po, Rhone, Ebro) and in the bays which receive large amounts of untreated sewage. In the Northern Adriatic, these "red tides" have in the past years had a serious impact on tourism and fishing and led the Italian and Yugoslav authorities to take appropriate measures. Italy has launched an ambitious programme of treating the waters of the Po river.

• Oil and its derivatives

220,000 ships over 100 tons cross the Mediterranean each year. 20% of the international oil traffic transits through 0,7% of the earth's seas which is the surface of the Mediterranean. Despite the fact that the MARPOL Convention was put into force, the Mediterranean remains

polluted by deliberate discharging of ballast waters. A total of 0,5 to 1 million tons of oil are discharged in it each year, one fourth of which is due to municipal and industrial wastes (used oils). About 10 accidents at sea (collisions, explosions, ships running aground) occur annually and account for smaller quantities of oil dumped into the sea (between 60,000 and 80,000 tons). The Mediterranean has so far been spared a large oil spill, but the danger is always there. In addition to the environmental impact (which could depend on the ecological vulnerability of the area affected), such a spill would have serious economic consequences through its negative impact on tourism.

- **Plastics and other rubbish**

This very ugly form of pollution is very difficult to quantify. Rubbish thrown overboard by crews, left behind on beaches by tourists, or dumped illegally , ends up floating on the sea or clogging the seabed or littering beaches often quite far from where it originated. This form of solid pollution is gradually becoming a very serious problem because of the time that it takes to disintegrate (up to 450 years for a plastic container) and the threat it represents to marine animals (like turtles) that get tangled in it (nets, packing material) or ingest it (styrofoam).

THE DEGRADATION OF MARINE AND COASTAL RESOURCES

Marine pollution very seriously affects fishing stocks already threatened by excessive fishing. The waters of the Mediterranean are normally poor in nutrient salts and thus poor in fish. The region imports 40% of its needs in fish. The gradual destruction of the Posidonia beds is a matter of concern : Posidonia is a marine plant specific to the Mediterranean which, in nearshore waters up to 35-40 m in depth, forms oases for marine life; 400 plant species and 600 very diverse animal species use the beds as refuge, habitat and breeding grounds. Posidonia also protects the coast by stabilizing a sandy bottom through the net of its rhizomes. The Posidonia beds are directly threatened by coastal projects such as dikes and marinas, by dredging activities and by pollution which, by increasing the turbidity of the water, deprives the beds of light or intoxicates them. Concerning coastal wetlands (marshes, lagoons) any drastic human intervention has an impact on the very rich flora and fauna, especially the migratory birds which live there during certain seasons or stop to rest on their journey between Africa and Europe, like waders and ducks.

WATER SHORTAGE

It has been chronic or permanent in the countries of the South of the Mediterranean, but water shortage through depletion or contamination of resources is reaching certain areas of the North because of demographic and tourist pressures aggravated by periods of drought. Three Mediterranean countries use more water than can be replenished by their resources (Malta, Libya, Israel); some others (Tunisia, Egypt, Syria) are reaching a critical point; they will all have to make greater use of unconventional water resources and methods (desalinization, fossile water, imports). Water shortage may become a crucial problem in the near future, because it

gives rise to conflicts and tensions among States for the exploitation of common resources.

MORE PROFOUND CAUSES OF PROBLEMS

We have just given an overview of some forms of pollution affecting the region; however, there are also problems, the complexity of which cannot be covered by simple facts : contamination of marine sediments, aquifers and living organisms by chlorinated pesticides and polychlorobiphenyls, atmospheric pollution affecting large urban areas (car emissions, industrial emissions, heating) or far away places (loads of chromium, mercury, lead and certain pesticides transported to the sea through the air), salinization of irrigated soils, desertification, etc. The direct causes of pollution are well known today; they can be detected and identified through sophisticated and reliable methods. But a detailed study of the situation in the Mediterranean region brings to light the more profound causes of the problem : inadequate development policies which do not take into consideration environmental impact, laws and regulations that are either inadequate or not enforced, administrative overlap or conflict in terms of the environment, lack of adequate equipment and trained personnel to monitor pollution. It is in all these areas that the cooperation among Mediterranean States has started to bear fruit.

3. THE NEW CHALLENGES

Environmental sciences have in the last 10 years brought to light phenomena that are widely discussed today because they require of society to make dramatic choices. This is the case of the "hole in the ozone layer", an international problem by definition, which led to the adoption in 1987 of the Montreal Protocol with a view to reducing the production of the substances involved. Concerning the problems of climatic change and the elimination of dangerous waste, they too are global but must be tackled at regional level.

CLIMATIC CHANGE : TO MANAGE THE UNCERTAIN

The probability of an increase in temperature through the "greenhouse effect", caused by the concentration in the atmosphere of gases resulting from human activities, will have a serious impact on the Mediterranean since it will be accompanied by a sea level rise which will directly threaten certain parts of the coast. Climatic change is a very complex problem when one envisages all the ramifications, but it becomes even more complex for the fact that we ignore both the rate and the extent of the change. Some scientists even go so far as to believe that it will not occur. But, if it does, it must be factored in right now in development strategies. In other words, decisions must be taken on the basis of scientific data that are not solid yet. Generally speaking, the conclusions of the first studies carried out within the framework of MAP/UNEP in the Mediterranean can be summarized as follows:

- If one assumes a temperature rise of 1.5°C by the year 2025 with an accompanying sea level rise of 20 cm, extreme events (droughts, floods, storms, etc.) would become more frequent;

• Non-climatic factors (population increase, current development plans) will make the Mediterranean peoples, especially those in the South, more vulnerable to climatic pressures;

• Most of the lowland delta areas (Ebro, Rhone, Po, Nile) already face serious environmental problems which will be aggravated by adverse socio- economic conditions which will add to the impact of climatic change;

On a more concrete level, this would mean for the Nile delta for instance in the next 100 years a coastal recession of 30 km, i.e. the disappearance of a coastal strip which represents 10 to 15% of the GNP, 15% of cropland and 20% of the Egyptian population. Climatic change would be, for the whole Mediterranean Basin, a deep transformation of its physical and human geography. To control its impact would be an immense task which would go beyond the regional framework and would imply international solidarity and consultation.

TRANSPORT AND ELIMINATION OF HAZARDOUS WASTE

Transport and evacuation in inadequate conditions of dangerous substances pose a problem for the region which goes on worsening. The Mediterranean, one of the centres of "transboundary movements" of hazardous waste by means of which the industrialized countries try to unload at low cost dangerous substances by shipping them off to the developing countries, has had several cases of ships going from port to port in search of a place to unload their dangerous cargo. The Basel Convention, adopted in 1989 by 115 countries, has been an important step in regulating this kind of commerce. Eight Mediterranean countries have signed it; the African Mediterranean countries abstained because they deemed the Convention inadequate to protect them from the threats looming over their continent.

Waste traffic is but one aspect of the more general problem of hazardous waste. The 1976 Seveso accident made a very profound impression on the public opinion of the European and Mediterranean States; it led to the study on the prevention of industrial accidents which in time was translated into the relevant EEC Directive. New technologies are being developed which may be less polluting in the classical meaning of the word, but more polluting in novel ways which would require the definition of a specific code of conduct : the release into the environment of molecules or micro-organisms produced by biotechnology could have an impact which would be more insidious and more difficult to control than the actual pollutants.

II. THE MEDITERRANEAN ACTION PLAN

1. THE HISTORY OF MAP : THE LONG PROGRESS OF THE COASTAL STATES

FROM STOCKHOLM TO BARCELONA, THE FOUNDING YEARS

Built around a simple idea, to save the Mediterranean, MAP is today a well structured unity of components, activities programmes, institutional and financial mechanisms. It is not full of red tape : the Athens Unit which has the task of coordinating Mediterranean cooperation, has remained a light structure of less than 10 experts, while the teams of the 4 regional centres are even smaller. The Action Plan has in the course of the years reflected the increasing complexity of the problems of environmental protection.

After World War II, a long period of indifference set in, with the exception of the concern over a possible nuclear conflict; it wasn't until the end of the 60's and the beginning of the 70's that the long spell was broken. The awakening to the threats looming over the planet was formalized in June 1972 in Stockholm with the United Nations Conference on the human environment. Six months later, the United Nations Environment Programme (UNEP) is born with headquarters in Nairobi, Kenya. From then on, progress is faster, UNEP takes the decision to encourage the conclusion of regional agreements and the Mediterranean is taken as the object of a multi-faceted process which leads to the development of a specific Action Plan by the governments concerned, and by involving the other organizations of the United Nations System which already had experience in their respective areas (FAO, UNESCO, IOC, IMO, WHO, IAEA). It is at the conclusion of this in-depth study that 16 of the 18 Mediterranean Coastal States invited by UNEP convened in Barcelona in 1975 to adopt an Action Plan which would be the framework for their cooperation in the future. However, without a solid legal basis, the best intentions may lead nowhere. A year later, Barcelona hosts the plenipotentiaries entrusted by their respective governments to undertake formal commitments. Three instruments are adopted : the Barcelona Convention, the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft, and the Protocol concerning cooperation in Combating Pollution of the Mediterranean Sea by Oil and other harmful substances in cases of emergency. What do the Coastal States pledge to do? According to Art.5 of the Convention, from which the other regulations ensue, they pledge "to take all appropriate measures to prevent, abate and combat pollution in the Mediterranean Sea area and to protect and improve the marine environment in that area". The legal framework of the Convention is flexible to allow for future technical protocols and amendments and to adapt thus to the realities in the future. The participation of the EEC in the 1976 Barcelona Conference is the logical conclusion of the legal status of its Mediterranean Member States (France and

Italy, joined in 1981 by Greece and in 1986 by Spain), which delegated to it specific mandates in the field of environmental protection.

FROM BARCELONA TO GENOA, THE EXPLORATION YEARS

After Barcelona, the Mediterranean countries waste no time in putting together a practical plan to translate into action the principles and objectives they adopted in the legal texts. The Emergency Protocol becomes concrete through the setting up in Malta in 1976 of the Regional Oil Combating Centre (ROCC, today REMPEC). MAP's "scientific evaluation" component gives rise to the launching of MED POL "the coordinated programme of pollution monitoring and research", the largest effort of collection and analysis of data on pollution ever carried out at regional level. The real situation of the marine environment is clarified, revealing the large contribution to its pollution of land-based sources; this leads to the adoption, in May 1980 in Athens, of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources, with its "black" and "grey" lists of substances to be eliminated or strictly controlled. Concerning the "Integrated Development Planning and Management of Resources" component of MAP, it becomes concrete through the launching of two large programmes: the Blue Plan, a prospective study of the Mediterranean Basin hosted by France in Sophia Antipolis, and the Priority Actions Programme headquartered in Split, Yugoslavia. In April 1982, a new Protocol concerning Mediterranean Specially Protected Areas is adopted in Geneva. Thus the network of regional centres is completed with the Tunis Centre of the Specially Protected Areas. The Central Unit, established in Geneva in 1980 and moved to Athens in 1982, and its small team, form the nucleus around which five networks now develop a specific aspect of the Programme each; the liaison with the Mediterranean States is ensured by the "Focal Points". The first decade of cooperation is undoubtedly dominated by MED POL. The data sent to the Athens Unit make possible the first assessments which are indispensable for pollution control. When the Mediterranean States and the EEC meet again in Genoa in 1985 for their biennial meeting, they are cognizant of the fact that the time for decisions has come and that they must translate the Barcelona commitments into concrete actions. They adopt the first anti-pollution measures (quality of bathing waters, mercury) and the "Genoa Declaration" which encompasses certain important goals to be achieved in the future. The message is clear : the effort must be intensified and accelerated, so as not to be overcome by the problems accumulating.

FROM GENOA TO RIO, THE YEARS OF REFOCUSING

New sets of measures to combat pollution were adopted in the meetings of Athens (1987, 1989) and the one in Cairo (1991). In the meantime, new concerns appear on the world scene and have an impact on the Mediterranean Action Plan. The need to complete the legal arsenal of Barcelona had always been in the thinking of the Mediterranean governments. The considerable pollutant load transported through the atmosphere is the object of a fourth annex to the Land-based Sources Protocol adopted in October 1991; the 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 Sub-soil is drafted and debated beginning in 1990, while a new legal instrument concerning the transboundary movements of hazardous wastes is being considered. The work accomplished within the MAP framework has an ever growing impact on other bodies as is clear from the final Declaration of the Conference on the Security and Cooperation in Europe (CSCE) at Palma de Majorca in October 1990. However, because the Programme is now quite large, there is the risk to spread itself too thin. That is why, beginning in 1987 on UNEP's instigation, a new concept inspires the philosophy of Mediterranean cooperation : the refocusing of all the activities on integrated coastal planning and management. Rather than being an innovation, it is a return to the origins of MAP to mobilize all its components towards concrete actions called "Coastal Areas Management Programmes" (CAMPs) long-term Mediterranean cooperation schemes. This form of cooperation has had, like all human endeavours, its highs and lows, its share of wranglings and stormy discussions on a budget that is quite modest, some ulterior motives of a political nature disguised as environmental idealism. For all that, however, the cooperation hasn't stopped going forward and sweeping along in its wake those that lagged behind. Albania thus adhered to MAP in 1990, so that all the countries that had been convened by UNEP to Barcelona in 1976 are now participating. Twenty years after Stockholm, the Mediterranean countries and the EEC could go to Rio de Janeiro in June 1992 to present to this World Environment Summit a full dossier where the topic chosen for the Conference - Environment and Development - figures as one of their prime areas of reflection and intervention.

THE GENOA DECLARATION (1985):
THE TEN PRIORITY OBJECTIVES TO BE ACHIEVED BY 1995

Ten years after the adoption of their Action Plan in 1975, the Mediterranean Coastal States and the EEC have reaffirmed their will to cooperate, have decided to intensify their efforts, launched an appeal to the 350 million people living in the Coastal States and to the 100 million tourists visiting the region, to commit themselves to protecting it, and decided to launch a new phase of their common effort by adopting the following 10 priority objectives to be achieved in their second decade:

- *Establishment of reception facilities for dirty ballast waters and other oily residues received from tankers and ships in ports of the Mediterranean;*
- *Establishment as a matter or 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;*
- *Applying environmental impact assessment as an important tool to ensure proper development activities;*
- *Cooperation 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 the 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;*
- *Identification and protection of at least 100 coastal historic sites of common interest;*
- *Identification and protection of at least 50 new marine and coastal sites or reserves of Mediterranean interest;*

- *Intensify 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 rains.*

2. DISTRIBUTION OF ROLES

The Mediterranean Action Plan is one of the largest international programmes in the environmental field, and involves the interaction of eighteen countries and the EEC, practically all the major Organizations of the United Nations System, four Regional Activity Centres, a growing list of Non- Governmental Organizations and a vast number of scientists, engineers, economists and other professionals from all the Mediterranean countries, as well as some from outside the region.

In their capacity of Contracting Parties to the 1976 Barcelona Convention, the Mediterranean Governments and the EEC designated (Article 13) the United Nations Environment Programme as responsible for carrying out the Secretariat functions associated with the Convention and its protocols, including the convening and preparing of meetings and conferences, the transmission of notifications, reports and other information, the performance of functions assigned to it by specific protocols, and the maintenance of the necessary coordination with other competent international bodies.

Apart from this, UNEP also acts as the Coordinating Agency for the whole of the Mediterranean Action Plan, of which the Barcelona Convention and Protocols as such form only one component. The other two major components - Environmental Assessment and Environmental Management - not only provide the tools for effective implementation of the Convention and Protocols, but also enable the Mediterranean States to go well beyond those legal provisions in order to rehabilitate and enhance the environment of the region. Up to the end of 1978, the main financing was provided by the Environmental Fund of UNEP. From 1979 onwards, it is provided by contributions from the Mediterranean States, which are paid into a special fund - the Mediterranean Trust Fund - established for this purpose. The Executive Director of UNEP has been formally assigned the task of administration and management of this fund by the Contracting Parties.

THE CONTRACTING PARTIES TO THE BARCELONA CONVENTION

In their capacity of Contracting Parties to the Barcelona Convention and Protocols, the Mediterranean States and the EEC are, jointly, the final decision-makers within the framework of the Mediterranean Action Plan. They meet regularly at high (often Ministerial) level every two years. During these meetings they not only consider, and adopt wherever appropriate, amendments and additions to protocols and joint measures to be undertaken within their framework, but also review progress in the programme's implementation and discuss and approve the workplan and budget for each forthcoming biennium. This budget is the

component paid into the Mediterranean Trust Fund through country contributions on the basis of the general UN scale of assessments, together with voluntary contributions by the EEC and some countries. In addition, other components not featured in the approved budget include counterpart contributions from countries hosting regional activity centres, UN and other Agencies and, more recently, donor institutions such as the World Bank and the European Investment Bank.

Prior to adoption of workplans and budgets for each biennium, the Ordinary meetings of the Contracting Parties are preceded, earlier in the year, by meetings of two Committees - the Scientific/Technical Committee and the Socio-Economic Committee. Both of these consist exclusively of representatives formally nominated by the Mediterranean Governments and the EEC. They discuss and review each activity and its budgetary implications in detail prior to submission to Contracting Parties' meetings for final discussion and adoption.

To facilitate contacts between country authorities, national institutions, and the Secretariat, Contracting Parties have officially designated National Coordinators or Focal Points for each component of the Programme. These meet regularly once every two years (during the mid-term of each biennium) to review progress in each separate programme component.

At each Ordinary (biennial) meeting of Contracting Parties, a four- member Bureau, consisting of a President, two Vice-Presidents and a Rapporteur, is formally elected. The Bureau holds office for two years, until the beginning of the next Contracting Parties' meeting, and itself meets at six-month intervals to review progress and to deal with such specific matters as may be entrusted to it by the Contracting Parties.

UNEP AND THE MAP COORDINATING UNIT (MEDU)

Within the general hierarchy of UNEP, the Mediterranean Action Plan falls under the Organization's Oceans and Coastal Areas Programme Activity Centre (OCA/PAC), which is located at UNEP/HQ, Nairobi. Up to 1980, the MAP was run by this Department, at the time termed the Regional Seas Programme, from its office in Geneva. An ad hoc Coordinating Unit for the Mediterranean Action Plan was established in 1980. From the beginning of the programme in 1975, the Mediterranean States had expressed the view that its "headquarters" should be located in a Mediterranean city. Athens was formally selected by the Contracting Parties in 1981, and the Coordinating Unit moved there on 1 July 1982.

The Coordinating Unit is, in general terms, responsible for coordination of the whole Action Plan and, in addition, for the actual implementation of those components (mainly the Environmental Assessment Component - MED POL) which have to be centralized. More specifically, the Coordinating Unit:

- performs all the Secretariat functions assigned to UNEP by article 13 of the Barcelona Convention;
- organizes preparations, including the necessary documentation, for meetings of

Contracting Parties, Committees and other ad hoc meetings;

- prepares the necessary work-programmes and budgets for each biennium;
- coordinates the activities of the various Regional Centres;
- coordinates, organizes and implements the MED POL programme. For this reason, the two UN Agencies (FAO and WHO) which, apart from UNEP, are the most heavily involved in MED POL, have full-time staff in the Coordinating Unit;
- ensures the necessary coordination with other UN Agencies and other Organizations involved in the programme;
- collects, prepares and disseminates information both for the scientific community and for the general public.

REGIONAL ACTIVITIES CENTRES

Under the supervision of UNEP and the Athens Unit, each one of the regional activities Centres carries out the workplan assigned to it by the Contracting Parties' meetings which corresponds to a MAP component : Emergency intervention against accidental marine pollution, Blue Plan, Priority Actions Programme, Specially Protected Areas, Historic Sites. The activities of the Centres are described in detail in the following section.

INTERNATIONAL ORGANIZATIONS

In accordance with its mandate and established policy, UNEP works in close cooperation with several Specialized Agencies of the United Nations System; each of them is assigned the technical responsibility for those activities falling within its recognized areas of competence.

The International Maritime Organization (IMO) is directly responsible for the management of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), located in Malta.

The Food and Agriculture Organization of the United Nations (FAO) is directly responsible for those activities directly affecting living marine resources, as well as effects of pollution on natural marine communities and ecosystems.

The World Health Organization (WHO) is responsible for the health- related aspects of the programme, including the monitoring of pollution at source, various aspects of waste management, and quality control of microbiological data.

The Intergovernmental Oceanographic Commission (IOC) of UNESCO is responsible for the oceanographic activities performed in the programme, including pollution modelling and pollutant transport. UNESCO itself is also involved in the preservation of historic sites.

The World Meteorological Organization (WMO) is responsible for activities related to atmospheric transport of pollutants.

The International Atomic Energy Agency (IAEA), through its Marine Environment Laboratory (MEL, formerly ILMR) in Monaco, is responsible for quality control of chemical analytical data, as well as for the operation of a maintenance service for equipment supplied to national laboratories.

Apart from allocations made to them from the Mediterranean Trust Fund for the costs of staff working exclusively on the programme, and for activities, all the above Agencies contribute substantially in cash and kind from their own resources.

Other UN Organizations which are involved in specific MAP activities from time to time are the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), the World Tourism Organization (WTO) and the United Nations Economic Commission for Europe (ECE).

Outside the UN family, the World Conservation Union (IUCN) is involved in the management of the Regional Activity Centre for Specially Protected Areas (SPA/RAC) located in Tunis.

The World Bank and the European Investment Bank have long had an interest in programmes and projects on the Mediterranean Environment. Financial support to specific MAP activities is now being provided by both through their Mediterranean Environment Technical Assistance Programme (METAP), which is contributing significantly to quality control. They have now started to co-finance activities within MAP's Coastal Areas Management Programmes (CAMPs).

NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

There is a large number of non-governmental organizations active in the Environmental field, and their influence has increased during recent years. Several of them enjoy Observer status with a number of UN Organizations. Mediterranean Governments have acknowledged the support of NGOs in the 1985 Genoa Declaration. Although the Mediterranean Action Plan is a programme formally sponsored by, and responsible to, Governments, NGOs can play, and are playing, a significant role. Since 1989, a number of them participate as observers in MAP meetings at both technical and political (Contracting Parties) level. Independently of this, on the initiative of the European Environmental Bureau (EEB), they have developed a common contribution at Mediterranean level for submission to the United Nations Conference on Environment and Development (UNCED), to be held in Rio de Janeiro in June 1992. The links MAP is developing with NGOs are ensuring complementarity in activities, and the field activities sponsored by NGOs, such as beach cleaning drives, reafforestation campaigns, etc., are affording a valuable contribution to the overall objectives of MAP.

THE SCIENTIFIC COMMUNITY

During the last fifteen years, several hundred scientists from all Mediterranean countries have participated, and are actively participating, in the Mediterranean Action Plan. In this

context, the role of UNEP and the UN Specialized Agencies is to coordinate, organize and advise. The actual field and laboratory work is performed by the scientific community of the coastal countries. The main objective of MAP, particularly in the MED POL component, is to enhance the capabilities of local institutions and personnel to tackle their own problems. This is proving to be a great success, particularly in the developing countries of the region where, fifteen years ago, the need was greatest. The interaction between MAP and the Mediterranean scientific community is one of mutual benefit. All the data acquired by MAP have been painstakingly collected by scientists and technicians in national institutes. On its own part, MAP has played a significant role in bringing together scientists from different Mediterranean countries at meetings and training courses, and has provided the opportunity not only for personal contacts, but also for joint, as opposed to individual, approaches towards the identification and solution of common regional problems.

3. ACHIEVEMENTS

What is the real state of pollution in the Mediterranean? When in 1975 the Coastal States started to take active measures to save their common sea, this was the fundamental question to which an answer had to be provided. Very little solid information existed during that time. What existed was extremely pessimistic estimates, often far from the truth. For most contaminants, the data available were fragmentary, collected at sporadic points and not throughout the region, and analyzed by different methods; therefore they could not be compared and collated in order to draw valid conclusions. The results of pollutant measurements depend greatly on the sampling and analytical techniques utilized, the quality of laboratory equipment and materials and the competence of staff using them. Results can be affected by even minor errors in laboratory techniques. All this assumes particular importance when one is dealing with very small concentrations of pollutants.

THE MED POL PROGRAMME

When UNEP and the UN Specialized Agencies started to develop the Environmental Assessment component of the Mediterranean Action Plan, it was realized that many more data on the state of pollution of the sea had to be obtained and, moreover, such data had to be accurate. The first phase of the MED POL Programme, operational between 1975 and 1981, originally consisted of seven pilot projects designed to provide a preliminary picture of the situation, to form the basis for future large-scale monitoring programmes, and to lay down a foundation for action-oriented research. Three other pilot projects were added shortly after the programme began.

More than 200 scientific teams from 83 institutions in 16 Mediterranean countries participated in this first stage of MED POL. Though many of the projects provided overall results which were not representative of the whole region because of the geographical

imbalance of participating institutions, the programme provided a wealth of extremely useful data and, perhaps even more importantly, an enormous amount of experience on which to base the next phase of the programme.

The Long-term Programme of Pollution Monitoring and Research in the Mediterranean Sea (MED POL Phase II) came into operation in 1982. It comprises three main components: Monitoring, Research, and activities for the progressive implementation of the 1980 Athens Protocol on pollution from land- based sources. All three components are closely interlinked and mutually supporting.

The objectives of the monitoring component of MED POL are to assess the effectiveness of control measures and to determine, on a permanent basis, the state of pollution in the Mediterranean. These objectives are achieved through the implementation of national marine pollution monitoring programmes. For this purpose, the Action Plan assists participating laboratories to enable them to strengthen their capabilities. In most countries, this is done through the signature of an overall agreement between the UNEP Coordinating Unit and the National Authorities, including detailed workplans. Activities performed within this framework cover the monitoring of recreational and shellfish waters and a number of edible marine organisms. A further aspect recently introduced consists in the monitoring of pollutants entering the sea through the atmosphere.

Practically every country in the Mediterranean has today a national marine pollution monitoring programme in various stages of operation. The improvement, particularly in the developing countries of the region, has been enormous. However, there is still a long way to go. In many countries, whole infrastructures had to be created, laboratories built and equipped, and the necessary manpower developed. In this context, the assistance provided by MED POL can only be considered as an incentive, and as a moral support to countries.

The research component of MED POL is designed primarily to support the monitoring programme, and to provide further knowledge on the basis of which more accurate assessments of the state of pollution of the Mediterranean can be made, and the necessary remedial or preventive measures developed.

Research projects are submitted as proposals by interested national institutions, and evaluated by UNEP and the various UN Agencies. Once accepted as MED POL projects, they receive a modest degree of assistance. There are currently nearly 120 research projects ongoing, and new ones are commencing as fast as others are completed.

Activities for the progressive implementation of the Land-based Sources Protocol include pollution assessment and management guidelines. Assessments of the state of pollution of the Mediterranean Sea by each of the individual substances or group of substances listed in the Annexes to the Protocol, are prepared, normally at an average rate of two per year, in accordance with an approved calendar and time-table. Twelve assessments have already been

completed and, in most cases, proposals for appropriate measures, prepared on the basis of such assessments, were eventually agreed on, and adopted, by Mediterranean States.

Apart from these assessments, this component of MED POL involves the preparation of guidelines on various aspects of waste management as listed in Article 7 of the Protocol. Guidelines approved for preparation deal with authorizations for discharge of liquid wastes, outfall structures for small and medium-sized communities, treatment requirements for effluents containing substances listed in the Protocol's annexes, and alternative products and processes.

Although the MED POL programme, the current phase of which has been extended to 1995, receives, as a single component, the largest proportion of the total Action Plan's budget, these resources fall far short of what is required, considering the size and extent of MED POL and the requirements and demands it has to fulfil, even at the "incentive" level of assistance. One new avenue is the recent support being given to MED POL by the World Bank, particularly in the provision of equipment to laboratories and in quality assurance.

DATA QUALITY ASSURANCE

Determination of concentrations of pollutants in seawater, seafood, effluents or sediments, has the express objective of providing the relevant authorities with the data on the basis of which they can take a decision. Such decisions (as in the case of a polluted beach or contaminated seafood) usually carry economic repercussions. Data must therefore be accurate and, in the case of marine pollutants, particularly chemical pollutants, concentrations normally encountered (even under "unacceptable" conditions) are so small that relatively minor errors can distort the result to the extent that a wrong decision, one way or the other, would be inevitable.

One of the main objectives of MED POL has always been the improvement of data quality. During the first phase of MED POL, it became obvious that results reported by different laboratories were not comparable due to the heterogeneous conditions under which they had been obtained, and intercalibration exercises (analysis of the same sample by a number of laboratories and evaluation of data received) showed considerable variation. Furthermore, there was a need to enhance the absolute quality of data received and, as early as 1976, the International Laboratory of Marine Radioactivity (ILMR) of International Atomic Energy Agency (IAEA), located in Monaco, was entrusted with the organization of a systematic programme on the control of data quality.

It has organized several intercalibration exercises among the laboratories participating in the MED POL programme. This was performed mainly by the preparation of reference samples containing known concentrations of chemical pollutants, distribution of these among laboratories and comparison and evaluation of data reported by these laboratories. These exercises, along with their follow-up to investigate the reasons for deviation, has considerably enhanced the quality of Mediterranean data. In 1987, ILMR, whose name was changed to the Marine Environment Laboratory (MEL), designed and implemented a Quality Assurance Programme covering all stages necessary to obtain reliable data, including a continuous feedback process to the individual analyst. An MEL Specialist visits laboratories regularly, providing all the advice necessary, and setting up and supervising procedures in each laboratory, whereby internal control of the data quality through comparison with specially-prepared reference samples can be carried out. MEL also provides a maintenance service for Mediterranean laboratories, whereby a specialist pays visits to repair and upgrade analytical equipment in response to specific requests.

A similar programme has been carried out by WHO from its Project Office within the Coordinating Unit for the Mediterranean Action Plan in Athens, in the field of microbiological analysis of seawater and shellfish.

In this particular case, in view of the impracticability of distributing microbiologically-contaminated samples of seawater through the region, intercalibration has been performed by bringing together a number of scientists from different countries to one laboratory, where each scientist analyses the same sample under the same conditions. WHO has also assisted in the technical organization of national courses, and has prepared standardized guidelines for monitoring of recreational and shellfish areas, as well as methods for determination of all the major bacterial indicator organisms, which are kept continuously updated.

The effectiveness of measures taken to prevent and control pollution will depend greatly on the continuation of this quality assurance programme.

THE MOST TANGIBLE RESULTS OF MED POL

The pollution control measures adopted by the Mediterranean countries

One of the most tangible results of MED POL is evidenced by the series of measures jointly adopted by the Mediterranean States since 1985 to prevent and control marine pollution on the basis of MED POL assessments. These measures are the following:

1. Interim Environmental Quality Criteria for Bathing Waters (1985). *Provisional measures for a transition period to ensure a minimum common standard.*

2. Interim Environmental Quality Criteria for Mercury (1985). *Establishment, if national circumstances so require, of standards for maximum concentrations of mercury in seafood.*

3. Measures to Prevent Mercury Pollution (1987). *Emission standards (upper limits of concentration) for mercury in all effluent discharges into the Mediterranean Sea.*

4. Environmental Quality Criteria for Shellfish Waters (1987). *Minimum common standard, expressed as faecal coliform concentration in shellfish, for acceptable quality of shellfish waters.*

5. Measures for Control of Pollution by Used Lubricating Oils (1989). *Progressive measures leading to elimination of these substances in discharges by 1 January 1994.*

6. Measures for Control of Pollution by Cadmium and Cadmium Compounds (1989). *Emission standards (upper limits of concentration) for cadmium in effluent discharges. Adoption in principle of a water quality objective.*

7. Organotin Compounds (1989). *Prohibition of these compounds in antifouling paints used on boats less than 25 metres in length, and on all mariculture structures or equipment.*

8. Organohalogen Compounds (1989). *Environmental quality objective with regard to DDT concentrations in coastal waters. Use of the FAO International Code of Conduct for Pesticides.*

9. Organophosphorus Compounds (1991). *To reduce inputs into the marine environment, and progressively achieve elimination of hazardous compounds by the year 2025.*

10. Persistent Synthetic Materials (1991). *Agreement that all Mediterranean countries should ratify Annex V of the MARPOL 73/78 Convention. Carrying out of surveys. Design of educational programmes. Use of biodegradable materials.*

11. Radioactive Substances (1991). *Agreement to respect pertinent international recommendations on emissions of radionuclides. Reporting of annual amounts released.*

12. Pathogenic Microorganisms (1991). *Acceleration of implementation of parts of 1985 Genoa Declaration regarding adequate sewage treatment and disposal in coastal towns. Devotion of more care to proper hygienic quality of beaches.*

CLIMATIC CHANGES : THE WORK OF THE TASK TEAMS

We have already referred to the conclusions of the studies on the impact of climatic change on the region (cf. Section I.3). Let us now mention the work accomplished by the Task

Team set up for the Mediterranean as for other maritime areas of the world. In a meeting held in Split in 1988, the various Task Teams had the opportunity to exchange preliminary views on their work. Working assumptions and projections have since been refined and the scope of repercussions extended. Recommendations of measures addressed to the political authorities have been drafted. Teams have also been set up at sub- regional and local levels to study implications of future climatic change in the most vulnerable areas of the Mediterranean: deltas of the rivers Rhone, Po, Ebro and Nile, the Thermaikos Gulf, Lakes Ichkeul/Bizerte, Island of Malta and the Cres/Losinj islands. By the same token, to each Coastal Areas Management Programme (Island of Rhodes, Kastela Bay, Izmir Bay, Syrian coast) a task team has been set up, and the conclusions of its work must be integrated in the general study of the site. Results and conclusions of the work of the Task Team, including case studies, were presented at international meetings (Singapore, Nov.1990 and Venezuela, March 1992). The scenario of regional changes in climate in the Mediterranean Basin, due to global greenhouse gas warming, was developed by the Climatic Research Unit of the University of East Anglia and has been published in May 1992. The book on the implications of climatic change in the Mediterranean region should be published soon by Edward Arnold Publications.

THE MALTA CENTRE (REMPEC) : ASSISTANCE TO INTERVENTION IN CASES OF EMERGENCY

When in 1975, the Coastal States considered setting up a regional oil combating centre, they proved their will to pool forces to combat accidental hydrocarbon pollution and assist one another in catastrophic events. Given the world oil tonnage that moves through the area, and the fact that the Mediterranean occupies a key location between the oilfields of the Middle East and the industrialized countries of Western Europe and North America, it is obvious why the Mediterranean is more likely than any other sea in the world to suffer from massive spillages. Vigilance should always be exercised and the level of preparation must be adequate in order to intervene rapidly and effectively even at the slightest alert from any part of the Basin.

When the Centre was put into operation in Malta in 1976, only France and Italy had the means for actual oil spillage combating. The question was, should ROCC (the Centre's previous name) be given adequate means to become an operational structure at regional level? This seemed an unrealistic option. The approach adopted (as in all regional agreements) was to pool all the resources together in case of a major spill. To this effect, the Coastal States - and most of all the developing ones - needed assistance in the form of information, training and technical aid to develop their own capabilities to handle emergency situations. Thus the Malta Centre was assigned the following priority objectives:

- to facilitate the cooperation among the States, coordinate their efforts in combating a spill if they asked for assistance and to communicate to them all pertinent information needed to that effect;

- to assist those States that requested it in developing their own intervention capability,

especially in setting up their national contingency plans.

Managed by the International Maritime Organization (IMO), the Malta Centre was at first financed by UNEP. Since 1979, financing has been ensured by the Mediterranean countries themselves, through the Mediterranean Trust Fund. The Centre has been active in putting together a regional information system. It publishes and disseminates a series of documents updated regularly : a manual on combating oil spills, an inventory of companies in the Mediterranean to deal with an emergency, a catalogue of products commercially available to fight an oil spill, a list of alerts and accidents, etc.

In 1989, the Centre's mandate was enlarged to encompass dangerous substances other than oil hydrocarbons, which brought about the change of its name. This involved a refocusing of its activities to develop its own capabilities to match its new mandate.

We see therefore that, even if REMPEC does not intervene directly in the operational sense of the word, it nonetheless gives technical advice and facilitates and coordinates mutual assistance in emergency situations in the Mediterranean. The Coastal States are under obligation to notify it of all pollution incidents and of the characteristics of the spillages identified. REMPEC has been the crucial link in several accidents that occurred in the last years and the States have decided to upgrade its communications system.

Information and aid for the preparation of national contingency plans are completed by a third essential element: training. Training courses, seminars and sets of lectures are organized each year in Malta or in another Coastal State to train staff competent in dealing with emergency situations. Thus the countries that the Centre has assisted in developing their contingency plans are also gradually acquiring the manpower to implement them.

THE SOPHIA ANTIPOLIS CENTRE (BLUE PLAN) : THE EXPLORATION OF POSSIBLE SCENARIOS

The name Blue Plan should not be taken literally. It is not a "Plan" in the narrow sense of the word and it is not really "Blue" since it concerns the land rather than the sea. This large-scale exercise, decided at the intergovernmental meeting of Split in 1977, and hosted by France at Sophia Antipolis near Nice, aims at defining the options for sustainable development in the future for the Mediterranean Basin; it takes into consideration the interactions between populations, resources, environment and development and their impact on the waters, the coast and the hinterland. It is a prospective and systematic approach to obtain an instrument to explore the interactions between development policies and environmental conditions.

What was original, even unique, in this was that it was not meant to collect passively and collate information and views from the outside, from committees and study groups. On the contrary, the work was carried out by the Mediterranean scientists themselves in close cooperation with the Coastal States. It is a prospective, dynamic study, within a flexible framework (that takes into account national particularities), open to all areas of development,

action-oriented, which does not "dictate" measures, but encourages governments and other officials to take measures by showing them how the problems of each country are integrated in the collective Mediterranean reality.

There are three phases in the Blue Plan:

• The first, launched in 1980 after three years of preparation, involved exploration, stock taking and data collection in order to draw a synthesis of the relationships and trends between economic activities and the physical and human environments. All Coastal States were involved in this phase;

• The second phase, between 1984 and 1987, entailed prospective studies properly speaking, i.e. the development of scenarios for the Mediterranean future to the years 2000 and 2025;

• Finally the third phase, currently in progress, consists in putting together the various activities reports, national reports and scenarios and in formulating the appropriate conclusions and orientations to help decision-makers in Coastal States in planning and implementing their plans for sustainable development in their respective countries.

In 1988, the main Report was submitted to the Governments for adoption. It is divided into five parts : geographical setting, scenarios with a selection of working assumptions, economic activities and their impact on the environment, protection of the Mediterranean ecosystems and synthesis and guidelines for action. To dispel right from the start any misunderstanding as to its use, the Report states in the Foreword that "the visions outlined here are not intended as easy recipes for action". Rather it opens avenues for all those whose task it is to reflect about and take decisions on the future of the Mediterranean. One of the main merits of the Report is that it makes clear that the problems of development, resources management and environmental protection are different for the countries of the North and the countries of the South and East of the Basin.

The publication of the Blue Plan Report was greeted by the international press as an example of innovation and reference, since it was the first time that countries in the same region had reflected together on their common future. It has had a commercial publication in French (Editions Economica) and translations into three other languages : English (Oxford University Press), Spanish (Ministry for the Environment of Spain) and Arabic (Editions Edifra). The Report has been completed by the following publications:

• A synthesis Report, a summary of the Main Report in 4 languages;

• Specialized brochures on particular themes that the Main Report had only touched upon ("Fisheries and Aquaculture", "Forests", "Preservation of Mediterranean ecosystems", "Industry and Environment", "Islands", "Water", etc.).

Obviously, the publication of the Main Report does not conclude the exercise. Since 1989,

the staff of Sophia Antipolis, while integrating into a more permanent framework their tasks of observation and evaluation of the Mediterranean environment, applied the methodologies developed previously to refocusing MAP. For that purpose they participate in the various Coastal Areas Management Programmes (CAMPs) and help in the formulation of coastal scenarios for each area under study. Moreover, the Blue Plan needs to be constantly re-examined and updated as new data are collected; it must be considered as a dynamic and continuous process, more like a camera exploring the future, at times focusing on well-defined sectors and areas, and at times taking a panoramic view of the whole Basin. The geopolitical upheavals of the transition between the 80's and the 90's have not spared the Mediterranean; they have made the Blue Plan even more useful.

THE SPLIT CENTRE (PRIORITY ACTIONS PROGRAMME) : INTERDISCIPLINARY ACTION PUT TO THE TEST

Just like the Blue Plan, the Priority Actions Programme (PAP) came out of the intergovernmental Split meeting of 1977; it has been hosted by Split, Dalmatia, since 1980. It aims at promoting rational environmental management, by providing practical guidelines for the solution of priority problems through demonstration and pilot projects. It has also launched projects which formed the basis for the first Coastal Areas Management Programmes within the framework of refocusing.

The fields of activity of the PAP are those that seem best to represent the common experience and needs of the Coastal States and are therefore most likely to stimulate among them technical cooperation and exchange of know-how. The scope of PAP is quite extensive, from soil to aquaculture, from tourism to new forms of energy, activating thus various disciplines for very specific projects; there is a component "training", which is really a long-term investment in the human capabilities of the Basin. Among the various activities that PAP has engaged in during the last 10 years we may note the following:

- the development of guiding principles for integrated planning and management of coastal zones, especially the use of management tools such as the Geographic Information System (GIS), of a practical method of assessing environmental impact and various economic tools;

- case studies and a methodological approach to planning, conception and implementation of restoration projects for the historic sites of the Mediterranean;

- missions to various countries to study the development of water resources for islands and isolated coastal areas, water resources management and water conservation projects;

- development of a common methodology and implementation of cooperative projects on mapping and monitoring of soil erosion processes;

- potential application of renewable sources of energy;

• land management in earthquake-prone areas, aquaculture development and reception capacity of tourist facilities (meetings and seminars);

• improved methods of disposing of solid and liquid wastes and of reusing urban wastewater for irrigation.

All these activities give rise to training courses periodically organized in the Mediterranean countries with the help of host governments and/or local authorities and of another UN organization or national institution. For each biennial exercise, more than 200 Mediterranean officials, mostly from the developing countries, receive training in the new environmental assessment and management techniques; this is the practical expression of know-how transfer included in PAP's mandate. It is the decision of Governments to participate in PAP projects; they select the national institutions which take part in the implementation of the various projects. The network of experts and institutions collaborating with PAP has grown over the years to more than 300. In this respect, PAP has paved the way for the effective mobilization of experts in all related fields of competence to bring about the environmentally rational development of the Mediterranean coast. In the long term, when national development strategies will have fully absorbed the factor "environment", the seeds sown by the Split Centre throughout the Mediterranean will bear fruit to benefit everybody around the Basin.

THE TUNIS CENTRE (SPECIALLY PROTECTED AREAS) : CONSERVATION OF NATURAL SITES AND ENDANGERED SPECIES

What better illustration of the flexibility of the legal structure put together at Barcelona in 1976 than the adoption in Geneva six years later (in 1982) of the "Mediterranean Specially Protected Areas Protocol"? Even if the Barcelona Convention does not specifically refer to the concept of "protected areas", its general provisions on safeguarding the Mediterranean heritage, on the protection and improvement of the marine environment implicitly refer to it. Therefore the need to promote, develop and coordinate the activities linked to this aspect of the protection of the Mediterranean environment has gradually been felt by the Governments of the Coastal States; several of them had already been involved in relevant programmes or ratified international conventions to that effect ("Man and the Biosphere", RAMSAR Convention, CITES Convention, etc.). In 1977 an expert meeting on marine parks and wetlands, held at Tunis, had formulated the principles for setting up and managing protected areas in the Mediterranean and for putting together an integrated network of such areas. The 1982 SPA Protocol derives largely from these principles. It did not envisage the establishment of a Specialized Centre, but the Mediterranean Governments meeting in Athens in 1980 adopted the offer of Tunisia to host such a Centre. The Centre for Specially Protected Areas, located in Salammbo, near Tunis, was set up in 1985 and officially inaugurated two years later. Tunisia is extremely sensitive to the problem of specially protected areas, since it had hosted several meetings on the subject and it has, on its territory, protected areas of Mediterranean interest (like the Ichkeul national park and its lake).

The tasks of the Tunis Centre are the following:

• Establishing guidelines on the selection, setting-up and management of specially protected areas;

• Assisting the countries to promote protected areas;

• Establishing and updating an inventory of protected marine and coastal areas in the Mediterranean;

• Assisting the countries to set up at least 50 new protected areas or marine/coastal parks in conformity with one of the objectives set in the Genoa Declaration;

• Compiling of national legislations and international agreements governing the Mediterranean protected areas;

• Progressively establishing a network of protected areas;

• Organizing training programmes for SPA experts.

Obviously the regulations covering the protected areas are not enough to ensure the protection of certain endangered species for which Action Plans have been adopted : Monk Seals (1987), Marine Turtles (1989) and Cetaceans (1991). The Tunis Centre has been entrusted with the coordination of the relevant activities as well.

The Tunis Centre is supported on a scientific and technical level by the World Conservation Union (IUCN), which plays an important role at international and regional level for the protection of nature and the various living species. The Centre also fully participates in the Coastal Areas Management Programmes, in close cooperation with the other MAP components, in order that the protection of special areas be integrated in the Programmes.

MONK SEALS AND MARINE TURTLES : PRECARIOUS SURVIVAL

The extinction of a species is not just something that makes the bio- diversity of our planet poorer. It also destroys an essential link in the ecosystem with adverse effects that often cannot be predicted. For the last 15 years, the Mediterranean Monk Seal and the marine turtles have mobilized various associations devoted to their survival, which have launched dynamic campaigns to save them from extinction.

The Monk Seal

As its name implies, the Monk Seal prefers the solitude and peace of nature to the cacophony of mass tourism. **Monachus monachus** *is, like all seals, a mammal of the Pinnipeda order (using flippers to propel itself). The urbanization of the Mediterranean coasts and the summer tourists arriving in great numbers have forced the Monk Seal to abandon its traditional habitats (secluded beaches) and take refuge in rock caves, but even there it cannot escape from the curious. The problems are not new. For hundreds of years the Monk Seal was hunted for its skin and fat. It was butchered but not exterminated. Several chronicles mention that, around the Mediterranean, there used to live several colonies numbering a few thousand animals each. It is estimated that only between 300 and 500 individuals survive in the whole Mediterranean. The pressures on its habitat are compounded by the fact that the seals are killed by fishermen who consider it a competitor liable to damage their nets and catches. Overfishing often deprives it of the food it needs. Concerning marine pollution,*

it has a direct impact (risk of entanglement in the plastic fishing gear) and an indirect one because it weakens the animals' resistance to disease and changes their reproductive rate. The few small colonies remaining (a few dozen individuals) are in Algeria, Tunisia, and especially in the Eastern Mediterranean (Greece and Turkey). The MAP Action Plan stipulates that the seals' reproduction sites must be identified and integrated in the Specially Protected Areas, that around them buffer areas where fishing and tourist access will be controlled must be established, and that awareness campaigns must be conducted among fishermen, the local populations and summer tourists. Concrete results have already been obtained (setting up of marine parks, relevant legislative measures), but the vigilance of the associations devoted to the seals' conservation, remains the best guarantee that the measures adopted will be effectively implemented.

Marine turtles

They are not only hunted for food, but their habitats are threatened : their survival is precarious and it seems that the battle lines were drawn 90 million years ago and the latest enemies, land developers and tourist agents, are as tough as any that have threatened the species in the past. Most countries have banned catching the animals to make turtle soup, but the trade in turtle shells still continues. The females still cross the Mediterranean to build their nests on certain beaches according to a very strict ritual. Noise, movements, lights, all may easily deter them from each laying about 100 eggs the size of ping-pong balls in the sand. Hotel complexes, bathing areas, yachts, and marinas, make it impossible for the turtles to lay their eggs. Like the Monk Seal, the sea turtle is affected by various forms of pollution : it ingests plastic, mistaking it for food, becomes sick, and is found in this state on beaches. Often it falls victim to accidental catching by fishermen using trawling or drag nets. The behaviour, habits and movements of sea turtles are not well known, and labelling drives are organized. Dissemination of information and awareness campaigns targeted at fishermen, local populations and tourists are the prerequisites for any effective action. In the last 15 years, the number of animals has dropped dramatically, about 50%. In the most important nesting beaches on which many hundreds of animals congregate (Zakynthos in Greece, Dalyan delta in Turkey, Lara beach in Cyprus) protection measures have been taken, but they are often challenged by local interests, despite the dynamic campaigns of environmentalists.

HISTORIC SITES : SAVING THE CULTURAL HERITAGE

The Mediterranean coasts have the greatest concentration in the world of historic sites and monuments attesting to 5,000 years of trade, conquests and conflicts. The ebb and tide of successive civilizations has left these sparkling gems as monuments of the creative genius of Man. This heritage has again generated great interest in the last decades, perhaps because the peoples of the Mediterranean have felt the need to go back to their roots. At the same time, however, some of the most important sites are threatened by pollution, mass tourism and rampant urbanization.

The value of the cultural heritage, and the responsibility to protect it, are stated in the preamble to the Barcelona Convention and the preamble to the Specially Protected Areas Protocol. In September 1985, with the adoption of the Genoa Declaration, the Mediterranean States committed themselves to identifying at least 100 historic sites of common interest, and entrusted the International Council for Monuments and Sites (ICOMOS) with drafting general principles and selection criteria for the sites. In 1987, an initial list of 100 sites was adopted by all Mediterranean States, with the understanding that it would remain open. International Organizations concerned with cultural heritage (UNESCO, ICOMOS, ALECSO) associated themselves with this new form of Mediterranean cooperation, while two MAP components were more directly involved : the Split Centre, which launched in 1984 a priority action on "the

LIST OF THE 100 HISTORIC SITES OF THE MEDITERRANEAN

This is the initial list of 100 sites adopted by the Coastal States in 1987. Two thirds of the sites and works selected for their importance concerning the history of Mediterranean culture are in 4 countries: Greece, Italy, Spain and Turkey. Other sites will complete the list. Those preceded by an asterisk also belong to the UNESCO World Heritage List.

ALBANIA
Apollonia
Dyrrachion

ALGERIA
Algiers
Cherchell
Hippona
Tipasa*

CYPRUS
Famagusta
Khirokitia
Kourion
Limassol
Paphos*
Salamis

EGYPT
Abu Mena*
Cairo, Giza,
Memphis, Saqqara*
the Necropolis of
Alexandria

FRANCE
Aigues Mortes*
Arles
Cucuruzzu and Filitosa
(Corsica)
Fréjus
Marseille: (Ancient
Harbour)

GREECE
Athens*
Corfu
Crete
Delos
Delphi*
Epidaurus* and
Nauplion
Mount Athos*
(nature/cultural site)
Mycenae - Tiryn
Mystras
Olympia
Paros and its quarries
Rhodes*
Salonica*
Samos
Thasos and its quarries
Thera (nature/cultural site)

ISRAEL
Accra
Caesarea on the Sea

ITALY
Agrigento
Amalfi
Aquilea
Bari
The quarries of Carrara
The Nuragic monument
complex of Su Nuraxi,
Barumini (Sardinia)
Genoa
Lecce
Naples, Pompeii,
Herculaneum and the
Phlegrean fields
Paestum/Poseidonia
Palermo and Monreale
Pisa*
Ravenna
Rome* and Ostia
Segesta
Selinous
Syracuse
Tarquinia and the main
Etruscan necropolises
Trieste
Venice* and its lagoon

LEBANON
Byblos*
Sidon*
Tyre

LIBYA
Cyrene*
Leptis Magna*
Sabratha

MALTA
Ggantija*
Hal Saflieni*
Valletta*

MONACO
Oceanographic
museum (for its cultural
and natural value)

MOROCCO
Tetouan

SPAIN
Ampurias
Barcelona*
Cordova*
Grenada*
Ibiza: Fortification of
Alt Vila
Majorca: Cathedral and
Palace of Palma
Malaga
Minorca: Taulas,
talayots and navetas
Murcia
Seville*
Tarragona
Valencia and Albufera

SYRIA
Ugarit/Ras Shamra

TUNISIA
Carthage* and Sidi Bu Saïd
Djerba (for its cultural and
natural value)
El Jem*
Kerkuan*
Sousse*
Tunis*

TURKEY
Antalya
Aspendos
Bursa
Didymes
Ephesus
Fethiye - Olüdeniz
(natural/historic value)
Halicarnassus*
Istanbul
Kaunos
Kekova (natural/ historic
value)
Knidos
Miletus
Pergamum
Phaselis
Priene
Troy
Xanthos*

YUGOSLAVIA
Dubrovnik*
Hvar and Korcula
Split*
Trogir (natural/cultural site)
Zadar (natural/cultural site)
Kotor*

rehabilitation and reconstruction of historic settlements" and the Tunis Centre, since the protection of special areas extends to cultural aspects as well.

The first meeting of those responsible for historic sites in the Mediterranean, was convened in January 1989 in Marseille. It adopted a Declaration and a Charter stipulating especially the establishment of a network to facilitate cooperation, exchange of information and know-how. The secretariat functions were entrusted to the Atelier du Patrimoine de la Ville de Marseille, with technical support functions in three areas : stone degradation, protection of archaeological underwater sites (including shipwrecks) and training in the field of historic site protection.

4. FOCUS ON THE COAST

Experience has shown that the main causes of marine pollution are of land origin and due to defective management of the coastal areas and the large river basins. The refocusing of all MAP activities, within the framework of the Coastal Areas Management Programmes launched, in 1989, the most concrete phase of Mediterranean cooperation. The problems of environment and development are dealt with in an integrated way, i.e. a coastal area is approached from all its aspects and their mutual interdependence.

The procedure for each CAMP is well defined : a Coastal State proposes an especially vulnerable coastal area. After its adoption by MAP/UNEP and all the Mediterranean States, the preliminary phase begins, i.e. to identify the main problems of the area, to define the options for the solution of the problems and to elaborate a draft programme. A mixed team, made up of experts from MEDU and the Regional Centres and national and local experts, carries out the preparatory work within the framework of study missions and technical meetings. All the tools of integrated planning are used. The philosophy behind these coastal programmes is to help the States define, or redefine, the development of problem areas while respecting the environment; further to mobilize towards this end national investments and to promote greater international cooperation; the financial intervention of the World Bank and the EIB in the CAMPs is a case in point. This preliminary phase concludes with a document which is the official agreement to be signed by MAP/UNEP and the government in question. A workplan, along with a timetable and budget, is adopted for each biennium. The first four CAMPs which have been fully operational since 1990, were developed on the basis of pilot projects carried out by the Split Centre. They involve Izmir Bay, the island of Rhodes, Kastela Bay and the Syrian Coast. Five additional CAMPs were later approved by the Contracting Parties, one each in Egypt (Fuka), Tunisia (Sfax), Albania, Algeria and Morocco. The success of MAP in the future will depend on the success of these programmes. The four initial CAMPs give a good illustration of the type of problems that coastal management is called upon to solve.

FOUR CAMPS WHICH ILLUSTRATE THE NEED FOR REFOCUSING

The Syrian coast : threatened crossroads

By selecting the Mediterranean coast for a CAMP, the Government of Syria wished to put the emphasis on the most prosperous region of the country which is threatened by its prosperity. Its surface is only 2% of the national territory, but it concentrates 11% of the total population (1.2 million out of over 10 million), 90% of the national citrus production, 63% of cement, 50% of oil refining capacity, etc. The population of the coastal strip has trebled in 30 years because of an intense internal migration from the arid and very poor hinterland to the dynamic urban centres of Banias, Lattakia and Tartous. This trend brought about tremendous pressures on the environment. The sanitation systems were inadequate, treatment stations and underwater outfalls for sewage did not exist, discharges of industrial effluents were not regulated, with the result that marine, air and groundwater pollution reached critical levels. The challenge for the next few decades is to guarantee future generations of adequate employment levels, while at the same time minimizing environmental damage.

Izmir Bay : waste treatment and rehabilitation

Here too it is the demographic boom, urbanization and industrialization of the last 30 years that have damaged the Bay. From 1965 to 1988 the population increased each year by between 30,000 and 80,000 people. Today, more than 1,500,000 people live in the Greater Izmir area. A dynamic city, the largest commercial centre of the country, the second port after Istanbul, Izmir has more than 1,500 industrial enterprises which represent 10% of manufacturing production, and 15% of Turkish exports, especially leather, textiles and food/agriculture. The toll has been heavy on the environment since the pollutant load dumped into the Bay has received no treatment. The Bay is shallow and the water exchange and self-cleaning processes become difficult. The project of a waste treatment plant was adopted in 1969, but remains priority number one, due to successive revisions of the original plans.

Kastela Bay : trapped by geography

For decades a pole of attraction for tourists, Kastela Bay in central Dalmatia has both benefitted and suffered from its natural beauty. It is a semi-enclosed bay. It communicates with the Adriatic through a narrow channel which separates the peninsula where the City of Split is built - an important port and regional economic centre - from the island of Corvo adjacent to the continent. Several industries are located on the narrow coastal strip that lies between the bay and the Kozjak mountains. The population, which in 1945 was 50,000, is today 350,000 which used to practically double in the summers before the Yugoslav crisis. In the last years the municipalities of Split, Trogir, Solin and the seven Kastelas have faced acute problems of waste disposal and environmental management. The problems become even more acute because of the string of islands outside the bay which forms a second natural barrier which limits water exchange and compounds pollution because of several tourist resorts established on the islands.

Rhodes : at the saturation level

It too has seen its population practically treble in the last 30 years, but the problems caused by the demographic and industrial booms are not similar to those of the cases presented above. Rhodes is rather the example of an area that could easily sustain its development if tourism did not upset the balance every year at peak season : in 1990 800,000 tourists or 10 times the local population, arrived in Rhodes. Water shortage, a common problem of Greek islands, is severe in the summer. Despite projects put in operation, waste disposal remains a major problem. The situation is not critical yet, but bathing water pollution has affected the vicinity of the Rhodes harbour. To date, the economic boom of the island has been based almost exclusively on tourism, to the detriment of the primary and secondary sectors. This unilateral development brings about economic and social imbalances (the South of the island is underdeveloped).

5. THE PLUSES AND THE MINUSES

"Our common goal is to protect and rehabilitate the Mediterranean as a basis for the sustainable development of all countries around it. Treaties and plans alone will not do that.

Actions will. A very basic question we have to answer is how far has the Mediterranean benefitted from the Barcelona Convention, its various protocols and its Action Plan." This is what Dr Mostafa K. Tolba, Executive Director of UNEP, stated in his opening address to the Seventh Ordinary Meeting of the Contracting Parties in Cairo, in October 1991. Having concluded this brief description of the Mediterranean Action Plan, we can see that the answer in the future will come from scientists and the main actors of Mediterranean cooperation, within the framework of in-depth analysis of the things accomplished. The Programme itself, its successes and failures, its innovative character and the delays it has marked, cannot be separated from the general context of the region and from the political will which is shown in each of the Mediterranean countries to protect the environment.

MECHANISMS NOT FULLY EXPLOITED

UNEP officials have repeatedly stressed in the various phases of MAP that the Coastal States had not taken full advantage of the mechanisms they adopted within the framework of the Barcelona Convention. To the 1976 Convention and two Protocols, two more essential Protocols were later added : one on land-based sources and the other on Specially Protected Areas; but an important regulation has so far not been enforced : Art.12 of the Convention stipulates that "The Contracting Parties undertake to cooperate as soon as possible in the formulation and adoption of appropriate procedures for the determination of liability and compensation for damage resulting from the pollution of the marine environment". The "polluter pays" principle, if applied in all Coastal States, would have dissuasive value and would prevent major accidents; it is hoped that this fundamental question will be re- examined with a view to putting it in concrete terms. Moreover, the Coordinating Unit is facing difficulties in gathering and treating data - which are necessary as a basis for decision taking by the States - because some governments are slow in communicating information on pollution sources and on measures and legislation adopted to implement the Convention and its Protocols.

ENVIRONMENTAL PROTECTION : A LUXURY FOR DEVELOPING COUNTRIES?

Progress in Mediterranean environmental protection is but the sum of progress in each of the Coastal States. However, the battle is not fought on equal terms by all. It is true that the most developed countries of the North have implemented - in the industrial sector and in wastewater treatment - policies that have started giving results, thanks to the financial and technical means that these countries have at their disposal. Does this mean that environmental protection is still a luxury for the developing countries? It would not be fair to consider them less sensitive to environmental matters. One example suffices to illustrate the dilemmas they face : When the sanitation system is old and inadequate and the people it serves lack basic infrastructure, such as schools and hospitals, can the Government decide to build a waste treatment plant?

THE NECESSITY OF NORTH-SOUTH SOLIDARITY

The North-South gap, which runs through practically all environmental matters, and which was highlighted in the Blue Plan Report, must become the main priority of all those involved in Mediterranean cooperation. No meaningful regional action can be undertaken successfully at regional level, unless the developing countries participate on an equal footing. This means that the Northern industrialized countries - which are, one must stress, the main consumers of resources and producers of waste - must show the political will to carry out the necessary transfers of technology and know-how and to contribute to finance mechanisms; this would allow their less privileged partners to develop independently their respective joint policies of development and environmental protection.

THE MEETINGS AT NICOSIA AND PALMA

Is this necessity finally being felt? Two events in 1990 were encouraging. The Nicosia Charter, adopted in June, was drafted by the Commission of the European Communities and 12 Coastal States. This document defines action priorities for the 2025 horizon, and is based on the concrete expression of solidarity of States and the Commission to be integrated in the MAP through the intervention of the World Bank and the European Investment Bank. Six months later, the Conference on Security and Cooperation in Europe (CSCE) held a meeting on Mediterranean ecosystems at Palma de Majorca, Spain. The final document stresses the pioneer role played by MAP, the importance of the commitments undertaken at Barcelona, and the need to ensure the ecological balance of the region. Other bodies work in the same direction. Some are regional, like the RAMOGE Agreement between France, Italy and Monaco, or the Adriatic Initiative of the four Coastal States (Italy, Yugoslavia, Albania, Greece) which is directly supported by MAP. These parallel or converging activities do not in the least compete with MAP; on the contrary, they promote its objectives and mobilize new resources for the protection of the environment.

THE COMING GENERATIONS

The mobilization and support of the public for environmental protection play a fundamental role - complementary to the actions of experts and to the development of new knowledge - because they create the conditions for the abolishment of economic and political obstacles and the taking of effective measures. Training and educating the various target groups in the problems and challenges are not yet undertaken systematically in the Mediterranean States. A positive trend is seen in the growing number of associations that have had important successes : campaigns to save the Monk Seal and *Caretta caretta*, drives to stop projects that would harm the environment at specific sites, successful drives to stop abusive waste discharges, etc. The Mediterranean Action Plan supports or instigates such activities, through better information. It instituted a Mediterranean Environment Week which opens every year in June on World Environment Day, and which should more dynamically be supported by Coastal States.

Sixty percent of the 325 million Mediterraneans of the year 2025 have not been born yet. This fact points out the direction of future activities. The children of the area must be educated to become more conscious of environmental matters than their parents have been. Despite local activities - at municipal or school level - still a lot needs to be done in order that the children truly grasp the concrete reality of the Mediterranean environment. The increasing time that the mass media devote to environmental problems has some benefits, even though it does not always avoid the double pitfalls of sensationalism and superficiality. It has to be coupled with a more active participation of the child in the field, through contact with nature. The Mediterranean people have amply proved in the past that they knew how to meet the challenges by making their region a testing field for ideas that were adopted by the rest of the world. The current challenge of the survival of their common sea and its resources is unprecedented. What has preceded was meant to show that the legal framework, the mechanisms, the mandates and the goodwill exist to help the Mediterranean peoples meet this challenge.

III. APPENDICES

1. Signatures and ratifications of the Convention for the Protection of the Mediterranean Sea against Pollution and its related Protocols, as of 30 October 1991.

Country	Convention[1]		Dumping[2]		Emergency[3]		Land-Based Sources[4]		Specially Protected Areas[5]	
	Signature	Ratification	Signature	Ratification	Signature	Ratification	Signature	Ratification	Signature	Ratification
Albania	—	30 May 90/AC	—	30 May 90/AC	—	30 May 90/AC	—	30 May 90/AC	—	30 May 90/AC
Algeria	—	16 Feb 81/AC	—	16 Mar 81/AC	—	16 Mar 81/AC	—	2 May 83/AC	—	16 May 85/AC
Cyprus	16 Feb 76	19 Nov 79	16 Feb 76	19 Nov 79	16 Feb 76	19 Nov 79	17 May 80	28 Jun 88/AC	—	28 Jun 88/AC
Egypt	16 Feb 76	24 Aug 78/AP	16 Feb 76	24 Aug 78/AP	16 Feb 76	24 Aug 78/AP	—	18 May 83/AC	16 Feb 83	8 Jul 83
France	16 Feb 76	11 Mar 78/AP-R	16 Feb 76	11 Mar 78/AP-R	16 Feb 86	11 Mar 78/AP-R	17 May 80	13 Jul 82/AP-R	3 Apr 82	2 Sep 86/AP-R
Greece	16 Feb 76	3 Jan 79	11 Feb 77	3 Jan 79	16 Feb 76	3 Jan 79	17 May 80	26 Jan 87	3 Apr 82	26 Jan 87
Israel	16 Feb 76	3 Mar 78	16 Feb 76	1 Mar 84	16 Feb 76	3 Mar 78	17 May 80	21 Feb 91	3 Apr 82	28 Oct 87
Italy	16 Feb 76	3 Feb 79	16 Feb 76	3 Feb 79	16 Feb 76	3 Feb 79	17 May 80	4 Jul 85	3 Apr 82	4 Jul 85
Lebanon	16 Feb 76	8 Nov 77/AC	16 Feb 76	8 Nov 77/AC	16 Feb 76	8 Nov 77/AC	17 May 80	—	—	—
Libya	31 Jan 77	31 Jan 79	31 Jan 77	31 Jan 79	31 Jan 77	31 Jan 79	17 May 80	6 Jun 89/AP	—	6 Jun
Malta	16 Feb 76	30 Dec 77	16 Feb 76	30 Dec 77	16 Feb 76	30 Dec 77	17 May 80	2 Mar 89	3 Apr 82	11 Jan 88
Monaco	16 Feb 76	20 Sep 77	16 Feb 76	20 Sep 77	16 Feb 76	20 Sep 77	17 May 80	12 Jan 83	3 Apr 82	29 May 89 R
Morocco	16 Feb 76	15 Jan 80	16 Feb 76	15 Jan 80	16 Feb 76	15 Jan 80	17 May 80	9 Feb 87	2 Apr 83	22 Jun 90
Spain	16 Feb 76	17 Dec 76	16 Feb 76	17 Dec 76	16 Feb 76	17 Dec 76	17 May 80	6 Jun 84	3 Apr 82	22 Dec 87
Syria	—	26 Dec 78/AC-R	—	26 Dec 78/AC	—	26 Dec 78/AC	—	—	—	—
Tunisia	25 May 76	30 Jul 77	25 May 76	30 Jul 77	25 May 76	30 Jul 77	17 May 80	29 Oct 81	3 Apr 82	26 May 83 R
Turkey	16 Feb 76	6 Apr 81	16 Feb 76	6 Apr 81	16 Feb 76	6 Apr 81	—	21 Feb 83/AC	—	6 Nov 86/AC- R
Yugoslavia	15 Sep 76	13 Jan 78	15 Sep 76	13 Jan 78	15 Sep 76	13 Jan 78	—	16 Apr 90	30 Mar 83	21 Feb 86
EEC	13 Sep 76	16 Mar 78/AP	13 Sep 76	16 Mar 78/AP	13 Sep 76	12 Aug 81/AP	17 May 80	7 Oct 83/AP	30 Mar 83	30 Jun84/AP

(1) Convention for the protection of the Mediterranean Sea against pollution — Adopted (Barcelona): 16 February 1976 — Entry into force: 12 February 1978

(2) The Protocol for the prevention of pollution of the Mediterranean Sea by dumping from ships and aircraft — Adopted (Barcelona): 16 February 1976 — Entry into force: 12 February 1978

(3) The Protocol concerning co-operation in combating pollution of the Mediterranean Sea by oil and other harmful substances in cases of emergency — Adopted (Barcelona): 16 February 1976 — Entry into force: 12 February 1978

(4) The Protocol for the Protection of the Mediterranean Sea against pollution from Land-based sources — Adopted (Athens): 17 May 1980 — Entry into force: 17 June 1983

(5) The Protocol concerning Mediterranean Specially Protected Areas — Adopted (Geneva): 3 April 1982 — Entry into force: 23 March 1986

Accession - AC Approval - AP Reservation - R

2. LIST OF ABBREVIATIONS

CAMP : Coastal Areas Management Programme (MAP/UNEP)
CITES : Convention on International Trade in Endangered Species of Wild Flora and Fauna
EEC : European Economic Community
EIB : European Investment Bank
FAO : Food and Agriculture Organization of the United Nations
IAEA : International Atomic Energy Agency
IBRD : International Bank for Reconstruction and Development (WB)
ICOMOS : International Council for Monuments and Sites
ICSEM : International Commission for the scientific exploration of the Mediterranean Sea
ILMR : Former abbreviation of MEL
IMO(IMCO) : International Maritime Organization
IOC : Intergovernmental Oceanographic Commission
IUCN : World Conservation Union
MAB : "Man and the Biosphere" (UNESCO)
MAP : Mediterranean Action Plan (UNEP)
MARPOL : International Convention for the prevention of pollution from ships
MED POL : Monitoring and research programme of marine pollution in the Mediterranean (MAP/UNEP)
MEL : Marine Environment Laboratory (IAEA, Monaco)
MEP : Programme for the Environment in the Mediterranean (WB/EIB)
METAP : Mediterranean Environment Technical Assistance Programme (WB/EIB)
NGO : Non-Governmental Organization
OCA/PAC : Oceans and Coastal Areas Programme Activity Centre (UNEP Nairobi)
RAC/BP : Regional Activities Centre/Blue Plan (MAP/UNEP)
RAC/PAP : Regional Activities Centre/Priority Actions Programme (MAP/UNEP)
RAC/SPA : Regional Activities Centre/Specially Protected Areas (MAP/UNEP)
RAMOGE : Saint-Raphael - Monaco - Genoa (sub-regional agreements)
REMPEC : Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
ROCC : Former abbreviation of REMPEC
UNDP : United Nations Development Programme
UNESCO : United Nations Educational, Scientific and Cultural Organization
UNIDO : United Nations Industrial Development Organization
WB : World Bank
WMO : World Meteorological Organization
WTO : World Tourism Organization
WWF : World Wide Fund for Nature

3.THE KEY DATES OF MAP

1975 : February. Adoption of the Mediterranean Action Plan by 16 Coastal States at Barcelona, Spain. Launching of the MED POL monitoring and research programme.

1976 : February. Adoption of the Barcelona Convention and two Protocols (Dumping and Emergency) by 16 Coastal States and the EEC. In December, inauguration of the Regional Oil Combating Centre (ROCC, today REMPEC) at Malta.

1977 : The intergovernmental meeting at Split decides to launch the Blue Plan and the Priority Actions Programme to give flesh to the socio-economic component of the Action Plan.

1979 : Establishment of the Mediterranean Trust Fund (MTF).

1980 : May. Adoption at Athens of the Land-Based Sources Protocol.

1981 : Adoption and launching of MED POL - Phase II at the intergovernmental meeting at Cannes.

1982 : July. The headquarters of the MAP Coordinating Unit are transferred from Geneva to Athens. In April, adoption of the Specially Protected Areas Protocol.

1985 : The 4th Ordinary Meeting of the Contracting Parties in Genoa, Italy, adopts a first set of common anti-pollution measures (quality criteria) and a "Declaration on the Second Mediterranean Decade", called the "Genoa Declaration" which reaffirmed the political will of the Coastal States and the EEC to work for the protection of their environment.

1987 : February. Inauguration of the Specially Protected Areas Centre in Salammbo, Tunis, the fourth Regional Activities Centre of MAP.

1989 : At the 5th Ordinary Meeting at Athens, adoption of the principle of the refocusing of the Action Plan on integrated planning and management of coastal areas, and the second set of common anti-pollution measures.

1990 : With the accession of Albania to the Barcelona Convention, all the Mediterranean States now participate in MAP.

1991 : At the 7th Ordinary Meeting at Cairo, adoption of Annex IV to the Land-Based Sources Protocol and the Action Plan for the protection of Mediterranean Cetaceans.

1992 : June. The MAP experience, with its 15 years of cooperation and common reflection on the links between environment and development is presented at the Rio Conference, the new World Summit on the environment twenty years after the Stockholm Conference.

4.MAP PUBLICATIONS

The MAP Technical Reports Series comprises a large number of reports (62 at present) drafted in the course of the various activities carried out within the framework of the MAP components and by the Regional Centres. They are addressed mainly to the scientific community. The reports are published in English and/or French; certain volumes contain the evaluations of the state of pollution of the Mediterranean Sea by the main substances listed in the Annexes to the Land-Based Sources Protocol.

The Genoa Declaration. A volume containing the complete text of the 1985 Declaration in the 10 languages of the Mediterranean region.

The Action Plans for the conservation of the Monk Seal and the sea turtles. The texts of the Action Plans (Arabic, English and French).

High and Dry : the Mediterranean Climate in the 21st Century. A brochure for the layman on the possible repercussions of climatic change in the region (in Arabic, English and French).

MEDWAVES information bulletin. A quarterly in Arabic, English and French, published by the Coordinating Unit on the various activities of MAP and with special dossiers on regional problems.

The Coordinating Unit also disseminates the UNEP documentation, especially the brochures in Arabic, English, French and Spanish containing the texts of the Barcelona Convention and the Protocols. It also disseminates posters, stickers and other information material on the environment in the Mediterranean.

The Coordinating Unit disseminates the documents prepared and published by the MAP Regional Activities Centres (reports, catalogues, guidelines, etc.).

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