



**THE
MEDITERRANEAN
ACTION PLAN
(MAP)**



MEDITERRANEAN ACTION PLAN

MEDU, MED POL, REGIONAL ACTIVITY CENTRES & MAP CONTRACTING PARTIES *



* 20 Mediterranean countries and the European Union

ERS/RAC



THE MEDITERRANEAN ACTION PLAN (MAP)

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Printed by Dynactis

August 2000 | © UNEP/MAP Athens / Greece

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INTRODUCTION

Welcome to the Mediterranean Action Plan (UNEP/MAP), an action-oriented cooperative effort involving 20 countries bordering the Mediterranean Sea as well as the European Union. Together, they are determined to meet the challenges of environmental degradation in the sea, coastal areas and inland and to link sustainable resource management with development, in order to protect the Mediterranean region, a treasure they share, and contribute to an improved Mediterranean quality of life.

Since 1975, as part of the United Nations Environment Programme, Mediterranean States, through UNEP/MAP* have been working in unison, rising above political, cultural, developmental and religious differences to address environmental issues. As pollution does not respect national boundaries, and no country can confront environmental degradation alone, Mediterranean countries are drawing on MAP expertise to work towards preserving their world. MAP's objective is to tackle these challenges in the most effective way, integrating environment and development more closely to achieve prosperity and sustain the rich Mediterranean heritage in a lasting way.

The Mediterranean region, stretching from the Alps to the Sahara desert and from Atlantic coasts to the Anatolian plateau, intersects with three continents. The Mediterranean is the only sea that has given its name to the inhabitants of the countries that fringe it. The ancestors of Mediterranean peoples were part of great civilisations such as the Egyptian, Greek, Roman, Byzantine and Arab, which have left a legacy of sites of historical and architectural interest along with lasting ideas. This cultural heritage along with the region's natural assets: spectacular landscapes, flora, fauna, and pleasant climate, are an attraction for millions of domestic and international tourists each year, making the Mediterranean the world's leading tourist choice.

ENVIRONMENTAL PROBLEMS IN THE MEDITERRANEAN REGION - AN OVERVIEW

Both the Mediterranean Sea, and the Mediterranean countries, particularly their coastal areas, face heavy pressures, most of them the result of human activities related to uncontrolled and rapid development. The resident population of the Mediterranean countries has jumped from 246 million in 1960 to 427 million in the year 2000. Urbanisation (city populations are expected to rise by around 38% between 2000-2025), overcrowding in coastal regions, the rise of consumerism,

* *The Mediterranean Action Plan of the United Nations Environment Programme (or UNEP/MAP) is hereafter referred to as MAP.*



intensive agriculture, mass tourism, and unrestricted coastal area development, combine to assault the natural environment. These factors interact to cause pollution loads that threaten peoples' quality of life and native plant and animal species. Today, still too much untreated wastewater and too many toxic substances are discharged into this semi-enclosed sea which cannot absorb pollutants without cost. Transport and industries cause atmospheric pollution that is damaging to human health, nature and archaeological sites. Increasing sea transportation of oil and hazardous materials poses growing threats of accidental pollution. The delicate Mediterranean ecosystem is disturbed in a variety of ways from the contamination of fish by industrial effluents to the destruction of the habitats of endangered species by tourism.

HOW DOES THE MEDITERRANEAN ACTION PLAN (MAP) RESPOND?

MAP's work focuses on the sustainable management of natural marine and coastal resources and on integrating the environment into social and economic development and land use policies. It seeks an earlier assimilation of environmental considerations into development plans because the management of the environment can only be effective if it is incorporated into development. All citizens, particularly business and professional people as well as municipal personnel and educators, are being called upon to make environmental considerations an intrinsic part of all Mediterranean development activities.

MAP is involved in coastal zone management, pollution assessment, control and prevention and the protection of ecosystems to maintain biodiversity. MAP sets in motion corrective and preventative programmes, pushing green measures and sustainability higher up the list of national priorities. It also seeks to strengthen solidarity among Mediterranean coastal states in managing their common heritage and resources for the benefit of present and future populations.

This brochure examines the environmental challenges facing the Mediterranean area as well as MAP's accomplishments and ongoing priorities. It charts its efforts in the service of Mediterranean countries and the ways in which it boosts their own national capabilities, information exchange and enhanced partnerships, so that they can overcome environmental degradation and protect the region in the process of developing their economies. After a look at how MAP has evolved in response to the region's changing environmental needs, it focuses on four main challenges: curbing pollution; protecting the natural and cultural heritage; the sustainable management of coastal zones and integrating environment and development. It concludes with an emphasis on the pivotal role of wider Mediterranean society in the area's future rehabilitation.

Today, 20 countries fringing the Mediterranean Sea and the European Union (EU) make up MAP. All are contracting parties to the Barcelona Convention, the MAP legal framework that commits them to a dedicated environmental course of action for the Mediterranean. The Convention is accompanied by six Protocols which are binding legal instruments addressing specific aspects of environmental protection.

MAP is coordinated by a Secretariat based in Athens, under a Host Country Agreement with Greece. It works under the auspices of the United Nations Environment Programme (UNEP) and was the first UNEP Regional Seas Programme. MAP comprises a MED POL programme for the assessment and control of pollution, a Programme for the Protection of Historic Sites and six Regional Activity Centres (RACs). Each RAC offers its own environmental and developmental expertise for the benefit of the Mediterranean community through its implementation of MAP activities.

The Contracting Parties (Mediterranean countries and the EU) meet every two years to decide on MAP strategies, budget and programme in pursuit of MAP's goal of an improved Mediterranean environment, in the framework of Mediterranean sustainable development. A number of observers such as non-governmental organisations (NGOs) and UN specialised agencies and bodies are invited to sit in on these meetings. A rotating Bureau of six Contracting Parties meets to guide and advise the Secretariat in the interim periods.

Each member country appoints one or more individuals to be responsible for the follow-up and coordination of MAP activities at national level. Known as Focal Points, they are the official representatives of the Contracting Parties, and in turn delegate other Focal Points to focus on key MAP issues.

MAP COORDINATING UNIT (MEDU)

The MAP Coordinating Unit (MEDU) is the nerve centre of MAP activities. Since 1982, it has been based in Athens. MEDU is responsible for the implementation of the Mediterranean Action Plan. It performs diplomatic, political and public relations roles. MEDU cooperates with countries, NGOs and other relevant international organisations, facilitating capacity-building and supervising MAP Regional Activity Centres. It is responsible for the follow-up and implementation of legal documents and MAP's information strategy. MEDU also performs all secretariat functions such as the organisation of major institutional meetings and programmes and the management of MAP finances.

FUNDING

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Most MAP activities are primarily financed by the Mediterranean Trust Fund to which all MAP Contracting Parties contribute according to a mutually agreed level in line with a UN assessment scale. Other main sources of funding to support specific projects and activities include voluntary contributions, the European Union, UN agencies, and the Global Environment Facility (GEF).



LEGAL STRUCTURE

MAP's legal framework - the 1976 Barcelona Convention for the Protection of the Marine Environment and the Coastal region of the Mediterranean, as amended in 1995, and the six Protocols, the so-called Barcelona system - bears witness to the countries' commitment to prioritise environmental considerations despite the fact that they may be at different stages of economic development. Once they have signed and ratified these agreements* the task of the member states is to go on to take appropriate steps to implement national organisational and legal initiatives as a route to optimal compliance with the Barcelona system.

These legal texts interact with global legal agreements, some of which have been developed under the auspices of the United Nations Environment Programme, such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the Convention on Biological Diversity. The Barcelona Convention and the MAP Protocols, updated when necessary, take account of recent developments in international environmental law such as the Polluter Pays Principle and the Precautionary Principle, the Principle of Environmental Impact Assessment Procedure and that of Public Participation and Access to Information. They also intersect with other sub-regional agreements such as the RAMOGE agreement on the protection of the marine environment, signed by France, Italy and Monaco, or the agreement between Greece and Italy on the Protection of the Marine Environment of the Ionian Sea and its Coastal Zones.

* The process of ratification of the new or amended legal instruments is ongoing.

Dumping Protocol: Protocol for the Prevention and Elimination of Pollution in the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea (1976, as amended in 1995)

Emergency Protocol: Protocol Concerning Cooperation in Combating pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency (1976)

LBS Protocol: Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (1980, as amended in 1996)

SPA and Biodiversity Protocol: Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (1995, replacing the 1982 SPA Protocol)

Offshore Protocol: Protocol for the Protection of the Mediterranean Sea against Pollution resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil (1994)

Hazardous Wastes Protocol: Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal (1996)

MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT (MCSD)

Sustainable development is about integrating respect for the environment into all aspects of economic development to ensure sufficient natural resources for future generations. Set up as an advisory body to MAP in 1996, the Mediterranean Commission on Sustainable Development (MCSD) is a think-tank on policies for promoting sustainable development in the Mediterranean basin. Its structure embodies the sustainable development outlook that the intermingling of environment and development requires the participation of society as a whole. In the MCSD, 15 representatives of local authorities, business groups and environmental NGOs are placed on an equal footing with 21 representatives of the Contracting Parties.

The Commission, provided with administrative support by MEDU, makes recommendations to MAP members on future actions relating to key Mediterranean themes for the promotion of sustainable development in areas such as tourism, trade, industry and urban management.

PROGRAMME FOR THE ASSESSMENT AND CONTROL OF POLLUTION IN THE MEDITERRANEAN REGION (MED POL)

MED POL, based at MEDU, assists Mediterranean countries in the formulation and implementation of pollution monitoring programmes, including pollution control

measures and the drafting of action plans aiming to reduce and ultimately eliminate pollution from land-based sources. It also carries out capacity-building programmes concerned with the analysis of contaminants and treatment of data and technical and management training. MED POL is responsible for the follow-up work relating to the implementation, by Mediterranean countries, of the LBS, Dumping, and Hazardous Wastes Protocols. In recognition of the close relationship between environment and health, a senior World Health Organisation (WHO) scientist works full-time on broad health issues within the framework of MED POL.



UNEP

REGIONAL ACTIVITY CENTRES (RACs)

Unique in structure, MAP RACs carry out environmentally related activities at the regional level, as agreed by the Contracting Parties, and coordinated by MEDU. With their bases in six Mediterranean cities, they play key roles in the implementation of various components of the Programme at regional, national and local levels. Financially supported by MAP Contracting Parties and respective host countries, and on hand to assist countries fuse development and environmental considerations in numerous ways, the RACs boost capacity-building in the region and reinforce the sense amongst Mediterranean countries that MAP is 'their' programme.

REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

Situated on Manoel Island, Malta, REMPEC is there to aid Mediterranean coastal states with their commitments under the Emergency Protocol, helping them build up their national response capabilities to be prepared for and to cope with major marine pollution incidents. The centre also facilitates cooperation between countries in combating accidental marine pollution from a range of hazardous substances including oil. REMPEC's crisis management work includes the dissemination of information before and during an emergency and the provision of training and

technical help. At the request of affected countries, it mobilises expertise in cases of emergency, if necessary from beyond the Mediterranean region. The centre will soon take on responsibilities relating to the Offshore Protocol. REMPEC is managed under the joint auspices of the United Nations Environment Programme and the International Maritime Organisation.

BLUE PLAN REGIONAL ACTIVITY CENTRE (BP/RAC)

Located in Sophia Antipolis, France, the BP/RAC adopts a broad and prospective approach to Mediterranean environmental problems in its work on sustainable development solutions for the region. The centre considers the interwoven tapestry of human activities such as urbanization, industry, agriculture, energy and transport, that impinges on natural resources including the coast and the sea. BP/RAC produces a range of carefully researched information on topics such as population trends on all Mediterranean states. Experts go on to produce scenarios for reconciling the environment and the realities of socio-economic development in a drive to help Mediterranean countries make decisions with the future in mind.

PRIORITY ACTIONS PROGRAMME REGIONAL ACTIVITY CENTRE (PAP/RAC)

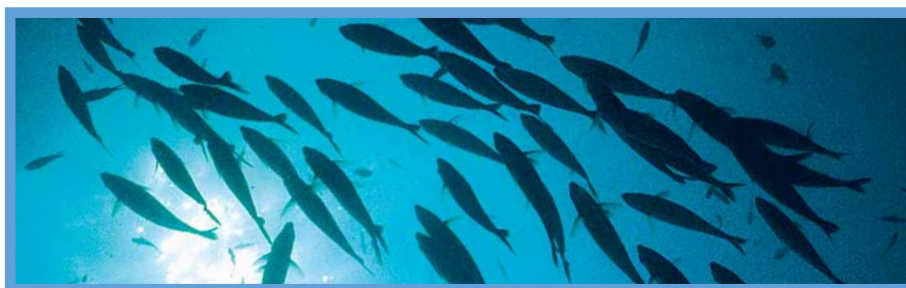
Situated in Split, Croatia, the main PAP/RAC objective is integrated coastal area management, a holistic approach to alleviating developmental problems in built up coastal areas relating to their impact on the environment. The aim is to address immediate problems of a developmental nature and their effects on the coastal environment and its resources, through priority actions in several fields, with a view to inducing sound environmental management practices. The centre offers technical assistance and coordinates local projects that typically involve the participation of many local bodies.

Other environmental themes PAP/RAC has focused on include water resource management, soil protection, the development of environmentally-friendly tourism and environmental assessment studies of coastal areas. The centre organises regular workshops and training programmes, and prepares guidelines for the implementation of actions related to these themes.

SPECIALLY PROTECTED AREAS REGIONAL ACTIVITY CENTRE (SPA/RAC)

From its base in Tunis, this centre focuses on the protection of Mediterranean species, their habitats and ecosystems. Responsible for assisting countries with the technical implementation of the SPA and Biodiversity Protocol, SPA/RAC is involved

with habitat management, the drawing up of legislation, the establishment and management of protected areas and the implementation of action plans for the conservation of endangered species such as the Mediterranean Monk Seal, marine turtles and marine vegetation. It is also occupied with the elaboration of biodiversity conservation strategies and the enhancement of national capabilities through training programmes. SPA/RAC plays an important role in the work of SPAMIs (Specially Protected Areas of Mediterranean Importance). The centre also promotes the exchange of information and experience among Mediterranean specialists and the involvement of relevant international organisations including NGOs.



A. Frantzis

ENVIRONMENTAL REMOTE SENSING REGIONAL ACTIVITY CENTRE (ERS/RAC)

Based in Palermo, Italy, ERS/RAC cooperates with countries to support planning and decision-making processes aiming at the sustainable development of marine and coastal areas through the application of data derived from remote sensing.

This technique of using satellite technology to survey land and marine surfaces, is a valuable environmental assessment tool complementary to more conventional methods. It is particularly effective for accurate monitoring of environmental states and changes over time and over wide areas. Such changes may be due to impacts of human activity or to natural phenomena. Raising awareness on the potential of these advanced techniques, the dissemination of their results and the boosting of the capacities of Mediterranean countries through accelerated use of satellite techniques are key ERS/RAC commitments.

CLEANER PRODUCTION REGIONAL ACTIVITY CENTRE (CP/RAC)

Cleaner production techniques, which reduce industrial wastes at source, are to be encouraged because industry is one of the major causes of pollution. The main activities of the CP/RAC, which is based in Barcelona, Spain, include publicising the concept of clean production and pollution prevention, and its advantages, to the

industrial sector, and the dissemination of tried-and-tested cleaner production techniques. The centre also organises training programmes, and promotes the exchange of experts, facilitating technology transfer within the region.

PROGRAMME FOR THE PROTECTION OF COASTAL HISTORIC SITES (100 HS)

The Mediterranean coasts feature the world's greatest concentration of historic sites and monuments, the rich legacy of 5000 years of successive civilisations and trade, conquests and conflicts. Known as '100 Historic Sites', this programme, with its base in Marseille, France, seeks to help protect approaching 150 threatened coastal historic sites, dotted throughout Mediterranean coastal areas. Priority fields encompass underwater archaeological sites including shipwrecks. The programme offers training in optimal site management practices.



M. Caparis

PARTNERSHIPS

MAP's regional influence is very much a product of its close interaction with a bevy of organisations, both governmental and non-governmental, who share MAP's commitment to the welfare of the Mediterranean region and its peoples and help MAP reach out to its wide target audience.

MAP works with various UN agencies such as the United Nations Development Programme, the World Health Organisation, the Food and Agriculture Organisation, the World Meteorological Organisation, the International Oceanographic Commission and the World Bank. Through its Euro-Mediterranean Partnership, as well as its status as a signatory to the Barcelona Convention, the EU works closely with MAP on legal and policy aspects of environmental protection.

The growing number of Mediterranean NGOs focusing on environment and development, reflects the rising public concern for and participation in the fusion of

these two spheres. MAP recognises the expertise and awareness-raising capabilities of NGOs and encourages their integral involvement in MAP activities and in networking.

International programmes such as the Mediterranean Environmental Technical Assistance Programme (METAP), which lends a hand with technical pre-project preparations and the Centre for Environment and Development for the Arab Region and Europe (CEDARE), with its remit to assist member countries in environmental management, technology transfer and policy development, also play important roles.

MAP LIBRARY

Located on the MEDU premises, the MAP library houses a collection of scientific periodicals, technical reports and reference publications on marine pollution, sustainable development, environmental law, climate change and related topics. It keeps copies of RAC publications, scientific and technical reports published by UNEP and other UN bodies as well as a complete collection of meeting reports and documents that is being transferred to CD-Rom. The library offers assistance and provides reference services and training to the Mediterranean scientific, professional and student communities.

MAP PUBLICATIONS

MAP brings out its own quarterly magazine. Published in Arabic, English and French, **MedWaves** covers latest MAP projects and key regional environmental and developmental themes such as the protection of endangered species and coastal zone management. It also features updates from RAC teams as well as summaries of MAP activities. MedWaves is distributed to a wide audience taking in government experts, public libraries, scientists, NGOs, Inter Governmental Organisations (IGOs), students, journalists and environmental ministries.

MAP Technical Reports, of which almost 130 volumes have been published to date, focus on legal, scientific, technical and socio-economic issues related to MAP's work. These reports are distributed to specialist libraries, universities, scientists, government agencies and NGOs.

MAP has published **State of the Mediterranean Environment Reports** detailing the state and pressures of the marine and coastal Mediterranean environment. Published in 1999, the most recent report was jointly produced with the European Environment Agency, while a new report is being compiled by BP/RAC.

The **MAP Website** <http://www.unepmap.org> offers broad information on MAP while serving as a useful source of news on imminent events. Browsers can download copies of selected meeting reports, the Barcelona Convention and its Protocols, MAP technical reports and submit queries.

EVOLVING IN LINE WITH CHANGING ENVIRONMENTAL PRIORITIES

In its first 25 years, this collective endeavour by Mediterranean countries in defence of their environment has grown in response to the changing circumstances of the environment it sets out to protect. This development also reflects the heightened contemporary understanding of the close relationship between conservation and development. Set up by the countries, together with the European Union (EU), in a bid to protect the Mediterranean Sea from escalating pollution problems in the mid 1970s, it has expanded its remit and today also concerns itself with pollution generated on land, due to the development process, and thus the whole fabric of coastal area living.

The Mediterranean Action Plan (MAP) was created in 1975 when representatives of 16 Mediterranean states and the EU, highly concerned about the state of the Mediterranean marine environment, got together in Barcelona under the auspices of the United Nations Environment Programme (UNEP). MAP called on Mediterranean governments to draw up and adopt a series of legally binding agreements on specific environmental issues and a regional programme of pollution monitoring and research (MED POL). At a second conference a year later, the Convention for the Protection of the Mediterranean Sea (the Barcelona Convention), an umbrella convention, was adopted, as were its two Protocols, one on the dumping of waste from ships and the other on cooperation in combating marine pollution in cases of emergency.

During its first twenty years, MAP addressed a broad range of issues relating to the protection of the marine environment and accumulated experience as a pioneering cooperation project between Mediterranean countries concerned about their environment. Shared intentions on specific environmental protection issues were consolidated into an additional four Protocols. These Protocols, which are updated when necessary, have provided a framework for the implementation of common actions for environmental protection in tandem with the valuable assistance of MED POL and the Regional Activity Centres.

The main MAP objectives were to assist the Mediterranean governments to assess and control marine pollution and to formulate their national environmental policies. The MED POL programme played a leading role in upgrading the technical capabilities of most Mediterranean countries, taking out 500 research contracts with national institutions between 1982-1995. MED POL also helped MAP countries establish marine pollution monitoring programmes. MAP built up a

scientific and information base which along with the Protocols can be credited for a large number of concrete actions taken by Mediterranean states such as environmental policies adopted in conformity with MAP requirements.



UNEP / V. Tsitris

MOVING TO ENCOMPASS COASTAL AND INLAND AREAS AS WELL AS THE MEDITERRANEAN SEA

As MAP has evolved, its original focus on the pollution of the Mediterranean Sea has widened in the light of observation and scientific evidence that most marine pollution originates on land. Mediterranean countries have begun to pay more attention to the environmental management of coastal areas. This need to broaden the range of concerns was further acknowledged by MAP Contracting Parties in the Genoa Declaration of 1985 which addressed the problems of the depletion of fresh water and the degradation of coastal areas, wetlands, ecosystems, forests and agricultural lands. MAP's focus gradually shifted from a sectorial approach to pollution control, to integrated coastal zone planning and natural resource management as the key tool through which solutions are being sought. The steady incorporation of additional Regional Activity Centres into the Action Plan has helped to support this broader focus.

THE SUSTAINABLE DEVELOPMENT LEGACY

In the late 1980s and early 1990s, global developments in environmental approaches confirmed and supported MAP's widening brief. In particular, Agenda 21, a document highlighting the relevance of environmental concerns to all aspects of development that was publicised at the 1992 United Nations Conference on Environment and Development (UNCED) in Rio, thrust the links between the environment and sustainable development into the public arena.

MAP responded in 1994, with the presentation in Tunis, of Agenda MED 21. This document, adapting Agenda 21 to the Mediterranean context, reflects the commitment of the Mediterranean states to the ideal of sustainable development. Implementing sustainable development in the framework of the Barcelona system, the Contracting Parties proceeded to extensively revise it. In 1996, the Mediterranean Commission on Sustainable Development (MCSD) was set up with a mandate to advise MAP states on sustainable development solutions and to offer them recommendations and proposals for action. The MCSD highlights the interrelationships between economic development and the environment, and the consequent need to involve the range of key social actors from NGOs to businesses to the public, in environmental conservation efforts.

MAP TODAY

MAP's remit was officially widened in 1995 to include sustainable development and to make it more action-oriented. It entered a new phase, MAP Phase II, and was renamed the Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal Areas of the Mediterranean. The Barcelona Convention and its Protocols were made more stringent, representing MAP's shift from expressing environmental goals as desired principles to formulating these goals within measurable frameworks, with compliance monitoring as a key aspect. These new legal texts impose a strict ban on nearly all dumping operations, protect the most vulnerable species and habitats and clamp down on most instances of the movement of hazardous wastes. They also give the public new rights on questions of information and participation and advance more effective coordination and cooperation at all levels.

The year 1995 also saw the adoption of priority fields of action that continue to steer MAP's progress. These include integrated water management, the fight against erosion and desertification, the management of forests and plant cover and that of genetic and marine living resources. Integrated coastal areas management priorities encompass waste management, agriculture, industry and energy, tourism and urban development as well as information provision and conservation of nature, landscape and sites.

Today, MAP is regarded as a working model of regional environmental cooperation. In particular, its country-driven approach and the sense of ownership of the programme among Mediterranean states at different stages of development and with differing political systems, are key factors in its success.

THE STATE OF POLLUTION IN THE MEDITERRANEAN REGION

Since MAP members launched a concerted effort in 1975 to clean up the Mediterranean environment, individual countries and the region as a whole have made considerable progress in the protection of the Mediterranean Sea against chronic or accidental pollution. A recent joint European Environment Agency/MAP study highlights the generally good state of the open waters in the Mediterranean Sea. The coastal regions, however, remain under considerable stress as a result of human activities, with only a very small percentage remaining in a pristine condition. Current pollution threats include organic and microbiological pollution, heavy metals and oil spills.

Areas that feature the heaviest concentration of pollutants from human activities are known as pollution hot spots. These clusters of severe pollution problems are generally found in coastal areas with semi-enclosed gulfs and bays near important harbours, big cities and industrial areas and constitute a major Mediterranean problem.

MARINE POLLUTION

Accidental pollution threats

The high density of shipping traffic in the Mediterranean Sea means an increased risk of a maritime accident resulting in a major spill. It is estimated that around 50% of all goods carried at sea are potentially hazardous, while about 30% of the total volume of world sea-borne traffic originates from or is directed to the 305 ports scattered along the Mediterranean coastline or passes through Mediterranean waters. Rising industrialisation and petroleum refining in the southern parts of the region will only increase the volume of hazardous substances transported by ships.

Oil pollution risks to human health, economies, and the ecology of the area affected, are a particular concern. The Mediterranean Sea is a major route for transporting oil from the Middle East and North Africa to Europe and North America. Most of the Mediterranean countries are not in a position to rely on their own resources when dealing with a major marine pollution accident.

According to REMPEC records, 151 maritime accidents resulting in oil spills were reported in the Mediterranean region between August 1977 and December 1999. Although only five oil spills of more than 10,000 tonnes were recorded during this period, the incidence of pollution-causing accidents is nevertheless considered to be too high, and accidental spills, regardless of their size, have caused

localised damage to the Mediterranean marine and coastal environment. A major oil spill could occur at any time, particularly along the main sea routes, around ports and in the vicinity of the more important oil loading and unloading terminals. This threat is made worse by the use of several ageing tankers in Mediterranean waters. Since 1988, when data on accidents involving hazardous substances other than oil started to be collected, REMPEC has recorded 79 accidents causing or likely to cause pollution of the Mediterranean Sea.

Routine pollution

Land-based activities (urbanisation, industry, tourism and agriculture) represent the main source of pollution into the Mediterranean Sea. Marine pollution from ships is largely due to inadequate implementation of international standards. In the course of routine operations, ships may discharge oily wastes, and other harmful liquid substances, sewage and rubbish into the sea - a significant source of marine pollution. An estimated one million pleasure boats of all sizes were moored or registered in Mediterranean ports in 1997. In addition, aircraft frequently dump fuel into the sea. Offshore exploration and exploitation of the continental shelf and the seabed and its subsoil, e.g. rig construction, are also a significant potential pollution source.



POLLUTION OF COASTAL AND INLAND AREAS

The Mediterranean Sea is a dumping ground for municipal and industrial wastes and the destination of pesticides and fertilisers carried via rivers or through runoff which can also include hazardous industrial chemical elements. The results of using the Mediterranean in this way are often severe. Deposits of excessive nutrient loads from rivers and urban and industrial effluents can lead to eutrophication which variously affects almost all Mediterranean coastal states. Severe manifestations of this damaging altered state of the marine ecosystem are especially prevalent in some Mediterranean enclosed coastal bays which receive elevated nutrient loads from rivers as well as direct discharges of untreated domestic and industrial wastes. Under certain conditions the water surface becomes covered by a stagnant film of thriving algae that

can consume dissolved oxygen and prevent the water from sustaining other forms of life. Consequences include a reduction in the diversity of marine species and human health risks arising from the proliferation of algal species that produce potent toxins. These can trigger gastrointestinal diseases in humans when consumed. Eutrophication can also result in negative socio-economic effects on tourism and fishing industries.

Overall, the main risks to human health from sea pollution arise from contact with seawater or sand polluted by pathogenic micro-organisms such as bacteria and viruses or from consumption of contaminated seafood. In recent years, several Mediterranean countries have imposed temporary bans on shellfish consumption in the interests of safety. These bivalves have been found, on occasion, to bioaccumulate pollutants of an industrial or human origin. A number of diseases have been associated with bathing in polluted waters. These include ear, eye, skin and upper respiratory tract disorders.

Human activities on land are responsible for more than 80% of the total pollution in the Mediterranean Sea. Industry, agriculture and dense concentrations of residents and tourists in large coastal towns and cities generate huge quantities of liquid and solid waste. Levels of atmospheric pollution are intensified by the burning of fossil fuels for vehicles and for domestic heating. These activities impact on the quality of water and the atmosphere and therefore on the quality of life.

SEWAGE

Sewage is one of the most significant sources of pollution affecting the coastal environment. Only around 55% of 525 coastal towns with more than 10,000 inhabitants, studied in MAP countries, and for which data exists, are served by a wastewater treatment plant. Improperly discharged municipal wastes can have a serious impact on human health, marine and freshwater ecosystems, fishing and other economic and recreational activities.

SOLID WASTE

Between 30-45 million tons of municipal solid waste (rubbish) is generated by coastal Mediterranean areas each year while some disposal methods impact badly on the environment. The inapt siting of landfills, for example, can accelerate the transfer of solid waste to the marine environment.

Mediterranean coastal urban centres remain the main source of solid waste in the Mediterranean while waste from leisure boats is a cause for concern. Plastic debris comprises 75% of the Mediterranean coastal litter which ends up floating on the water surface or sinking to the seabed.

INDUSTRIAL WASTE

Industrial pollutants are produced in a plethora of installations along the Mediterranean coast and catchment basins of rivers, while up to 80% of industrial effluent in several Mediterranean countries is still discharged untreated into the sea.

Some non-degradable organic materials such as surfactants can give off more toxic by-products when metabolised by natural bacteria. Industrial pollutants such as heavy metals and their related organic compounds remain a cause for concern. Tributyltin, used as an anti-fouling material in marine paint, is an example. Industry may also dispose of solid waste on land, in the form of landfill. Though cleaner production practices are gaining ground as a tool for increasing competitiveness, lack of environmental awareness among company management means that environmental aspects of production are too often considered a superfluous cost.

The management of hazardous wastes is a serious issue in the Mediterranean region. Such wastes are often dumped illegally or mixed in with municipal waste which increases the risk of contamination of water, and marine pollution. Transboundary movements of hazardous wastes and their disposal pose additional risks. These wastes could become a serious potential threat particularly for the region's developing countries. Only a small proportion of this waste is disposed of appropriately.

AGRICULTURE

Agricultural runoff into rivers and estuaries is a source of pesticides and of excessive amounts of nutrients from fertilisers. Pesticides, at certain concentrations, kill fish in areas of poor water circulation and can contaminate drinking water supplies. Chlorinated pesticides are just some of the many persistent organic pollutants originating in industry as well as in agriculture, that are of great concern to countries throughout the Mediterranean region. Such pollutants are highly resistant to photolytic, biological or chemical degradation and accumulate in living organisms, becoming more concentrated as they move up the food chain. They are toxic to humans when consumed through seafood.

URBAN AREAS

Today's Mediterranean coastal cities offer most residents a diminished quality of life. This is the product of overcrowding, an economic decline in many city centres, and air and noise pollution caused by excessive car use. Traffic congestion is a growing problem and set to worsen. The number of cars in the region is expected to treble over the next 30 years. Clogged city streets also exert a major toll on economic productivity while impacts of heavy car use also include worrying traffic accident rates and high levels of energy consumption.

Though Mediterranean birth rates are declining overall, sprawling coastal urban areas to which inland populations gravitate, along with accelerating levels of seasonal tourist populations and uncontrolled energy and water consumption amongst these populations, all contribute to swelling pollution loads.

THE MAP ASSAULT ON POLLUTION

MAP employs a multifaceted approach to launch a strong, many-sided offensive on these complex pollution problems. Through five of the MAP Protocols, Mediterranean countries have dedicated themselves to tackling pollution on several fronts as part of their drive to assess, control, prevent and, if possible, eliminate pollution. MED POL and the RACs are vehicles of MAP's capacity-building and information-sharing strategies. Through their implementation of these Protocols and additional MAP response strategies to pressing problems, they are addressing pollution issues with the Mediterranean countries. With respect to the combating of marine pollution, for example, MAP is helping to strengthen institutional capacities of Mediterranean countries, and supporting them with technical assistance and the provision of scientific equipment. These efforts are bolstered by cooperation with a wealth of UN bodies and concerned NGOs, international organisations, local authorities, entrepreneurs and other partners.



UNEP / J.E. Didonato

Protocols play a key role in the MAP drive to conquer pollution. The role of cleaner production in the alleviation and eventual elimination of pollution loads is emphasised in both the LBS and Hazardous Wastes Protocols, while the former identifies wastewater treatment and disposal as crucial in the elimination of pollution from land-based activities. Under the Dumping Protocol, regional level activities include the collection of information on the few dumping activities, such as the dumping of dredged material from harbours, that are permissible. The Offshore Protocol aims to regulate offshore activities in an effort to protect the marine environment. These activities include prospective drilling, offshore loading of ships, and the disposal of waste from installations. The offshore disposal of non-biodegradable wastes such as plastic bags, for instance, is prohibited, as is the disposal of harmful

substances such as mercury compounds or those proven carcinogenic in or through the marine environment. The Emergency Protocol presently addresses pollution emergency issues and the intention is to revise it by expanding it to encompass routine operational discharges into the Mediterranean Sea. In doing so it will make the International Convention for the Prevention of Pollution from Ships and its Protocols (MARPOL 73/78), as well as all relevant IMO conventions relating to the prevention of pollution and safety at sea, more effective in the Mediterranean region. It would thus cover leisure activities linked with nautical tourism, particularly commercial boats and cruise ships, a growing source of Mediterranean pollution.

MED POL is a diverse programme for pollution assessment and control in the Mediterranean which has evolved from a pioneering research tool carrying out pilot projects to assess marine pollution, to a body helping countries build the capacity to monitor and control marine pollution, in particular from land-based activities. It encourages the use of synchronised scientific standards, national monitoring programmes and other devices enabling countries to manage problems caused by pollution. These have a control edge allowing better evaluation and comparison between countries. For instance, through monitoring of biological effects, scientists judge if the environment is deteriorating by studying the physiological and biochemical impact of pollutants on, for example, the reproductive cycle of fish. Together with classical chemical monitoring, this provides a more holistic picture of pollution effects. Compliance monitoring, by measuring what is actually being done for the environment, helps identify bottlenecks and so assists countries to facilitate their resolution. For instance, countries can check whether industry is complying with legislation.

The programme has a contract with the Monaco-based Marine Environmental Laboratory of the International Atomic Energy Agency (IAEA) for data quality assurance of MED POL's analytical data. IAEA and WHO, in the framework of MED POL, have responded to gaps in the practice of national laboratories by the organisation of regular intercalibration exercises to introduce and standardise practices around the entire region and thus improve data quality in both the microbiological and chemical fields. WHO and MED POL have also cooperated to offer training courses in wastewater treatment. When work on the identification of regional hot spots revealed a shortage of trained personnel for these plants, regional training in France, Greece, Egypt and Israel was swiftly organised.

MED POL's research component is being restructured to allow it to respond more dynamically to arising pollution issues. Current research themes include innovative sewage treatment technologies for island mountain villages and cost effective methods of recycling. Information is being centralised on technical databases making it more easily accessible to Mediterranean countries.

The Strategic Action Programme (SAP) is a new action-oriented MED POL initiative deriving from the terms of the LBS Protocol with a timetabled approach to tackling and eliminating the range of Mediterranean pollution problems by facilitating and accelerating the implementation of national environmental goals. Setting out to eliminate pollution stemming from land-based sources, it works towards the phasing out of inputs of substances into the Mediterranean Sea which are toxic, persistent and liable to bio-accumulate. It also targets the region's 109 identified pollution hot spots and 51 sensitive areas.

The SAP is a 25-year plan with built in scope for the revision of detailed operational timetables at two-year intervals. Its initial three-year phase is being mainly funded by the Global Environment Facility and the French GEF and involves a host of partners including METAP and several IGOs and NGOs.

The SAP sets out to have National Action Plans up and running by 2005 to help countries fulfil their pollution clean-up objectives. These will tackle inadequate national legislation and institutional and enforcement structures at national and local levels, by focusing on sustainable and integrated environmental management capacity building.

Through the adoption of the SAP, MAP countries have made a commitment to safely dispose of sewage from towns and cities with more than 100,000 inhabitants by 2005 and to the intensive reduction of pollution at source, via cleaner production, for instance. Other national obligations include strategies for the promotion of sustainable agriculture involving controlled use of chemicals as well as targets for reduced air pollution.

RAC EFFORTS REGARDING THE PREVENTION AND CONTROL OF POLLUTION

As certain countries lag behind in terms of their level of national preparedness to deal with pollution emergencies, which can hinder the process of mutual assistance, **REMPEC** is helping them to meet their obligations under the Emergency Protocol.

In order to increase the capabilities of the Mediterranean coastal states to deal with marine pollution accidents, the centre provides them with: constant support in developing their port and national systems for preparedness and response as part of contingency planning; help in setting up international agreements for cooperation and mutual assistance in case of emergency and in the training of personnel. REMPEC is coordinating a new Mediterranean Technical Working Group, whose function is to facilitate the exchange of scientific and technological information aimed at assessing the nature of risks from accidental marine pollution and promoting remedial measures for such pollution.

At a sub-regional level, REMPEC is working on the development of operational agreements for the combating of major marine pollution accidents, such as a current REMPEC project involving Cyprus, Egypt and Israel. The objective is to eventually have the entire Mediterranean region covered by such sub-regional agreements.

As part of its wider remit taking in responsibilities related to the prevention of pollution from ships, the centre is assisting the coastal states to set up appropriate port reception facilities for the collection of liquid and solid waste generated by ships. These wastes encompass oily and chemical residues, sewage and rubbish.

CP/RAC, through the dissemination and promotion of cleaner production practices and techniques, contributes to the reduction of Mediterranean industrial pollution. It plays a catalytic role among an active group of cleaner production actors in the region. The centre fosters the exchange of views and cooperation between industrial units; publicises successful company case studies; carries out studies on pollution prevention and organises training activities. CP/RAC's outreach strategies are sensitive to many specifically Mediterranean conditions such as the numerous small to medium sized industrial units in the region.

Cleaner production involves the continuous application of an integrated preventative environmental strategy to processes, products and services. It seeks to minimise waste through pollution reduction at source and internal recycling. For processes, the strategy focuses on the conservation of raw materials, water and energy, the use of alternative energy sources and the reduction of hazardous raw materials and of the quantity and potential toxicity of emissions and wastes. With regard to products, it sets out to reduce negative impacts on the environment during the product's life cycle from raw material extraction to final disposal. It also means the incorporation of environmental concerns into the design and provision of services.

PAP/RAC is devoting attention to spurring the creation of new wastewater treatment plants in the Mediterranean. Its guidelines on wastewater management have been disseminated widely via national Focal Points. PAP/RAC assessments of tourist carrying capacity are designed to assist Mediterranean decision-makers to aim for realistic limits on the number of tourists accommodated and thus relieve pressures on over-burdened natural resources.

ERS/RAC is committed to keeping abreast of contributions to the combating of pollution offered by research into and the application of remote sensing techniques.

The centre monitors the presence of suspended matter in the marine environment such as sewage and oil spills, identifies land-based sources of pollution and studies marine and atmospheric dynamics influencing the movement and dispersal of pollutants.

NATURAL HERITAGE

Whilst the region's archaeological treasures have been extensively studied and their disintegration in our industrial era is a cause for concern, Mediterranean nature and its evolution have been less of a focus of attention until recently. The Mediterranean is rich in flora, fauna and landscapes, much of it unique to the region, but this natural environment is coming under intense pressure from human activity including tourism, urbanisation, coastal zone overcrowding, and transport. The resultant degradation of the natural environment is bad news for many plant and animal species and beauty spots such as sand dunes. Heavy shipping activity, for instance, poses a constant threat of deadly oil spills while introducing non-indigenous species via vessel hulls and ballast waters which can upset native ecosystems. Fishing practices do more than deplete stocks: nets from trawlers operating close to the shore often destroy biologically significant habitats such as sea grass meadows. Sprawling towns expel waste and atmospheric pollutants and encroach on vital natural habitats such as wetlands. Wetland loss and degradation has been identified as a serious threat to nine out of the 33 colonial water bird species that breed along the Mediterranean coastline. Loss or reduction of habitats that could potentially lead to extinction has been reported for endangered species such as the Mediterranean Monk Seal, sea turtles and water birds while meadows of the marine *Posidonia Oceanica* plant are protected.

MAP RESPONSES

Mediterranean countries vary greatly in their ability to participate in the environmental initiatives needed to protect and manage natural heritage. MAP aims to boost competencies, and technical resources, thus improving national institutional capabilities in the implementation of conservation policies. This needs to be supported by the strengthening of national legislation. The protection of endangered and threatened species in the Mediterranean is crucial. Eighteen cetacean species (examples of which are whales and dolphins) are considered at risk. The Mediterranean Monk Seal is on the World Conservation Union's list of the 12 species in the world most threatened with extinction. Threats are all human-related therefore public support is a crucial factor.

SPA/RAC has a remit to protect the region's natural heritage and works to implement the SPA and Biodiversity Protocol. This aims to establish well-managed specially protected areas in MAP countries, to help safeguard long term biological

diversity in the region, and to conserve marine and coastal ecosystems as well as sites of cultural interest. It also seeks to set up a list of Specially Protected Areas of Mediterranean Importance (SPAMIs). Related measures include the regulation of the introduction of non-indigenous or genetically modified species. Significantly, areas highlighted for their natural or cultural value can play a role in reviving economically depressed neighbourhoods through eco-friendly tourism. Its work is also in tune with broader relevant international agreements such as the Bern Convention on the Conservation of European Wildlife and Natural Habitats and the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

As knowledge of Mediterranean natural heritage is still fragmented, an overall assessment of the status and where possible, evolution of biological diversity in the Mediterranean so as to better protect it is a priority. For instance, SPA/RAC assists countries in the preparation of marine habitat inventories as part of national biodiversity strategies.

ERS/RAC has regularly monitored vegetated and non-vegetated areas throughout the Mediterranean region, and has contributed towards the classification of regional vegetation. **PAP/RAC** devotes attention to reversing soil erosion and desertification trends.

SPOTLIGHT ON MARINE TURTLES

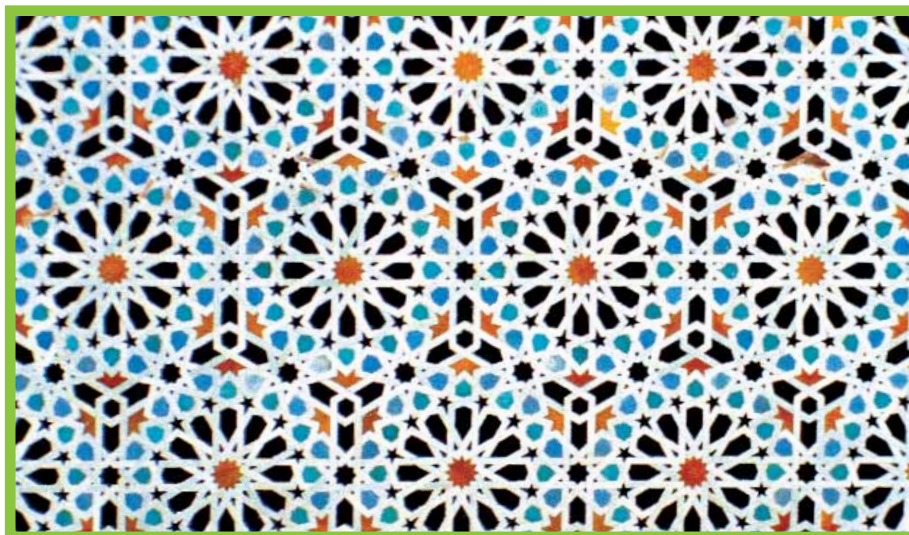
The five species of Mediterranean marine turtle are struggling to survive. The most serious identified threats are deterioration of critical habitats such as wintering areas that play a key role in the creatures' life cycle. Other dangers are incidental or intentional capture in fisheries, pollution and new leisure forms such as jet skiing. In 1989, having already prioritised turtle protection for several years, MAP adopted an action plan for their conservation that has been coordinated and put into practice by SPA/RAC. Activities to date have included field studies to assess marine turtle nesting in close collaboration with several NGOs and a coordinated turtle tagging programme. Recommended national level activities facilitating the enhanced protection of marine turtles have been drafted for most MAP countries. MAP priorities for turtle protection involve greater collaboration between fishermen and conservationists and improved information flow between scientists and the wider community.

CULTURAL HERITAGE

Approximately one third of world historic sites, included on the UNESCO World Heritage List because they are considered to be of outstanding universal value, are located in the Mediterranean region. The public is increasingly concerned, however, that the conservation of many of these sites, representing the preserved output of

world-influencing civilisations, has seemed to take a back seat in the light of competition from rapid development, industrialisation and urbanisation in recent years.

While sites may be at risk of degradation from natural causes such as earthquakes or fires, damage caused by human activities such as atmospheric pollution is a major issue. The sheer volume of visitors has threatened the sustainability of some historic sites. Sites may be in built up urban areas and require protection from urban pollution, including noise. A number of sites are underwater, for instance part of shipwrecks or buildings that have become submerged.



M. Caparis

MAP APPROACHES

The Programme for the Protection of Coastal Historic Sites has helped Contracting Parties single out well over 100 historic coastal sites of common interest for intensified protection against the threat of damage. Scattered around the Mediterranean region, these chosen sites meet certain criteria. For instance, that they had a considerable influence on the development of architecture or the arts, or that they reflect the splendour of one of the great ancient civilisations, such as that of the Phoenicians.

Work is in progress to incorporate site preservation into land use planning and coastal zone management. Pan-Mediterranean information exchange on optimal practices and temporary halting of development work upon discovery of antiquities are examples of other protection measures. Better safeguards are needed against looting of archaeological remains including underwater sites which are also vulnerable to activities such as the dumping of waste and dredging activities.

**MEDITERRANEAN COASTAL AREAS -
A TRUE-TO-LIFE PORTRAIT**

In recent decades, Mediterranean coastal areas have borne the brunt of rapid development and in a way that is increasingly apparent to tourists as well as residents. Problems are fanned by urbanisation and industrialisation along the region's coastal margins. Population centres along the Mediterranean coast are being fuelled by intense economic change that lures an influx of rural migrants whilst environmental protection infrastructures remain weaker. In parallel with this growth, the Mediterranean accommodates the world's most intensive tourist industry. Tourism and leisure infrastructures represent a huge extra strain on coastal areas.

The many Mediterranean islands present specific sets of environmental management challenges. The very heavy tourist flows that converge on these islands during peak seasons represent the greatest pressure brought to bear on them. These islands, usually more mountainous than mainland areas, are also typically more arid and thus more subject to soil erosion. Island natural resources, including flora and fauna, are particularly vulnerable to disturbance and destruction by human activities and problems encountered relate to scarcity of water, energy use, often inadequate waste disposal facilities and the difficulty of planning island development with the limited financial and administrative planning resources available.

COASTAL AREAS - A SCRAMBLE FOR SPACE

The resident population of the riparian states of the Mediterranean was 246 million in 1960, 380 million in 1990 and 427 million at the start of this new millennium. Around 145 million people currently make up the permanent population of the relatively narrow Mediterranean coastal regions. This figure is dramatically amplified by very intensive seasonal tourism.

The prognosis is not rosy and resembles a recipe for the creation of more pollution hot spots. Population increases will only put further stress on already burdened natural resources such as fresh and marine waters and energy, and compete for the ecological space of flora and fauna and thus the maintenance of biological diversity. They will further burden overstrained labour and housing markets and associated public services (water supply, roads, sanitation and transport) and result in more waste. The job of treatment and disposal of urban and solid liquid wastes is already a major environmental challenge especially in summer months when the population of seaside resort towns can swell sevenfold.

The deterioration of the urban environment and quality of life has a negative impact on public health. Growing numbers of private cars are becoming the major cause of air pollution that has triggered respiratory ailments in humans and also threatens historic sites.

Swelling populations and consumption patterns lead to demand for more food and the main response from agriculture, itself losing out in terms of land space to economic development such as road building, is to intensify farming practices. This means a heavier demand on scarce water for irrigation and heavy use of polluting chemical fertilisers and pesticides. Both wild and cultivated fish stocks are vulnerable to pollutants while fish farms discharge polluting chemicals such as fungicides into the surrounding sea.



Corbis / J. Blair

Pollution from inadequate management of municipal wastes is exacerbated by effluent from industries that rise up alongside urban populations. Large commercial harbours and heavy industry complexes contribute to the creation of pollution hot spots. Industry tends to become established around main port-city hubs, particularly those industries requiring abundant cooling water and a relatively easy way of disposing of waste on the coastline or along the major rivers, in turn having an adverse effect on animals and plants. Despite allocation of specially protected areas, sand dunes, badly affected by excessive numbers of bathers, need greater protection. Coastal erosion is causing damage to more than 30% of beaches in EU Mediterranean countries. Salt marshes and wetlands, vital habitats to so many species, especially birds, are also sought after by construction for infilling, drained to create agricultural lands, and sometimes used as waste dumping grounds while large tracts of forests are burned annually.

The pressure from tourism, especially in the Northern Mediterranean, is one of the problems that have to be effectively managed to avoid any further degradation of the marine and coastal environment. The number of tourists visiting the Mediterranean region as a whole jumped from 58 million in 1970 to 95 million in 1980 to 150 million in 1990 and to 187.5 million in 1997. The number of inter-

national and domestic tourists to Mediterranean coastal regions is expected to double from 135 million arrivals in 1990 to 235-350 million in 2025. Such tourism only intensifies the coastal competition for space and natural resources such as water.

MAP APPROACHES TO THE MANAGEMENT OF COASTAL AREAS

Integrated Coastal Area Management

Integrated Coastal Area Management (ICAM) is a holistic environmental approach which sets out to deal with the grid of coastal area environmental problems collectively on the understanding that they are interlinked. This approach to sustainable management and coordinated public policy demands the involvement of a range of sectors, stakeholders, administrative levels and planning processes. In many cases, the participation of adjacent areas, and even countries, is vital. This is because certain negative environmental pressures originate beyond the confines of the areas hallmarked for protection. A move to protect turtle nesting grounds which happen to compete for space with a popular Mediterranean island's bathing beaches, for example, is more likely to succeed if hoteliers, neighbouring local authorities, residents and tourists are all part of the picture.

Through ICAM, MAP is seeking to reverse these coastal negative trends so often the result of a sole consideration for short-term economic advantages. By anticipating and preventing irreversible destruction of resources, and by implementing pilot coastal area management programmes in worst affected coastal areas, it is moving to integrate informed management of natural and cultural heritage into planning and development activities. MAP would like ICAM to gradually become the common approach to tackling problems affecting Mediterranean coastal areas.

Coastal Area Management Programmes

Coastal Area Management Programmes (CAMPs) are MAP initiatives aiming at the introduction of ICAM at local or national levels and institutional strengthening and capacity-building, in an effort to rehabilitate areas with the heaviest load of environmental problems. These projects are a form of advanced collaboration between MAP, national and local authorities and international financial bodies. They are based on the principles of sustainable development, integrated planning and the management of Mediterranean coastal areas. Thirteen CAMP projects have been implemented since 1989 in various parts of the Mediterranean. Further projects are ongoing or in preparation.

CAMPs are finite pilot projects, lasting an average of three to four years, with countries nominating areas most in need of ICAM assistance to the Contracting Parties

for approval. The country itself implements the CAMP with MAP acting as catalyst through help in funding and training provision, and significant input from RACs.

CAMPs present an interesting opportunity for MAP to work at local level in coastal regions, kickstarting a range of actors and sectors into working together. These projects routinely propose further planning or institutional strengthening activities, on completion. Analyses show, for example, that on the Greek island of Rhodes, in Kastela bay, Croatia and on the Syrian coast, CAMPs have sparked follow-up projects carried out by other actors. The significant improvement in institutional capacity (particularly in Albania, Izmir bay, Turkey, and on Rhodes) and thus in the sense of 'ownership' of the projects, along with enhanced local environmental awareness, are considered to be the CAMPs' best achievements. Indicating the growing Mediterranean emphasis on the sustainable management of coastal zones are the introduction of protection legislation and the emergence of national agencies for coastal zone planning and protection such as APAL in Tunisia and Conservatoire du Littoral in France. Greater public and private participation remains a challenge.

RAC and MED POL roles in coastal zone management projects

PAP/RAC has played a major role in the implementation of the MAP ICAM efforts. Acting as coordinator of most CAMP activities, the centre has helped boost the capabilities of local and national institutions in areas such as the integrated management of water resources and urban liquid waste, drawing local authorities and experts into the implementation of the ICAM process. It has completed several studies for the benefit of CAMP project areas, such as carrying capacity analyses on tourism. PAP/RAC has also assisted in the development of national sustainable strategies, looking at specific coastal management issues taking in the management of cliff instability, and coastal sand reservoirs.

The centre has prepared a detailed manual on the implementation of CAMPs on the basis of which future CAMPs will be prepared. It also works on the organisation of training courses on Mediterranean ICAM initiatives. PAP/RAC has publicised its assessments of Mediterranean ICAM initiatives, including implementation recommendations to a wide variety of Mediterranean country institutions and experts.

MED POL has also participated in the MAP CAMP projects, for example by identifying pollution sources and helping areas with measures of pollution control and abatement.

For **BP/RAC**, CAMP projects represent an exciting opportunity to engage with the interface of environment and development. The centre has used an approach that is both curative and anticipatory as a result of the implementation of local

prospective study exercises. As part of CAMP projects, BP/RAC has, for instance, identified key development actors including NGOs, local authorities, mayors, the government, various ministries, the university, industries, and family enterprises. Having identified their respective roles, the centre has successfully got them working together. This type of cooperation has encouraged fresh ways of viewing development and each other among the varied participants and fostered a longer term perspective amongst these developmental actors involved. BP/RAC has been able to offer CAMP target areas a set of alternative development paths focusing equally on environmental protection and economic efficiency.

Activities that **SPA/RAC** has contributed to CAMPs include the training of local experts in habitat management and surveying techniques and the planning and management of natural areas encompassing historic sites, recreational spaces and wetlands. The centre has helped CAMP project areas with the preparation of long term biodiversity strategies and with assessments of marine ecosystems and their protection.

The involvement of SPA/RAC with CAMPs has extended to work on community outreach projects seeking to foster a broader public appreciation of and thus respect for the Mediterranean natural heritage. A drive to highlight the beauty of nature to the wider community as part of a CAMP project, involved SPA/RAC in the creation of displays in key public spaces such as transport amenities.

CAMP projects offer **REMPEC** experts the chance to work with designated regions on specially tailored contingency plans for marine pollution emergencies. The centre has been involved with the introduction of sensitivity mapping for oil pollution response. This procedure is a proactive approach to possible oil pollution accidents. It helps countries set priorities in advance identifying coastal areas that are especially vulnerable in terms of their natural resources and/or their economic function.

CAMPs represent an ideal opportunity for **ERS/RAC** to help Mediterranean countries incorporate the insights of data gathered through remote sensing into their development schemes drawing together planners, decision-makers and remote sensing experts to examine links between environmental priority requirements and remote-sensing derived information. Through CAMPs, the centre has, for example, helped countries measure desertification and soil resources to assist local authorities in the planning of soil conservation measures and to monitor coastline changes due, for instance, to erosion phenomena. In 1999, ERS/RAC launched the Space Techniques-based Environmental Projects and Programmes in the Mediterranean database (STEPINMED) on the Internet. This gives Mediterranean countries and the MCSDD easy access to examples highlighting the contribution of remote sensing techniques to the fulfilment of environmental management targets.

THE CASE FOR SUSTAINABLE DEVELOPMENT

Looking at MAP's work, it becomes evident that as the environment cannot be compartmentalised, neither can solutions to its problems. Linking the long term interests of this complex entity – the environment – and so peoples' quality of life and by implication that of their descendants, with economic development was essentially the message of the UNCED Rio conference in 1992. This is what sustainable development is really about.

Having highlighted most of the major environmental challenges, the influence of the idea of sustainable development and examined the case for integrated coastal areas management in the Mediterranean (which already rests on the premise of the interaction of environment and development) it is a logical step to review specific MAP efforts towards the integration of these two spheres.

THE ROLE OF THE MEDITERRANEAN COMMISSION ON SUSTAINABLE DEVELOPMENT

The existence of the Mediterranean Commission on Sustainable Development (MCSD) demonstrates the commitment of MAP Contracting Parties to working towards integrating environment and development in the entire region. The MCSD is unique globally due to its pioneering structure putting key local development decision-makers such as business actors on a par with state representatives. It offers a promising framework for the definition of a genuinely Mediterranean sustainable development strategy.

The MCSD advises MAP countries on the implementation of sustainable development paths based on the work carried out by RACs, regional and national observatories, specialised international agencies and centres of expertise such as research bodies. It reviews problems encountered with regard to the integration of the environment in national policies. The MCSD also identifies innovative environmental methods and technologies adapted to the Mediterranean context, facilitates information sharing to boost national capacities for environmentally-related action and makes recommendations to strengthen MAP cooperation with international financing institutions.

Seeking a compromise between the legitimate needs of development and the delicate environmental balances in the Mediterranean region is no easy task. Even so, the MCSD is proving itself a forum for constructive dialogue and is focusing on key themes in its drive for tangible outcomes. In its relatively short life, the MCSD has come up with proposals for action on: water demand management; the

sustainable management of coastal areas; tourism and sustainable development; indicators (comparative tools for measuring sustainable development achievements) and public participation and awareness-raising. The MCSD has also concentrated on the following topics as they relate to sustainable development: industry; free trade and the environment, and urban development. Working groups follow up these specific fields and report to the main MCSD meetings held annually. They go on to submit recommendations and proposals for action and adoption to the Contracting Parties. MCSD themes in the pipeline include waste management, agricultural and rural development, energy, transport and consumption patterns.

The inclusion of an active rotating contingent of 15 local authorities, business representatives and NGOs joining the 12 representatives of the Contracting Parties to make up the 36-strong MCSD membership, helps ground the MCSD in the everyday realities of life in the Mediterranean.

SUSTAINABLE DEVELOPMENT PERVADES THE WORK OF THE RACs AND MED POL

The integration of environment and development is a key goal of the RACs and MED POL, who are well aware that the management of environmental issues can only be effective if it is part and parcel of development. As facilitators of national capacity-building initiatives, they want environmental considerations to play a greater role in everyday life. All MAP components aspire to this integration, adopting a proactive environmental approach, making them entirely in tune with sustainable development thinking.

BP/RAC is not merely trying to make good the damage done but setting out to anticipate future environmental states based on identifiable trends. The centre studies present and future environmental and developmental interactions in the Mediterranean basin on the basis of several hypotheses relating to growth in areas like human population, urbanisation, trade and energy use. It also considers their related impacts on natural resources such as water, soil, the coastal fringe and the sea. In particular, it elaborates a series of likely and alternative scenarios to encourage Mediterranean decision-makers to integrate environment and development more wisely.

Since the adoption of MAP's Phase II, BP/RAC has played a key role as a support centre for several of the MCSD's thematic working groups. BP/RAC initiated the Mediterranean Environmental and Development Observatory (MEDO). MEDO aims to contribute to a better understanding of environment and development links, assessing the state of the environment and the MAP countries' capacities for action, and providing decision-makers with data in support of sustainable development. The wealth of published 'fascicules' is a testament to this realised objective.

PAP/RAC, in its priority integrated coastal zone management activities such as the production and pan-Mediterranean dissemination of guidelines on key ICAM goals, and its regional ICAM workshops, demonstrates the necessity of marrying environmental concerns with development.

Maritime trade, offshore activities, shipping and oil/chemical industries, nautical tourism and port activities all play an important and growing role in the Mediterranean. **REMPEC** is working closely with the Mediterranean states to assist them to fulfil their environmental responsibilities in these spheres within the parameters of sustainable development in the region. **CP/RAC**, meanwhile, contributes in a proactive way to promoting cleaner production among Mediterranean industrial producers and thus redirects industrial development towards a greater respect for the environment.

The work of **SPA/RAC** in fostering the protection of Mediterranean nature involves it in ongoing dialogue with business interests while data generated by **ERS/RAC** is at the disposal of development actors. The success of **MED POL**'s SAP Programme hinges on the integral involvement of key community decision-makers. The sustainability of the region's historic sites within the envisaged growth of cultural tourism is equally dependant on close collaboration with the tourism industry.

SPOTLIGHT ON TOURISM

Tourism is crucial to Mediterranean economies, both at the national and local level. It is an asset, however, that exerts dramatic pressures on Mediterranean natural resources. MAP countries face the substantial challenge of managing tourism, set to increase as the region becomes more peaceful and developed, while preserving the environment.

Tourism offers a clear illustration of why the integration of the environment and development makes sense. As the main earner for most Mediterranean countries, and the one which relies on the splendour of the region's natural resources it soon becomes apparent that untrammelled development of tourist infrastructures such as accommodation complexes, at the expense of the area's natural resources, will only destroy the natural beauty that lures tourists in the first place. Too many once beautiful seaside locations have been transformed into unappealing, overcrowded, built up areas, packed with ugly concrete hotels and intersected by major roads. Litter visibly scars eroded shorelines while polluted coastal seawaters pose real health dangers to bathers.

Due to the number and diversity of stakeholders involved in tourism (these can encompass suppliers as well as more directly connected parties such as tour operators), it is an extra challenge to mobilise them all. Thankfully, businesses are starting to realise that sustainable development is ultimately in their best interests and the only way that the tourism industry can remain lucrative.

To relieve some of the pressures associated with tourism, the MCSD advocates the promotion of specialised forms of tourism such as cultural, green, inland and year-round varieties. It also recommends the greater synergy of tourism with other economic sectors particularly agriculture, fishing and craftsmanship.

Voluntary initiatives do seem a way forward. Hotels, for instance, can improve their environmental management practices by treating their own wastewater. It is also useful to target awareness-raising efforts at tourists' home countries, helping nurture practices that respect holiday destinations especially as around 25% of tourists to Mediterranean countries hail from the Mediterranean region. Local authorities in Spain's Balearic Islands have responded to public sensitivity about the negative impacts of tourism with rehabilitation measures relating to the implementation of Agenda MED 21 and several laws on land use planning and protection. Significantly, tourism itself can have positive environmental effects. Tourists' own demands for a quality environment, especially for clean bathing water, are a powerful lever for improving water purification facilities and solid waste disposal in popular areas.

In 1998, following an in-depth study of 21 different destinations, the MCSD advised that in the drawing up of plans to incorporate tourism with sustainable development, countries should pay attention to the lessons learned by 'mature' destinations, many currently the subject of rehabilitation initiatives. In particular, quasi-greenfield areas, such as Libya and Albania, should translate these insights into wiser forward planning choices.

THE RISE AND RISE OF SUSTAINABLE DEVELOPMENT STRATEGIES

Importantly, strategies for sustainable development are being mapped out for all other key economic areas and for the management of natural resources generally. Ways forward include methods of increasing agricultural productivity using environmentally-friendly techniques, encouragement of the use of new energy sources in domestic, industrial, public and private use (whilst publicising the cost advantages of renewable energy sources) and the identification and promotion of greener forms of transport. A number of MAP countries have adopted laws and regulations on town planning and for the protection of agricultural land. Plans for best management, and development of rural areas, incorporating respect for natural resources that these communities depend on will help revitalise rural societies, curbing the exodus to coastal cities while protecting forests and biodiversity.

An example of a sustainable development strategy relating to natural resources is the exchange of experience on the integrated development, management, use and re-use of water resources. Within the framework of the MCSD, MAP components have gathered and analysed additional sums of data on this often scarce resource. They have, for example, undertaken a water-related analysis which highlighted the usefulness of better demand management, particularly in the fight against wastage. MAP Contracting Parties adopted these recommendations in 1997.

SUSTAINABLE DEVELOPMENT NEEDS CITIZEN SUPPORT

MAP is an embodiment of the willingness of Mediterranean peoples to preserve their environment for the future. As their programme, it is to them, via their elected national representatives, that MAP is accountable. Citizens need to fully claim their role in preserving the range of Mediterranean assets for their future welfare and the shared prosperity of the region.

The key ingredient in the continued and enhanced success of this regional green collaboration is the commitment of the region's inhabitants, and its millions of visitors, to an overall respect for the environment and their will to integrate this respect into their daily lives. This is a challenge because while symptoms of environmental degradation such as beach litter and increasing air pollution are all too noticeable, major achievements are not always visible. These successes include the multiplication of wastewater treatment facilities, the improved quality of bathing waters, the sea change in the attitude of major industry, the greater responsiveness of local authorities and the success of nature reserves. The public are likely to be more motivated if they realise that things are changing for the better.

As environmental solutions are most often long term goals, with no overnight panaceas, it is all the more important to build public awareness with staying power. Fullest national compliance with MAP decisions needs the backing of public opinion. This is why practical programmes to bridge national gaps such as a scarcity of trained personnel must be combined with effective public awareness drives. The goal is not only to change attitudes but also to motivate and empower people to act for the environment.

Identifying greater public awareness as a prerequisite for action, MAP is on the cusp of an ambitious international information strategy. This will reach out to broader audiences such as consumers, the private sector and especially youth, using dissemination methods like the Internet and multilingual literature. Contracting Parties are also set to extend the basis of their cooperation with complementary environmental and developmental actors, especially NGOs.

HELPING MEDITERRANEAN COUNTRIES ATTAIN BETTER ENVIRONMENTAL MANAGEMENT

The protection and management of the Mediterranean natural and cultural heritage also needs specific competencies and adequate financial and technical resources.

7

MAP's role in enhancing the capacities of Mediterranean states can help them overcome existing inadequacies. The main objective of MAP Phase II is the improvement of the institutional capabilities of the Mediterranean countries in the management of their environment.

More national legal instruments and environmental infrastructure investments are sought and these need to be accompanied by a marked change of attitude towards the protection of the environment at the policy-making level. Effective environmental governance requires good public administrative systems and inspectorates as well as an exploration of emerging environmental justice devices such as tourist taxes, fines for non-compliance and subsidies for the development of alternative forms of tourism.

The most effective integrated coastal zone management needs to build on accumulated ICAM experiences and to be able to count on the involvement of skilled personnel. It also requires an enhanced allocation of budgets to projects that take into account the holistic environmental dimension.

MORE MAP PRIORITIES

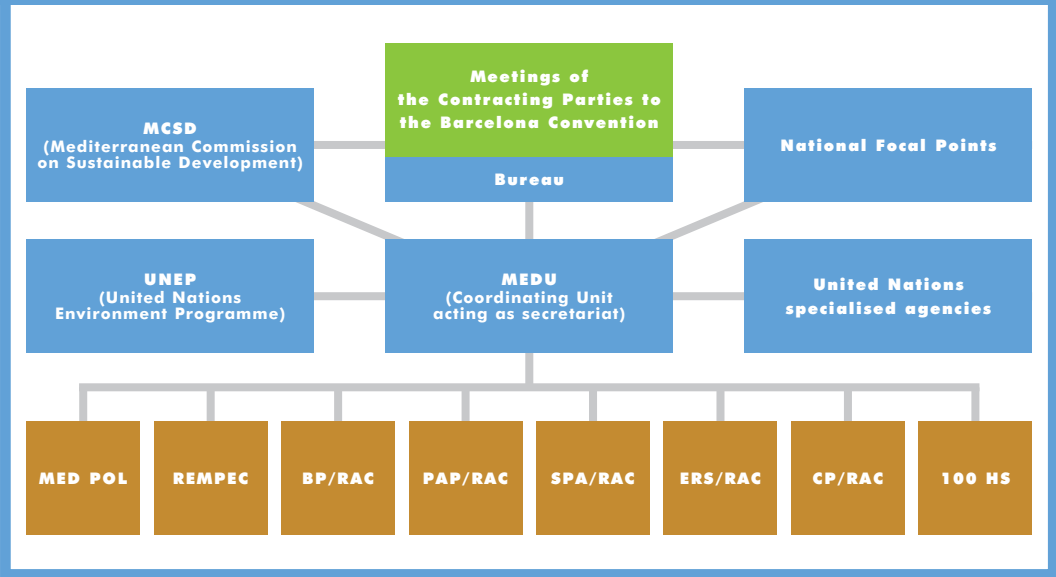
Other key MAP priorities for the next decade are: to bring about a massive reduction in pollution from land-based sources; to protect the most important marine and coastal habitats; to make maritime activities safer and more conscious of the Mediterranean marine environment; to intensify integrated planning of coastal areas and for the MCSD to prepare further recommendations for adoption by the MAP Contracting Parties.

Economic forecasts show that the Mediterranean region is en route to becoming an advanced economy, with potential for large investment inflows in the coming decades. This needs a backdrop of stability so that Mediterranean countries can press ahead with a shared vision for a common good and a proactive approach to sustainable development. Mediterranean peoples need to involve themselves more vigorously in nurturing this lasting balance. MAP remains at their service.



Corbis / J. Dickman

MAP INSTITUTIONAL STRUCTURE



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