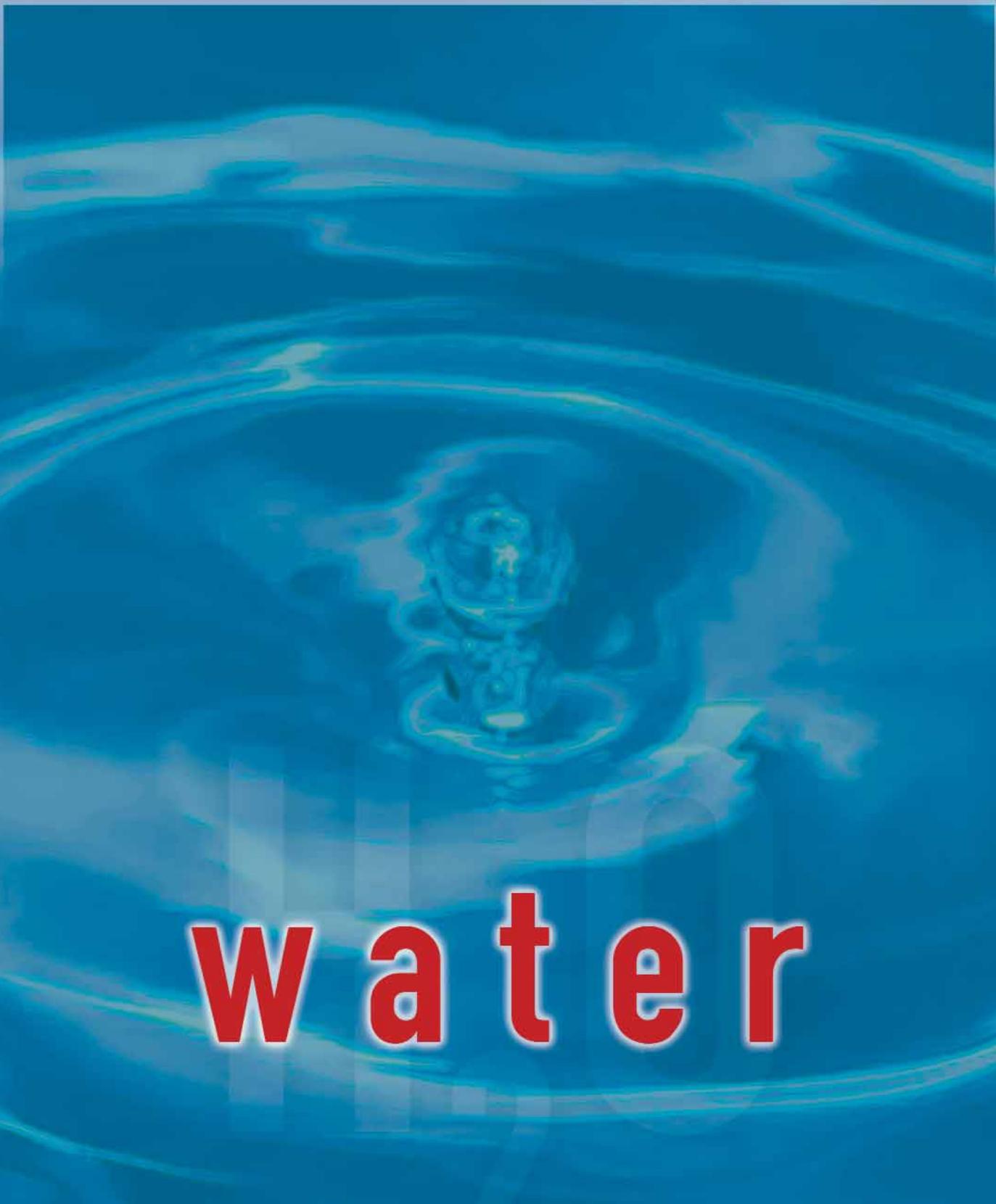


# MedWaves <sup>48</sup>/<sub>49</sub>

THE MEDITERRANEAN ACTION PLAN MAGAZINE



**w a t e r**

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## > LET US NOT FORGET THE “PRESTIGE”



**LUCIEN CHABASON**  
CO-ORDINATOR,  
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**I**N THIS YEAR 2003, already at the half-way point, the “Prestige” accident, which has affected the Atlantic coast of two countries parties to the Barcelona Convention, namely France and Spain, is still a matter for indignation, reflection and action. Indignation because, as public opinion has shown, there is a feeling that not everything is being done at the various levels (industrial, national and international) to prevent any future such occurrences, which have a major ecological and economic impact. A great deal therefore remains to be done to ensure that flag States assume their responsibilities, to modernize fleets, strengthen controls over ports and apply international rules.

The claims made in various quarters that maritime transport will always involve risks and that, in the final analysis, the pollution caused is less significant in volume terms than deballasting or land-based pollution, can only give rise to incomprehension. None of these pretexts can attenuate the gravity of the repeated maritime accidents of recent years.

There are some human activities which are so hazardous that they justify fixing a zero risk objective: these include the heavy chemical and nuclear power industries and the maritime transport of oil and chemicals.

All this is a major theme of reflection and action in the Mediterranean, which is so close to the site of the accidents and so exposed because of the current level of traffic, which will increase in the future with the construction of new oil terminals in the Eastern Mediterranean and the Adriatic.

In this connection, we are seeing a resurgence of the debate between the advocates of the universal applicability of rules (the International Maritime Organization and many maritime States) and those who, without denying the competence of the IMO, consider that it is also necessary to take action at the regional level to prevent maritime risks, where necessary through more stringent regional and even national rules. In the Mediterranean, a semi-enclosed sea, we believe that the initiatives taken to reinforce prevention measures should be coordinated at the level of the Mediterranean region: this viewpoint is supported by the Mediterranean’s geography, ecology and spirit of solidarity. In all respects, its Southern shores warrant as much attention as its European coasts.

Within the Barcelona Convention framework, we have chosen the option of effective implementation of universal rules such as those set out by the IMO and the Convention on the Law of the Sea, without disregarding their weaknesses, particularly concerning the effective exercise of the responsibilities of flag States, the limited resources of the IOPCF and the gaps in the systems of liability and compensation (or rather exemption) established by international law.

We must move ahead in this context. The year 2003 will be marked by important initiatives intended to make progress in the field of maritime transport safety and the prevention of accident risks. In this respect, we can count on Greece, followed by Italy, as they take on the Presidency of the European Union, to ensure that the reality of the Mediterranean situation is taken into account in the European context.

At the recent meeting of REMPEC Focal Points, it was planned that a Strategy for the implementation of the new Malta Protocol would be formulated and adopted in Catania at the Meeting of the Contracting Parties, and the Coordinating Unit and REMPEC are actively preparing for this.



## > SERBIA AND MONTENEGRO, IN MAP INSTITUTIONAL MEETINGS

**D**uring their meeting in Sarajevo, on 19–20 May, Ministers and Senior Officials from Algeria, Bosnia and Herzegovina, Greece, Monaco, Slovenia and Syria, members of the current the Bureau of the Contracting Parties, adopted, among others, the following decisions:

**Legal framework:** The Bureau requested the Secretariat to initiate the necessary procedure to invite the State Union of Serbia and Montenegro to participate in the upcoming meetings of the MAP National Focal Points (NFPs) in Athens and Contracting Parties (CPs) in Catania, Italy.

**Reporting System:** The Bureau suggested to the Secretariat to follow up the reporting exercise and organize a consultation meeting with participating countries before the NFPs' meeting.

**Liability and compensation:** The Bureau requested the Secretariat to further proceed with investigations made by the group of experts and submit a progress report on this subject to the meetings of NFPs and CPs.

**Evaluation of MAP:** The Bureau examined the provisional draft report "Evaluation of MAP" with its conclusions and proposals, and approved its direction and method.

**Cooperation with European Commission:** The Bureau decided to express satisfaction to the Environment DG for the results of preliminary contacts between it and the MAP, recalling the commitments undertaken at the Euro-Mediterranean meeting in Athens of July 2002, and proposing an official meeting with the Environment DG to examine ways and means to put them into practice.

**Synergy and cooperation with other programmes and initiatives:** The Bureau proposed to the Secretariat:

- a) to envisage modalities which would enable improvement of cooperation and synergies with the REReP Programme the REC Center, the Euro-Arab Management School, the Baltic 21 Programme, as well as the Espo Convention;
- b) to invite the Baltic 21 Programme to attend the CPs meeting in Catania, proposing the organization of a joint side event at the next meeting of the MCSD;
- c) to continue contacts with the Espo Convention and Secretariat to prepare a joint working plan to be implemented

during the next biennium and promote bilateral agreements at the national level and to invite the Espo Convention to the CPs meeting;

- d) to strengthen cooperation with conventions addressing horizontal and cross-cutting issues and the relevant implementation programmes, taking into account the results of the Kiev conference and the process "Environment for Europe".

**Financial Issues:** The Secretariat is invited to present to the CPs the 2004–2005 budget in euro using as a reference the budget in euros approved in Monaco in 2001.

**Strategy for the implementation of the new Prevention and Emergency Protocol:** The Bureau considered that, at this point in time, it was early to envisage a meeting about the preparation of a strategy for implementation of the Malta Protocol. However, the Bureau decided that the issue may be submitted to the NFPs meeting for consideration. In any case the Secretariat should prepare a draft of political, ministerial declaration on this crucial issue for the CPs meeting. A proposal of the text shall be submitted to the NFPs meeting.

**MED POL:** The Bureau requested the Secretariat to start the review of the MED POL programme given that Phase III will come to an end during 2005. The aim is to establish a new programme (2006–2013), which will be submitted for adoption at the meeting of the CPs in 2005.

**Process of preparation of National Action Plans (NAPs):** The Bureau is invited to urge the CPs to make any effort to complete the preparatory phase of the elaboration of NAPs to Address Pollution from Land-based Activities, and in particular to finalise the National Diagnostic Analysis and the Baseline Budget of pollution releases.

**Monitoring activities:** The Bureau is invited to urge CPs to formulate and implement national monitoring programmes in order to complete the geographical coverage of the region and create an efficient system of marine pollution assessment and control to be able to track the pollution reductions expected to be achieved through the implementation of the Strategic Action Programme (SAP).

## > FRENCH GEF SUPPORTS THE MAP EFFORTS TO REDUCE POLLUTION FROM LAND



**The Mediterranean Action Plan (MAP) and the French Global Environment Facility (FFEM) signed two agreements, totaling over 1.8 million euro, to support the implementation of activities related to the MAP Strategic Action Programme (SAP) to address pollution from land-based sources.**



MEDWAVES ARCHIVE

The two agreements, signed on 2nd May in Paris by J.M. Severino, Director General of the French Agency for Development, and L. Chabason, MAP Coordinator, in presence of T. Saifi, State Secretary for Environment and Development (France), imply that the FFEM now becomes a major contributor for the implementation of the SAP MED.

The Contracting Parties to the Barcelona Convention adopted the SAP MED in 1997 in order to curb pollution from land-based sources, particularly by substances that are persistent, toxic and liable to accumulate in marine organisms.

According to the signed agreements, FFEM will fund the preparation of pre-investment studies for selected pollu-

tion hot spots in four countries (Algeria, Lebanon, Morocco and Tunisia) with one million euro.

This will help complete the activities undertaken by the MAP in this field as well as the pre-investment studies for the 103 Mediterranean hot spots that have trans-boundary impact.

The studies, once prepared, will be used by national / local authorities and / or potential donors for direct investment in order to remedy the pollution hot spots.

Capacity building is one of the main components of the SAP MED. In this regard, FFEM will provide 600,000 euro for the purchase of necessary equipment for pollution monitoring and training of personnel in selected

national institutions in three countries (Morocco, Tunisia and Turkey).

Activities related to capacity building under the FFEM contribution refer to not only the national level in three countries (Morocco, Tunisia and Turkey), but also to the regional level, through a series of training workshops.

In addition, FFEM will support the organization of three regional training courses, on river monitoring and wastewater reuse.

The activities funded under these agreements aim at supporting the process of formulation and adoption of priorities, measures and actions needed in order to address each one of the key land-based sources of pollution and help the countries in implementing them.



## > NATIONAL COORDINATORS BOOST MED POL

**Surely unusual was the environment chosen for this year's meeting of the MED POL National Coordinators: the surroundings of the city of San Gemini in the beautiful region of Umbria in Italy, at least 100 km away from the sea. Unusual, perhaps, but not out of theme. The splendid valley of San Gemini is rich with fresh water; it spreads out within the Mediterranean hydrologic basin and represents a model of management of local water resources, all issues relating to the present and the future of MED POL.**



**T**he natural scenery of the meeting venue was needed in view of the heavy agenda: In four days (27-30 May), the National Coordinators had to review the work achieved in 2002-2003 and prepare the MED POL Programme for the coming biennium.

All this, in addition to the review of the activities carried out in the framework of the GEF Project, indeed numerous and relevant considering their impact on the implementation of the Strategic Action Programme (SAP).

The National Coordinators having expressed appreciation for the work carried out so far, which confirmed the new role of MED POL towards the concrete control of pollution as a contribution to achieving sustainable development, discussions were focused on a number of issues to be presented to the Contracting Parties for formal adoption.

Among these, a special focus was put on the approval of the regional plan for the reduction of Biological Oxygen Demand (BOD) from industrial sources: the meeting endorsed the approach pro-

posed by the Secretariat and suggested that all countries could achieve a reduction of 50 % by the year 2010.

The monitoring activities were also discussed: while the objectives and the contents were generally appreciated, including the new eutrophication monitoring programme and the structure of the new database, the Coordinator expressed concern about the fact that the activities were still not covering the entire region and that all efforts had to be made to expand their coverage.

Concerning the 1995 amended Dumping Protocol, the meeting approved the content –after ensuring harmonization with the London Convention– of the last two Guidelines proposed (on the dumping of platforms and on inert materials) which should pave the way to the implementation of the Protocol by the Parties.

Finally, the future of MED POL was the object of thorough discussions. The Coordinators highlighted the key role of the MED POL Programme within the MAP and in the context of sustainable development.

They insisted that the future MED POL Programme, scheduled to begin in 2006, should clearly incorporate the relevant decisions of the Johannesburg Summit and be in harmony with the European Union's related strategies.

A very important meeting therefore, that supported the work and the strategy of MED POL and stressed the present and future central role of the Programme in the region.

**FRANCESCO SAVERIO CIVILI**  
MARINE BIOLOGIST  
MED POL COORDINATOR

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## > MEDITERRANEAN MEDIA DISCUSS ON ENVIRONMENT



**Journalists from eleven Mediterranean countries, all members of the MAP, discussed the current environmental situation, ways to boost follow-up and coverage of environmental and development related issues, and the need for exchange of information among media professionals in the region.**

For the first time ever since its adoption in 1976, the Mediterranean Action Plan (MAP) organized a “Workshop for Mediterranean Communication Professionals on Environment and Development: the Role of the MAP”.

Twenty professional journalists participated in this workshop, held in Barcelona on 7-10 May 2003, jointly organised by the MAP Co-ordinating Unit (MEDU, and two of the MAP’s Regional Activity Centres: The Centre for Cleaner Production (CP/RAC) and the Priority Actions Programme (PAP/RAC).

Participating journalists represented media in: Albania, Bosnia and Herzegovina, Croatia, Egypt, Israel, Lebanon, Malta, Slovenia, Syria, Tunisia and Turkey.

The event included presentations by professionals from the co-organizers,

with a particular focus on the present situation of this regional sea, the main sources of pollution from both maritime and land-based activities, the problems and need to promote a sound coastal zone management, and the strategy of cleaner production in the industrial sector in the Mediterranean.

In this regard, participants were informed in detail about the need to further promote the knowledge and application by the industries, of strategies aimed at achieving a two-fold objective:

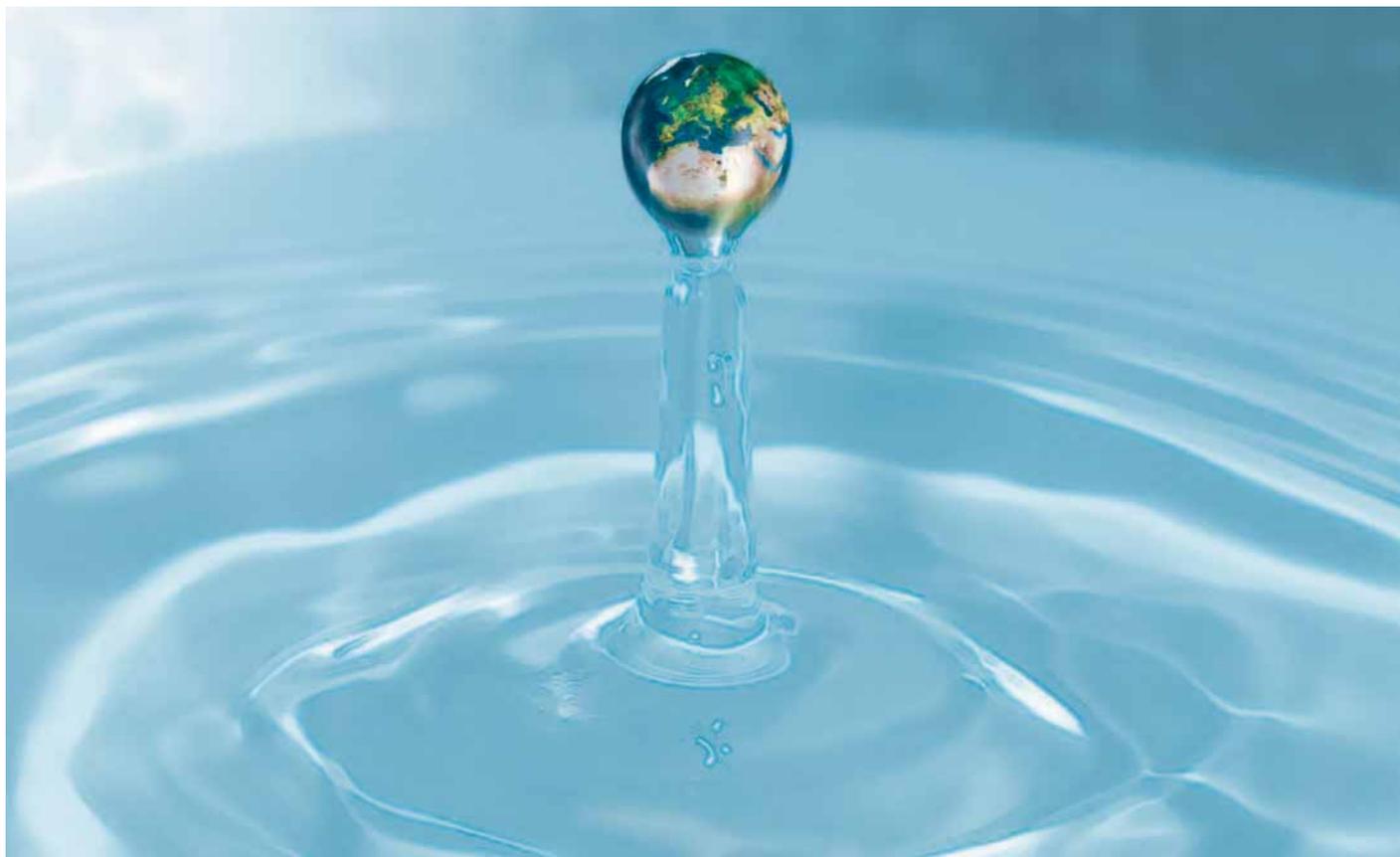
- a) to prevent pollution from the origin of the process of production and, for those using traditional production systems, to minimise the impact of pollution,
- and,
- b) to reduce, through this approach, the costs of production.

The MAP organized for this purpose two field visits in Barcelona: one to an industry producing mechanical components for heavy vehicle (COMESA), and one to the leading Spanish daily newspapers, La Vanguardia.

The Mediterranean journalists were also informed in detail about the PAP/RAC activities in the field of targeting appropriate coastal zone management as an effective means to reduce pollution from human activities on the Mediterranean shores, which account for up to 80% of the sources of pollution.

Other topics on the workshop’s agenda were the current MAP Strategic Action Plan (SAP) to reduce pollution from land-based sources and also the ongoing preparation of a strategy on sustainable development in the region by the Mediterranean Commission for Sustainable Development.

## > MEDITERRANEAN: RENEWABLE WATER, "LIMITED, FRAGILE"



**For the first time in 30 years, an Arab country, Lebanon, hosted, on the 5th of June, the main celebrations of the 2003 World Environment Day under the theme “Water: Two Billion People Are Dying for It!”.**

**L**ebanon, one of 21 member-countries of the United Nations Environment Programme / Mediterranean Action Plan (UNEP/MAP), has been included by the UN, together with another MAP member, Syria, in the group of nations that will be much affected by “severe water stress” in less than 30 years, unless urgent action is taken.

Other MAP member countries are on the list of those where even less water is available per person per year and that will have to face much more “severe water stress”: Libya with only 113 m<sup>3</sup> and Malta with only 129 m<sup>3</sup>, according to a UN report on the 2003 International Year of Freshwater.

In general, most of the Mediterranean countries face, in one way or another, the impact of either water shortage, droughts and / or overexploitation of resources.

According to reports by the MAP Regional Activity Centre Blue Plan, the Mediterranean water renewable resources are “limited, fragile and threatened”.

Natural input (renewable water resources) is shared “very unequally” between countries and populations: 72 % in the North, 23 % in the East, and only 5 % in the South.

In addition, the region has been subject to droughts that aggravated the

situation and caused water reserves in soils and sub-soils to dry up.

During the last few decades, most Mediterranean countries have experienced long-term droughts: Morocco (1980-85); Greece, Spain, Southern Italy and Tunisia (1982-83); Tunisia (1985-89); Greece again (1988-90); Mediterranean France (1988-92), Cyprus (1989-91) again Spain and Morocco (1990-95); Tunisia (1993-95), Cyprus (1995-98), etc.

The MAP, mainly through its Mediterranean Commission for Sustainable Development (MCSD), and the Blue Plan, has been actively involved in elaborating strategies aimed at improving water demand management in the region.

# AND THREATENED"



## Water in the Mediterranean

According to the MAP's Mediterranean Commission on Sustainable Development (MCS D), the management of water demand is a field in which the most significant progress can be expected as regards water policies in the Mediterranean. For the MCS D, controlling the demand for water has become a priority political objective. Here is the rationale:

- > In most countries, water consumption is fast approaching the limits of available resources.
- > The water shortages now emerging, whether circumstantial or structural, will undoubtedly spread and worsen over the coming decades. These shortages are due to the heavy increase in water demand (60 % over the last quarter of a century).
- > This situation has been met by simply increasing the supply. Today this solution is nearing its limits. Mobilising extra resources is encountering obstacles of a social, economic or ecological order.
- > A large part of the extracted water appears to be badly or little used in most countries.
- > At least one third of the volume of water produced and distributed as drinking water in towns and villages leaks out through the network or is wasted by misuse.
- > Almost one half of the volume of water supplied for irrigation is lost through leakage during transport, badly adjusted modes of supply to the fields, low efficiency of the irrigation systems, and choice of crops overly consuming water.
- > Many industries, with defects in recycling, leakage and loss, and inefficient production processes, with-

draw volumes of water that far exceed their needs.

- > For all countries, a preliminary estimate of the amount of water that could be saved by more rational management of use and consecutive lower demand shows a significant volume (75.5 km<sup>3</sup>/year) compared to the additional water to be supplied to cover growth in demand forecast for the next twenty to thirty years (+85 km<sup>3</sup>/year for the year 2010 on a high hypothesis, and +148 km<sup>3</sup> in 2025).
- > The most beneficial savings in terms of volume would be in the irrigation sector: reduced losses during transport together with greater efficiency (71 % of the total, more than half of which due to improved efficiency),
- > Next in order of importance comes better recycling by industry (18 %).
- > Then reduction of loss, leakage and wastage of drinking water in local communities (10 %), although these would be of greater value in view of the higher cost of producing and distributing drinking water.
- > The MCS D formulated a set of recommendations, dictated by the need to manage water demand in the region. The overall objective is to control demand within the broader

strategic objective of sustainable water management.

- > This approach consisted of a "prima facie" analysis of the situations of 21 riparian countries and entities in four groups all having a relatively similar situation in regard to the risk of shortages:

Group 1: countries where there is no risk of shortages even beyond the year 2025 (Albania, Bosnia and Herzegovina, Croatia, France, Greece, Italy, Monaco, Slovenia, and Turkey);

Group 2: countries where there is an occasional, more or less local, risk of shortages (Cyprus, Lebanon, Morocco, Spain, Syria);

Group 3: countries where there will be occasional or structural shortages from the year 2000 on despite present low demand for water (Algeria, Israel, Malta, Palestinian Authority, Tunisia);

Group 4: countries where there will be structural shortages from the year 2000 on, exacerbated by high demand for water (Egypt, Libya).

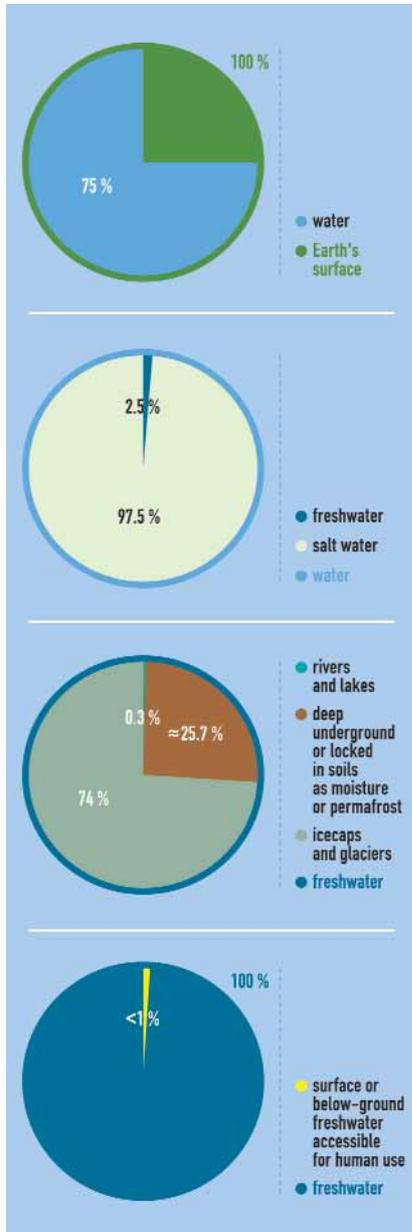


## >> MEDITERRANEAN: RENEWABLE WATER RESOURCES ARE "LIMITED, FRAGILE AND

### Water in the World

#### Scarcity

- > Water makes up 60% to 70% (by weight) of all living organisms and is essential for photosynthesis.
- > The total amount of water on Earth barely changes from year to year. The hydrological cycle of evaporation and precipitation circulates the Earth's water between oceans, land and the atmosphere.
- > Water covers 75 % of the Earth's surface (97.5 % of that is salt water, only 2.5 % is freshwater).
- > Icecaps and glaciers hold 74 % of the world's freshwater. Almost all the rest is deep underground, or locked in soils as moisture or permafrost. Only 0.3 % of the world's freshwater is found in rivers and lakes.
- > Less than 1 % of the world's surface or below-ground freshwater is accessible for human use.
- > Within 25 years, half the world's population could have trouble finding enough freshwater for drinking and irrigation.

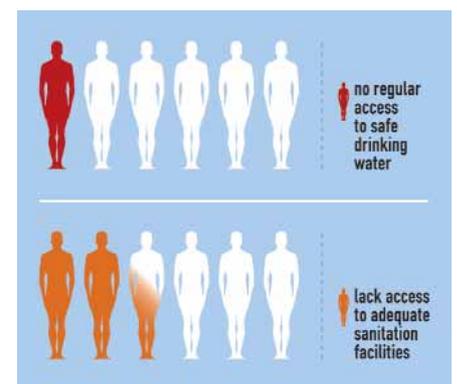


- > Currently, over 80 countries, representing 40 % of the world's people, are subject to serious water shortages. Conditions may get worse in the next 50 years as populations grow and as global warming disrupts rainfall patterns.
- > A third of the world lives in water stressed areas where consumption outstrips supply. West Asia faces the greatest threat. Over 90 % of the region's population is experiencing severe water stress, with water consumption exceeding 10 % of renewable freshwater resources.

#### Health

- > Improved water management has brought enormous benefits to people in developing countries. In the past 20 years, over 2.4 billion people have gained access to safe water supplies and 600 million to improved sanitation.
- > Nevertheless, one in six people still have no regular access to safe drinking water.
- > More than twice that number (2.4 billion people) lack access to adequate sanitation facilities.

- > Those without access to adequate sanitation are the poorest and most vulnerable. The problem is particularly severe in remote rural and rapidly growing urban areas.
- > In Africa, 300 million people—40 % of the population—live without basic sanitation and hygiene, an increase of 70 million since 1990.
- > As much as 90 % of waste water in developing countries is discharged without treatment into rivers and streams.
- > Unsanitary water, which provides a breeding ground for parasites, amoebas and bacteria, damages the health of 1.2 billion people a year.
- > Water-borne diseases are responsible for 80 % of illnesses and deaths in the developing world, killing a child every eight seconds.
- > Half the world's hospital beds are occupied by people suffering from water-borne diseases.
- > Almost 40 % of the world's population lives within 60 kilometres of the coast. Disease and death related to polluted coastal waters alone costs the global economy 16 billion US dollars a year.
- > In southern Asia, between 1990 and 2000, 220 million people benefited from improved access to freshwater and sanitation. In the same period, the



# THREATENED"

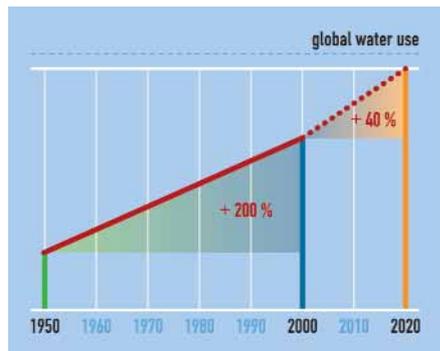


population grew by 222 million, wiping out the gains that had been made.

- > During the same period, in East Africa, the number of people without sanitation doubled to 19 million.
- > The cost of providing safe drinking water and proper sanitation to everyone in the world by 2025 will be 180 billion US dollars a year, two to three times greater than present investments.

### A shared resource

- > Rivers form a hydrological mosaic on the political map of the world.
- > There are an estimated 263 international river basins, which cover 45.3 % of the Earth's land surface area (excluding Antarctica) and are home to more than half the planet's human population.
- > One third of these 263 transboundary basins are shared by more than two countries.
- > Rarely do watershed boundaries coincide with administrative boundaries.
- > Many countries also share groundwater aquifers.
- > Groundwater aquifers store as much as 98% of accessible freshwater supplies. They provide 50 % of global drinking water, 40 % of industrial demands and 20 % of water for agriculture.
- > On average, individual daily domestic use of freshwater in developed countries is 10 times more than in developing countries. In the UK the average person uses 135 litres of water every day. In the developing world the average person uses 10 litres.



### Food security

- > Most of our freshwater is used to grow food.
- > While the daily drinking water needs of every person is approximately four litres, between 2,000 and 5,000 litres of water are needed to produce an individual's daily food requirements.
- > Agriculture accounts for over 80 % of world water consumption.
- > It is estimated that between 14 % and 17 % more water will be needed for irrigation by 2030 to feed the world's growing population.
- > 60 % of water used for irrigation is wasted.
- > A 10 % improvement in irrigation efficiency could double the drinking water supply for the poor.
- > In Africa, more than 20 % of the population's protein comes from freshwater fisheries.

### Water in the future

- > Two hundred scientists in 50 countries have identified water shortage as one of the two most worrying problems for the new millennium (the other was climate change).

- > Since 1950, global water use has more than tripled.
- > On current trends, over the next 20 years humans will use 40 % more water than they do now.
- > The number of people living in water-stressed countries is projected to climb from the current 470 million to three billion by 2025. Most of those people live in the developing world.
- > To achieve the 2015 targets for freshwater provision, water supplies will have to reach an additional 1.5 billion people in Africa, Asia, Latin America and the Caribbean.
- > Nearly 200 million people in Africa are facing serious water shortages. By 2025, nearly 230 million Africans will face water scarcity, and 460 million will be living in water-stressed countries.
- > Water problems are more related to mismanagement than scarcity.
- > Up to 50 % of urban water and 60 % of water used in agriculture is wasted through leaks and evaporation.
- > Logging and land conversion to accommodate human demand has shrunk the world's forests by half, contributing to increased soil erosion and water scarcity.
- > Between 300 and 400 million people worldwide live close to and depend on wetlands.
- > Wetlands act as highly efficient sewage treatment works, absorbing chemicals and filtering pollutants and sediments. Urban and industrial development has claimed half the world's wetlands.
- > Sustainable development and poverty alleviation will only be achieved through better management of and investment in rivers and wetlands and the lands that drain into them.



## > MARINE BIODIVERSITY SHOULD NOT “NEED” TO BE SAVED



**The precursors of today’s Mediterranean marine fauna and flora came from the Atlantic. The Mediterranean, more or less as we know it today, was formed about 5.3 million years ago. The collision of the African plate with Eurasia, around a million years earlier, led to the closing of the Gibraltar strait and the drying up of the Mediterranean. Evidently this was not so simple and a flooding-drying process was repeated several times, leading to the formation of huge salt and gypsum deposits on the Mediterranean seabed, more than 1.5 kilometres thick in some parts.**

**A**bout 5.3 million years ago, movements in the earth’s crust opened up the Gibraltar strait. Atlantic waters then permanently filled the enormous salt depression that was the virtually dry Mediterranean basin, in parts a few kilometres below the level of the Atlantic Ocean.

It was not until the early 1970’s, with the deep-sea drillings, in the Mediterranean, of the US Geological Survey Vessel *Glomar Challenger*, that this picture was pieced together. It answered many older unexplained findings, such as the existence of many deep river-cut channels off the Nile delta and else-

where, several thousand feet deep in the underlying bedrock –channels that could not have been cut underwater.

The demise of the marine fauna and flora of the older Tethyan Sea was inevitable. The Atlantic water that filled the Mediterranean brought with it living organisms that colonised this sea and evolved into today’s Mediterranean marine life.

The Mediterranean has since then gone through several, sometimes revolutionary, changes, some a few million years old, some as recent as a few thousand years. Seismic activity, volcanic eruptions, sea level and climate changes all had their impact.

Evidence of some of the events and processes that formed today’s Mediterranean are the many sapropels found in this sea –especially in the Eastern Basin. These are sediment layers, rich in organic carbon, which are indicators of very high productivity, stratification and the ensuing anoxic conditions.

The causes of such high carbon-rich matter and the conditions and mechanisms under which it was formed, are still being debated. The existence of sapropels, already known in the middle of the 20<sup>th</sup> century, gave rise to several hypotheses, some even linking them to the biblical floods and Noah.



An inflowing surface current through the Gibraltar strait not only enriches the Mediterranean and compensates for evaporation losses –which cannot be met with by river inflow– but also brings in living organisms from the Central Atlantic, both warm and cold water animals and plants.

This inflow of organisms, over the millennia, fed the new sea with species and, as its environment changed through geological times, has led to the evolution of today's Mediterranean biota and delicate ecosystem.

The Gibraltar strait, until the opening of the Suez Canal, formed the Mediterranean's only link to the other oceans. With the advent of the last Wurm ice age, about 18,000 years ago, the Mediterranean slowly started warming up. At that time, this sea was about 120 metres below today's sea level.

Sperm and Fin Whale populations in the west Mediterranean are relicts of a much colder and richer Mediterranean. Loggerhead turtles, at one stage in their life, still make the journey across the Atlantic to the Mediterranean and then return to the Atlantic and to Florida. Some of them stayed behind and colonised this sea, about 10,000 years ago, when this sea warmed up enough to sustain nesting on its shores.

They, and Green turtles, have since diverged genetically from the Atlantic mother stocks and now form genetically distinct Mediterranean populations.

#### Poor in nutrients...

The Mediterranean and especially the Eastern basin is one of the most oligotrophic seas in the world –this means that it is a sea poor in nutrients– and it is this poverty that gives the Mediterranean its azure colour and enviable clarity.

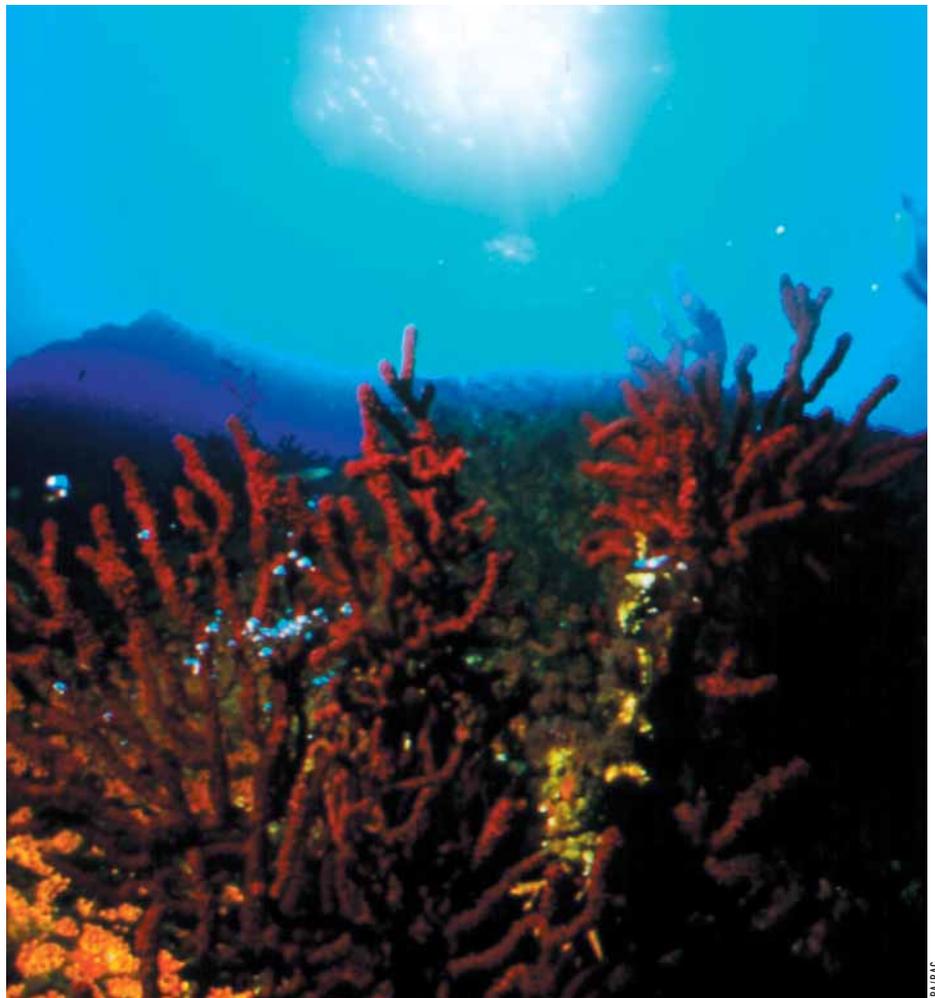
It is this poverty that has been the key to the development of the Mediterranean as a major tourist destination. The incoming surface current does not allow, the passive at least, outflow of organisms back into the Atlantic, enhancing the relative isolation of the Mediterranean and the evolution of a large number of endemic species –species found only in the Mediterranean. Endemic species now account for almost one third of its fauna and flora.

The evolution of the marine life of this sea is of course ongoing and many forces are now shaping it, natural processes shape it gradually, man made effects can revolutionise it.

#### ...rich in diversity

The Mediterranean is a rich sea in terms of diversity and more than 10,000 marine species have been recorded here. The Western basin, as in the past, is colder and more similar to the Central Atlantic; the Eastern basin is warmer and more tropical and has favoured its colonisation by species of the more tropical Atlantic.

The same conditions now favour its colonisation by species that come into the Mediterranean through the Suez Canal. These now form about 12 % of the biota of the Levantine basin and 5 % of the total biota of the Mediterranean –and are increasing.



SPARAC

## &gt;&gt; MARINE BIODIVERSITY SHOULD NOT "NEED" TO BE SAVED



A. DEMETROPOULOS

inevitably also impacts marine species dependent on this narrow interface between land and sea.

### Man versus species

Monk seals, turtles, dolphins and the precious Posidonia meadows and many other species and habitats, as well as the Mediterranean's delicate ecological balance, are now threatened by human activities. Concern over the impact of man's activities on the Mediterranean has led international and supranational organisations focus their attention on the protection of this sea, its resources and its biodiversity.

The warning signs are clear and the threats imminent. The UN Food and Agriculture Organisation (FAO) and, more recently, the European Union have been endeavouring to catalyse the implementation of science-based fisheries management measures in this sea—measures that would lead the way to the so far elusive sustainable use of fishery resources.

The Mediterranean Action Plan (MAP), through the Barcelona Convention and Protocols and its network of Regional Activity Centres and through a series of action plans and a multitude of other

The relatively cool winter temperatures in the Mediterranean, well below the 18°C threshold, do not allow the establishment of coral reefs in this sea. Global warming will inevitably have its effects.

The marine fauna and flora of the Mediterranean has come under pressure in recent years, from increased human activity.

### The fishing factor

Fishing has changed during the 20<sup>th</sup> century, from artisan levels, with row-boats and limited gear to a fleet made up not only of mechanised, well equipped small boats with winches and fish-finders but also of a multitude of large trawlers, purse-seiners, drift-netters and long-liners.

Fish catches now exceed by far any scientific estimates of sustainable fish yields. Red corals and sponges face similar problems. Sport fishing has decimated target species. Pollution, mainly

from land-based sources, is impacting species, habitats and ecosystems.

The relative sparsity of life in this sea makes it even more susceptible to some kinds of pollution and to ecological change. The introduction of alien species, deliberate or accidental, impacts Mediterranean equilibrium and the heavy use of the coastline for urban, industrial and tourism purposes





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activities has been endeavouring to help countries look into the options for the future and monitor, control and combat pollution, adopt appropriate technologies and use resources wisely.

MAP has also led the efforts for the protection precious Mediterranean marine habitats and species, through its Specially Protected Areas and Marine Biodiversity Protocol and the activities of its Regional Activity Centre in Tunis (SPA/RAC).

Since the Rio summit, MAP has been promoting the sustainable development of the region for the common benefit of the countries bordering on this sea – a sustainable development that would minimise impacts on the sea.

Other bodies and agreements have also come to the rescue of the integrity of Mediterranean's biodiversity; Convention on Migratory Species (CMS) and its Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS), focused on cetaceans in the Mediterranean; the Bern Convention now lists many Mediterranean marine species as protected, while opening files on cases of non-compliance by member states; International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM) and In-

ternational Maritime Organization (IMO) and many others are also involved.

Finally and perhaps more significantly countries themselves, at the national level, are increasingly initiating actions to protect their marine biodiversity, through networks of protected areas and conservation programmes and projects.

Whatever the current conservation efforts and trends are, however, there can be little room for complacency, as much more is needed if current ecological equilibrium are to be maintained in this sensitive sea, let alone be reversed.

To a large degree, such targets are dependent on the understanding of the nature of this sea and mechanisms that shape it. At the forefront of conservation thinking a fact needs to remain, that even if a species is brought back from the brink of extinction, there is an inevitable loss of genetic diversity within that species, an irreversible loss to nature – and to man – that man can do little about. This sombre realisation should perhaps guide efforts to ascertain that species do not reach endangered levels and do not need to “saved”.

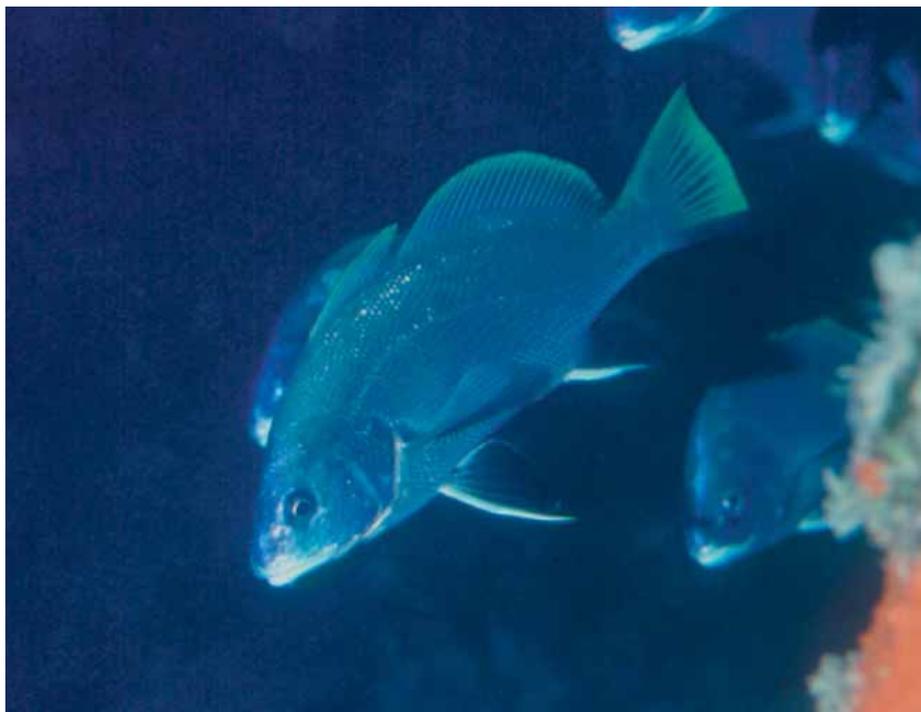
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SPA/RAC

## > A SEA WITH PERMANENTLY ENDANGERED SPECIES

**The Mediterranean Sea is a distinctive basin which in the present state of our knowledge is host to almost 1,300 marine taxa, representing 12 % of the world's ocean biodiversity for those species. Moreover, this is an underestimation, since the total number of species is between 10 and 12,000, 8,000 of which are animal, excluding the protozoa.**



Could the Mediterranean Sea, with its rich marine biological diversity, be considered as one of the climax cases in this field in the world? The reason for this richness is certainly the co-existence in the Mediterranean of species that come from the temperate northern Atlantic, from the tropical Atlantic and from the Indo-Pacific.

The exceptionally high rate of endemism, higher in the Western Mediterranean (78 % of Mediterranean endemics) than in the Eastern part (only 23 % of Mediterranean endemics), could confirm this character.

Among the endemic species that are considered as indicators of Mediterranean eco-diversity performance are:

- > the angiosperm species *Posidonia oceanica*, which extends over depths of 40 metres in optimum conditions and covers a total surface area of about 20,000 square sea miles: 20 % of all known Mediterranean species

have been observed in these meadows, and it is a spawning ground and nursery for many species, such as the mullets *Mullus spp.*, and

- > the coralligenous communities, whose big sponges, gorgonians and bryozoans hosted by these communities present some of the most spectacular and most characteristic underwater landscapes in the Mediterranean.

To a great extent, the exceptional ecological heritage of the Mediterranean region has been suffering from intense exploitation of its natural resources.

There is everywhere a marked disbalance of ecosystems, noticed through the decline of certain species and of their critical habitats. The Mediterranean plant and animal communities include species that are among the world's most threatened.

This is the case for the Mediterranean monk seal *Monachus monachus*

that could once be found throughout the Mediterranean and now lives only in Greece and Turkey. Over the last 25 years, its population has dropped from 1,000 to 300 individuals, 150-200 of which are in the Mediterranean.

The loggerhead turtle *Caretta caretta*, the green turtle *Chelonia mydas*, and the leatherback turtle *Dermochelys coriacea*, which are the commonest species in the Mediterranean, are being caught at a yearly rate of 60,000 turtles during fishing activities, and the death rate of captured individuals is from 10 to 50 %.

Among the 17 species of cetacean mentioned in Mediterranean waters, three are seen as having priority: *Delphinus delphinus*, *Tursiops truncatus*, and *Physeter macrocephalus*, because of the direct mortality caused by fishing gear.

Chondrichthyans (sharks, rays and chimeras), species with a slow growth rate and late maturity, have also proved to be vulnerable to human exploitation



and the resulting fishing-related deaths by directly-targeted catch and catch linked to the use of fishing gear that is not very selective.

The dwindling of the elasmobranch populations (especially *Squalus bairdii*, *Mustelus mustelus*, *Mustelus asterias* and most of the rays) is mentioned in certain parts of the Mediterranean.

Corbelled constructions of *Lithophyllum lichenoides* are sensitive to pollution and being trampled on.

There are also threats to ecosystems such as the *Posidonia oceanica* meadow and the coralligenous communities because the water is becoming less transparent, and because of trawling and the mooring of boats.

Several other threats which are likely to reduce Mediterranean species diversity are coastal improvements (artificial beaches, ports), the discharge of products and substances that cause pollution (solid waste, liquid waste, hydrocarbons), and the introducing of nearly 400 species (discharge of ballast water, aquaculture, migration), among which 90 are macrophyte algae, of these, *Caulerpa taxifolia* is the most discussed invasive alga.

Aware of the dangers that are threatening the ecosystems, the countries bordering on the Mediterranean Sea have, under the aegis of the Mediterranean Action Plan, coordinated their efforts via the SPA/RAC with a view to protecting the Mediterranean Sea as a heritage that is common to the peoples of the region.

Section two of the new Protocol for Specially Protected Areas and Biodi-

versity in the Mediterranean is devoted to this. Within this framework, several initiatives to conserve and protect threatened species and their habitats have been introduced, like helping countries to inventory the constituent elements of biological diversity, and elaborating and implementing the four Action Plans which have been adopted by the Mediterranean countries in the context of the Barcelona Convention:

- > the Action Plan for the management of Mediterranean monk seal,
- > the Action Plan for the conservation of Mediterranean marine turtles,
- > the Action Plan for the conservation of cetaceans in the Mediterranean Sea, and
- > the Action Plan for the conservation of marine vegetation in the Mediterranean Sea.

- Other plans under preparations are:
- > an action plan for the conservation of threatened bird species in the Mediterranean,
  - > an action plan for the conservation of Mediterranean species of cartilaginous fish, and
  - > an action plan concerning the introduction of species and invasive species in the Mediterranean Sea.

Although these Action Plans are not legally binding, they constitute a regional strategy, laying down priorities and activities to be undertaken with the aim of helping the Mediterranean countries to implement the new Protocol on Specially Protected Areas and Biological Diversity.

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## > RIVER BASINS AND COASTAL AREAS

Since 1997, MAP and UNEP have performed a number of joint actions related to Integrated Coastal Area and River Basin Management (ICARM) in the Mediterranean region. The ICARM approach has a dual focus: river basins and coastal areas. Rivers are both important sources of freshwater for its population and a base for many of their economic activities. Coastal areas are home to the majority of the Mediterranean people and a location of important ecosystems. Keeping track of the linkages between these two natural and socio-economic systems is crucial.



Thus, for example, the modification of river basins by human activity has led to dramatic changes in the flow of water and nutrients they carry to the sea. Marine ecosystems have been harmed by careless land practices hundreds of kilometres upstream. On the positive side, while economic activities in downstream areas benefit from upland resources, the coastal areas often provide space for settlement and industrial developments that have a positive benefit for the basin area.

These reasons prompted emergence of the scaled-up approach to river basin and coastal area management, resulting in the ICARM Guidelines that focus on the following principles:

- > respect the integrity of river basin and coastal ecosystems accepting the limits on use of their resources;
- > ensure strategic importance of renewable resources for socio-economic development;

- > allow for multiple use of resources integrating complementary activities and regulating / separating conflicting ones;
- > ensure multi-sectoral and multi-level integration in decision making linking broad scale management to local level interventions;
- > allow for participation of all stakeholders.

Guidelines were based on the experiences of the large-scale interventions in the Mediterranean (France, Italy, and Spain). Regional and world experiences were presented at the workshop in Toulon (2000), when the ICARM guidelines were accepted.

### The case of Cetina River

Following ICARM guidelines, MAP's Priority Actions Programme / Regional Activity Centre (PAP/RAC) and UNEP prepared the demonstration project "Environmental and socio-economic profile of the Cetina River" in 2000.



This project highlighted the need for all stakeholders to consider the environmental and socio-economic relationship between the watershed and its coastal area, and to identify possible consequences of their unregulated development.

Cetina is a relatively small river but with all-important characteristics of a complex transboundary socio-economic and environmental situation. Located in the karstic area, its watershed is spread over Croatia (1,200 km<sup>2</sup>) and Bosnia and Herzegovina (2,440 km<sup>2</sup>).

The river is 105 km long, but abundant with water, that has been used for agriculture, energy production and water supply. The river's major integrative element is seen through the fact that most of the Central Dalmatian islands, with important tourism industry, largely depend on freshwater supply from the Cetina River (30,000 resident and 50,000 tourist population).

Major environmental concerns include: pollution; occasional water shortages; water quality degradation; threats to river and marine living resources; changes of the river's flow regime; river banks' degradation; river pollution; landscape degradation; sedimentation; coastal erosion, pollution, and loss of open space; and modification of natural habitats.

Major project's findings were:

- > main river user (Croatian Electricity Company) is exploiting ecosystem to its limits not bothering about consequences;
- > there's no enabling environment for implementation of economic instruments and incentives;
- > legislation, enforcement and institutional setting in the two countries are not equally developed;
- > there's lack of vertical integration among administrative levels;

- > there's no agreement for common management between the two countries, but
- > the dialogue among stakeholders in the two countries has started.

The future of this area will be planned following a well-developed format:

- > a socio-economic profile (already prepared) with an established network of co-operation and information exchange in the watershed area of the two countries;
- > a study of development options where the impacts of several options will be studied, including the effects of implementation of economic instruments, and
- > a Strategic Action Programme (eventually with GEF financing) including the creation of a sustainable mechanism for a regional approach to water resources management; a Joint Working Group between the two countries; and better involvement of stakeholders at all levels.

UNEP, the World Bank and other international organisations have embraced the ICARM approach. It has already been used as guidance for a GEF / World Bank project on the Senegal River.

Guidelines are prominently displayed on the World Bank's coastal and marine management web site. The guidelines and the Cetina case study were presented at the World Bank Water Week (March 2003). In its last session, the Governing Council of UNEP adopted a recommendation that ICARM case studies should be increased.



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## > A CLEARING HOUSE FOR COASTAL MANAGEMENT



**In order to improve information on Integrated Coastal Area Management (ICAM) in the region, the Mediterranean Action Plan's Priority Actions Programme Regional Activity Centre (PAP/RAC), with the financial support of the European Commission, has set up a Mediterranean Coastal Management Clearing House.**

**T**his Clearing House represents a place where information on coastal management in the Mediterranean is exchanged. The structure of the relative web site is based on the results of a virtual opinion poll, performed among the coastal management community in Spring 2002.

The Med Coastal Management Clearing House encompasses the following topics:

- > Coastal Projects Inventory,
- > Funding Guide,
- > Experts Register,
- > Legislation & Institutions,
- > Economic Instruments,
- > Policies, Strategies & Plans,
- > Tool Box,
- > Books, research reports & articles,
- > Links.

The Coastal Projects Inventory provides information on Mediterranean

coastal management projects in the last 10 years and the wide spectra of information related to and needed for a successful Integrated Coastal Area Management (ICAM). On this web page, there is an option to submit projects.

In Experts Register, there is a list of those with whom PAP/RAC has cooperated in the past. In order to build a wide network of those involved in coastal management, PAP/RAC offers the possibility for Experts to be included in this Register by filling in a form which is available on the web site.

The Economic Instruments topic is a link to the GEF - PAP/RAC project related to economic instruments. A data base on economic instruments applied in 12 Mediterranean countries is being prepared.

In the Books, reports and articles section, PAP/RAC enables researchers, PhD students and others who would like to

present their papers and thesis to the coastal management community, by placing them on this web site.

All other topics provide a theoretical introduction, accompanied by plenty of practical experiences, presented through numerous links.

Apart from information on these topics, the Clearing House will provide special web features, such as a discussion platform, e-mail lists, a notice board, an on-line calendar of events and a help-desk.

The discussion platform will be used for different thematic discussions, moderated by well-known experts or researchers and PhD students. The first moderated discussion is expected in spring 2003.

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*for full details on the Clearing House:*  
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## > REMOTE SENSING HELPS CALCULATE SUSTAINABLE DEVELOPMENT INDICATORS



**Satellite Remote Sensing and Support for Calculating Sustainable Development Indicators is an initiative launched by the Environment Remote Sensing / Regional Activity Centre (ERS/RAC) in 2000, within the framework of the Mediterranean Action Plan (MAP), in collaboration with Blue Plan / RAC.**

The objective of this initiative is to provide support for calculating and monitoring indicators of Sustainable Development in the Mediterranean, by providing examples of such calculations, based on the use of satellite data.

There are eight indicators, classified in the categories: Space and Territory, Economic Activities and Sustainability, and Environment:

- > loss of agricultural land as a result of urbanisation,
- > forestry areas,
- > artificial coastlines / total coastlines,
- > coastal erosion,
- > density of road networks,
- > trends in soil use,
- > relative trends in arable land,
- > area destroyed by fire each year.

Satellite remote sensing has a synoptic, ongoing and homogenous impact on data collection and is considered to be an extremely effective tool for monitoring and analysing the situation and changes in the terrestrial and marine environment.

The final goal of this work, which is based on national inventories of pro-

jects already undertaken and hence on existing satellite data, is to evaluate whether data collected from satellite images are appropriate for following up certain indicators and defining recommendations with a view to developing a monitoring methodology based on space-borne remote sensing which could be recognised and applied by all Mediterranean countries.

The inventories conducted in Morocco (2000) and Tunisia (2001) have highlighted the potential of remote sensing in this respect, but also the need for further work on this subject.

A workshop on "Satellite remote sensing and support for calculating sustainable development indicators" was scheduled to take place in Tunis in March 2003, bringing together representatives of Tunisian, Algerian and Moroccan national organisations working in the field of the environment and sustainable development, as well as representatives of the MAP and the Regional Centres, national and international experts in space-borne remote sensing.

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## > THE MAP ADDRESSES EUROCHLOR ON INDUSTRIAL SUSTAINABILITY

**MED POL, the Mediterranean Action Plan (MAP) Programme for the Assessment and Control of Marine Pollution, addressed the Eurochlor Conference on the subject “Industrial sustainability in the Mediterranean: the Strategic Action Programme (SAP) to Address Pollution from Land-based Activities”.**

Up to 160 representatives from the European Union (EU) chemical industry, EU Ministries of Environment and journalists participated in the Eurochlor conference, held in Brussels on 24-25 February.

The main objectives of the conference were to listen to concerns and views of external stakeholders; continue efforts to achieve mutual understanding by openly sharing information, and discuss industry plans to enhance long-term prospects for chlorine chemistry by focusing on measurable sustainability goals.

In its presentation, MED POL, outlined the SAP commitments and targets for the industrial sector, stressing two major issues related to its implementation:

- 1) the role that industrial stakeholders, and especially Eurochlor, could play in the implementation of the SAP at national and regional levels, making use of existing and innovative cooperation instruments to ensure the transfer of know-how and technology; and
- 2) that the analysis of the provisions of the SAP in comparison with the related EU directives (Water Framework Directive, Integrated Pollution Prevention and Control Directive) indicates that the implementation of the SAP would not be hindered by possible contradicting commitments made by the Euro-Mediterranean countries that would jeopardise their participation.

The conference highlighted three important controversial issues between different stakeholders:

- > the position of EU Directorate General Environment blamed the chlor-alkali as environmentally responsible;
- > the difficulties expressed by European chlor-alkali industry in the implementation of the EU Water Framework Directive with regard to the list of priority substances and the approach of the proposed EU chemical policy;
- > the pressure by EU Non Governmental Organisations and scientists, on the chlor-alkali industry to

comply with environmental regulations taking into consideration the human health impacts of mercury and Persistent Organic Pollutants released into the environment;

- > Eurochlor informed the meeting that it has reduced releases of mercury, through voluntary initiatives, by 95 % in the last 20 years, and of other reduction achievements and it has voluntary initiatives to reduce more by 2007.

According to Eurochlor, 19 chlorine production plants are currently located in the EU Mediterranean coastal areas in France, Greece, Italy and Spain with a total capacity of 2,384,000 tons/year (27 % of the production of Eurochlor).

Among them, 16 plants are using the mercury-based process producing 1,708,000 tons/year (72 % of the total) and three non-mercury process plants producing 676,000 tons/year (28 % of the total).

According to the SAP targets, the releases of mercury into the environment from mercury based process plants should be 2 gram/ton of chlorine produced which would be equivalent to 3.4 tons/year of mercury released into the Mediterranean Sea from the 16 plants located on the Mediterranean coastal areas.

On the other hand, and according to Eurochlor voluntary initiatives, this quantity should be reduced to 2.56 ton/year by 2007 since it has set a mercury releases target of 1.5 gram/ton of chlorine produced.

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## > THE BIG TURKISH TRANSFORMATION



IN TERMS OF BIODIVERSITY, TURKEY IS ONE OF THE RICH COUNTRIES OF EUROPE AND THE MIDDLE EAST. THERE ARE AT 9 DIFFERENT ECOLOGICAL REGIONS EACH WITH ITS OWN ENDEMIC SPECIES AND NATURAL ECOSYSTEMS: THE MOST IMPORTANT OF WHICH ARE NORTHEASTERN ANATOLIA FLORA WITH ITS OLD TEMPERATE MOUNTAIN RAIN-FORESTS, THE STEPPE-TYPE MEADOWS AND WETLANDS OF CENTRAL ANATOLIA, AND THE MEDITERRANEAN REGION PROVIDING HABITATS FOR ENDANGERED

SPECIES SUCH AS MONACHUS MONACHUS, CARETTA CARETTA, AND CHELONIA MYDAS. TURKEY IS HOME TO 120 MAMMALS, MORE THAN 400 BIRD SPECIES, 130 REPTILES, AND CLOSE TO 400 FISH SPECIES.

Turkey has undergone a remarkable transformation in the management and planning of conservation of biodiversity over the past decade and took upon itself the responsibility of achieving the objectives of the Convention on Biological Diversity (CBD). Since the Rio Summit in 1992, important steps have been taken in enacting legislation and making policy commitments to conserve biodiversity.

In Turkey, the conservation of threatened species and endemic species is more emphasized and publicised than the conservation of biodiversity itself. Each year, the annual loss of 20,000 ha of forests results in soil erosion. About 80 % of coastal dunes have vanished due to physical developments.

During the last 30 years, 60 % of wetlands and a great portion of meadows have been destroyed by agricultural activities spurred by ignorance. Few examples indicate that the critical importance of the conservation and sustainable use of biological-genetic resources for the food and health sectors should be soon understood.

Like many other Mediterranean countries, Turkey is rapidly losing its agricultural lands, meadows because of incorrect land-use practices, and, these areas are becoming degraded due to the increase in soil erosion and the use of chemical agents and fertilizers.





## >> THE BIG TURKISH TRANSFORMATION

### Laws are not enough

The experiences of the last five years have led us to clearly understand that the designation of protected areas based on legislation alone is not good enough for the sustainability of biodiversity. These areas need to be managed with different approaches, and success is hard to achieve without the participation of communities living in these areas or their vicinity.

Sustainable use of natural resources and biodiversity is a relevantly new concept, and its content should be incorporated in existing legislation. Moreover, international conventions should be used to bring Turkey in line with international, and regional legal requirements such as the CBD and the Barcelona Convention and its Protocols.

The National Report of Turkey for the Johannesburg Summit was prepared with the participation of the relevant governmental organizations, NGOs and private sector.

In this period, a better and deeper appreciation of the following issues were realised: sustainable use and conservation of biodiversity should be integrated in governmental plans; institutional capacity should be strengthened, and inter-organizational cooperation and partnerships should be developed.

Experience shows that approaches based on the cooperation of governments and NGOs are more effective. The conservation activities that secure public participation have a better chance of producing effective results.

The NGOs in Turkey that work on the conservation of biodiversity have made important achievements in public participation, capacity building and policy enforcement, as well as in case studies with noticeable outcomes.

The partnerships formed with the NGOs are increasing, however stronger cooperation is required. The private sector also needs to be encouraged for partnerships and to be aware of the growing market benefits of taking an "enlightened self-interest" approach to the conservation of biodiversity.

Achieving our goal of conserving and providing sustainable use of biodiversity encounters challenges, difficulties and opportunities. If we are to meet these challenges and difficulties, all stakeholders must pull together their support to work in partnership for a living planet.

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## > SAVING THE LAST MEDITERRANEAN PARADISES



**THE MEDITERRANEAN IS ONE OF THE WORLD'S MAJOR CROSSROADS FOR BIOLOGICAL DIVERSITY. DESPITE MILLENNIA OF HUMAN FOOTPRINT, ITS WATERS HOST A VERY HIGH NUMBER OF ENDEMIC SPECIES, SECOND ONLY TO TROPICAL REGIONS. TODAY THE ECOSYSTEMS OF THE MEDITERRANEAN BASIN ARE UNDER SERIOUS THREAT FROM POLLUTION, URBANISATION, OVER-FISHING AND OIL SPILLS.**

To help provide an overview of marine and coastal features throughout the Mediterranean basin, WWF carried out an in-depth scientific study –the Mediterranean Marine Gap Analysis. The aim was to identify the coastal and marine areas with the highest natural value in the region. For the first time, a statistical analysis of the seabed was applied to marine environment conservation. This allowed to have a clear picture of the Mediterranean basin as a whole.

The results show a high and widespread presence of biodiversity. However, virtually no important biological area is completely free from degradation, major threat to biodiversity coming from mounting urbanisation and tourism. The study finally allowed the identification of 10 coastal and marine eco-regions.

Following the principle that the best tool to face the existing and potential threats is anticipated protection, WWF has already started direct field and policy action in three of them, which are considered as priority.

In the Lycian coast of Turkey, thanks to a joint work of WWF/DHKD and WWF Mediterranean Programme Office, the village of Çirali has developed its tourist economy based on small pensions and Çirali-branded organic products. The coast of Çirali, hosting one of the key nesting sites for sea turtles and a monk seal habitat, is up to date a unique case in the Mediterranean for responsible tourism management.

The underlying idea of WWF projects is to work on initiatives that can be repeated in other locations. Çirali's case will be promoted in developed areas such as Kemer as well as in small-scale tourism destinations in the Mediterranean.



WWF / CANON / P. REGATO



## >> SAVING THE LAST MEDITERRANEAN PARADISES

In this respect, the Tunisian Kroumerie-Mogod region has been selected as another key area to protect. It offers a barely visible complete combination of ecosystems that include landscapes from sea to forest in the same area. But large-scale tourism development has begun to destroy some of the most important sand dunes coastal habitat (Tabarka) and threatens fish stocks and sea bottoms.

Together with the Government and the Mediterranean Action Plan's Specially Protected Areas Regional Activity Center in Tunis, WWF is working to establish a network of coastal and marine protected areas and a responsible tourism framework in the Northwest coast of Tunisia between Bizerte and Tabarka (Coral Coast).

A key approach for WWF is to work with local partners and stakeholders. On the Dalmatian coast, WWF and their Croatian partners Sunce and Green Action have launched a new initiative on the islands of Vis, Lastovo and Mljet. Two of the richest fishing areas in the Adriatic are in this area, which also includes breath-taking coastal and marine landscapes. Besides, Croatia is predicted to become one of the leading tourist destinations in the Mediterranean.

To avoid negative impacts of over-fishing and mass tourism in the future, there is a need to put in place environmentally sustainable, socially beneficial and economically viable activities related to tourism and fisheries.

Still, a lot remains to be done to ensure the oldest cradle of European civilization's protection. Currently, less than 1% of the Mediterranean Sea is protected. WWF's overall goal is to ensure the protection of at least 10% of the total surface of these 10 eco-regions and achieve sustainable resource use in all of them by 2010.

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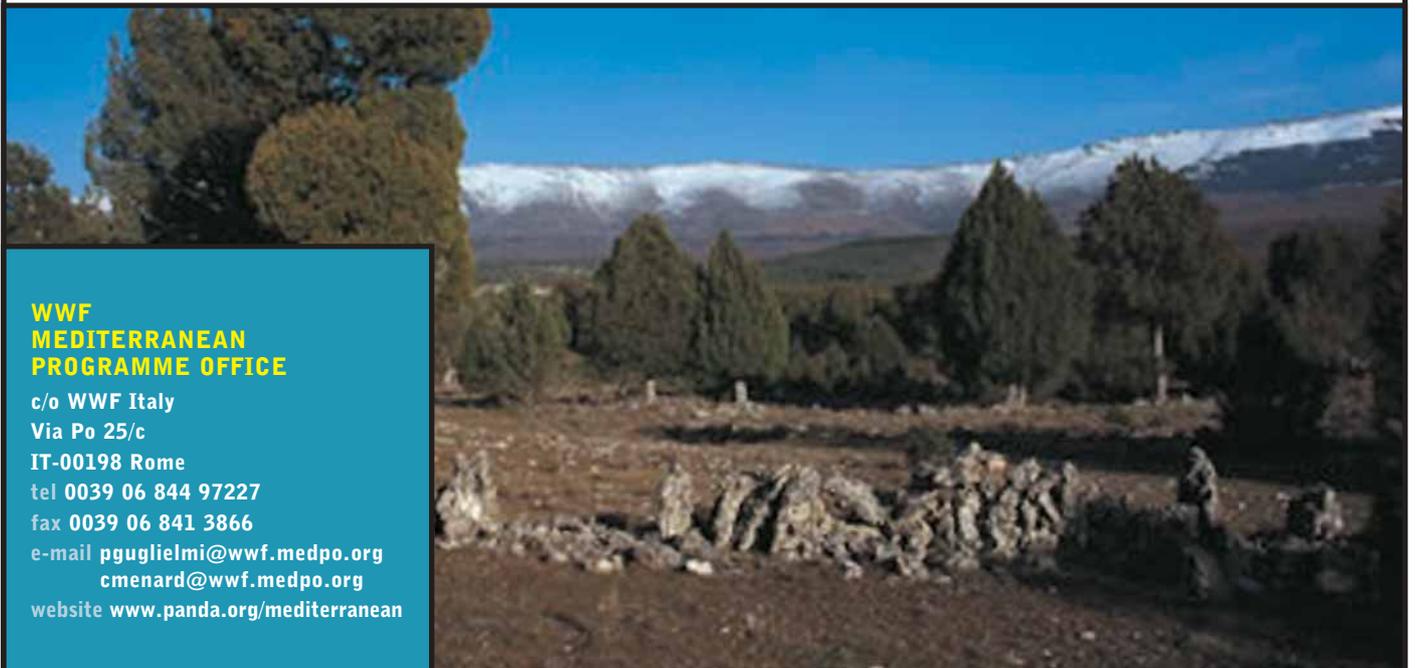
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## > THREE MEDITERRANEAN, AMONG THIS YEARS' UNEP GLOBAL 500 LAUREATES



**A French who devoted his life to the cause of environment; a Lebanese journalist who triggered an unprecedented environmental public awareness campaign in the Middle East, and an Algerian children's group, which helped cut water wastage among communities in the Sahara, all of them from the Mediterranean region, are among this year's winners of the UN Environment Programme "Global 500 Award".**

A Briton who championed the cause of the great apes and the rhino before tragically dying in an air crash, and an Indian whose eco-friendly toilet is transforming the health and lives of the urban poor join the three Mediterranean winners.

Two other winners are a Nigerian whose company delivers "sustainable development in action" by using gum arabic to boost farmers' incomes while rehabilitating West African dry lands, and a litter-busting brigade of Nepalese women who have transformed waste management in this Himalayan mountain kingdom.

A team of Bangladeshi lawyers who are bringing environmental and social justice to their country completes the octet of this year's winners. The Bangladesh Environmental Lawyers Association (BELA) was set up by a group of young lawyers in 1991 and has since become a true pressure group against environmental violations.

Klaus Töpfer, the Executive Director of the UNEP presented the 2003 Global 500 laureates with their award for outstanding achievements during the World Environment Day (WED) celebrations, which were held on 5 June in Lebanon –for the first time in 30 years, in an Arabic country. The theme "Water: Two Billion People Are Dying for It!" supports the celebration of 2003 as the International Year of Freshwater.

Töpfer said that "every year it is our privilege to recognise those individuals and groups who have gone beyond the rhetoric and the grand-standing, who have seized the issues and transformed a dream into reality, turned ideas into action on the ground".

He added that "Governments alone are unlikely to achieve much without the support of all sectors of civil society, without the inspiration of individuals and small, dedicated grassroots groups, like those we are applauding on WED".

website [www.global500.org](http://www.global500.org)

The Global 500 Award, launched in 1987 to honour individuals and organizations for their outstanding achievements in the field of environmental protection, has two categories, one for adults and one for youth.

As for winners from the Mediterranean region, Serge M. Antoine (France) is among the first category winners. As early as the 1950s, he saw the need for a better protection of natural areas in France. His actions led to two major decisions: the adoption of a new form of regional planning and the setting up of the "Parcs Naturels Régionaux" –similar to biosphere reserves.

Antoine played a major role in the creation of the Ministry of Environment and was Secretary-General of the High Committee for Environment. He took an active part in the preparations for the Stockholm Conference and in the establishment of UN Environment Programme.

He was instrumental in negotiating the 1976 Barcelona Convention, which led to the setting-up of the Mediterranean Action Plan (MAP) and launched the initiative for a study of the region, which became the Blue Plan. In 1996, he advocated for a Mediterranean Commission for Sustainable Development.

Najib Saab (Lebanon) is another Adult category winner. Through Al-Bia Wal-Tanmia (Environment and Development) magazine, which he launched as a private initiative, Najib Saab has triggered an unprecedented environmental public awareness campaign in the Middle East, bringing environmental concerns to the Arab public-at-large and creating a regional environmental advocacy forum.

The influential magazine has a circulation of 38,500 in 22 countries. It is used in schools, and its articles are a reference for environmental curricula. Saab's editorials on sustainable development issues in the Middle East are syndicated to 10 daily newspapers.

Al-Bia Wal-Tanmia sponsors more than 360 environmental clubs in schools, and supports them with educational material and training. Saab has produced a weekly environmental educational television programme entitled Environment Club –a pioneering effort in the region.

As for the Youth Category, "Salle Pédagogique des Zones Arides" (Algeria) was the only winner. In 1998 the children of Beni Abbes in the southwest of the Algerian Sahara decided to carry out a survey on the problems of water and its management within households.

The target group consisted of 500 families in El Wata and 500 families in Beni Abbes. The results of the survey showed that there was significant wastage: wastewater, untreated, increasing wastewater volumes and possible pollution of the groundwater.

With their teachers' backing, they decided to set up a small experimental lagoon system. In December 1999, this was carried out with assistance from the Popular Communal Assembly.

The neighbouring "fellahin", who saw production in their plots increase, became partners in the project. A film, "Nest of Nurseries", telling the story of how the lagoon system was born, was produced with the help of ENTV (Algerian Television), for the international exhibition in Hanover, Germany.

Since the inception of the Global 500 Award in 1987, 735 individuals and organizations have been honoured with it.



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