

SUSTAINABLE MEDITERRANEAN

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المتوسطة المستدامة

**The Strategic Partnership for the Mediterranean Sea
Large Marine Ecosystem** - a collective effort for the
protection of the environmental resources of the
Mediterranean

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EDITORIAL

The Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem is a collec-

tive effort for the protection of the environmental resources of the Mediterranean proposed by UNEP and the World Bank to all the countries of the Mediterranean and to all international cooperation Agencies, International Financial Institutions (IFIs) and bilateral and multilateral donors. The Partnership will serve as a catalyst in leveraging policy/legal/institutional reforms as well as additional investments for reversing degradation of this damaged large marine ecosystem, its contributing freshwater basins, its habitats and coastal aquifers. It consists of two components, the Regional Component: Implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas (outlined in the present document) and the Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership (submitted by the World Bank).

The long-term objective to which the Strategic Partnership contributes is to create a partnership at the regional level for collaboration with the aim to reducing pollution from land-based sources and preserving the biodiversity and ecosystems of the Mediterranean from degradation. The work will involve all stakeholders in the Mediterranean with special emphasis on enhancing capacity in governments to ad-

dress environmental problems and to incorporate environmental considerations into national planning. The objec-

tive of the Regional Component is to support legal, policy and institutional reforms at the country and regional levels and assist countries in the implementation of the two Strategic Action Plans, SAP-MED and SAP-BIO, and related NAP priorities identified on the basis of the Transboundary Diagnostic Analysis. Together, these instruments will assist countries in achieving the MDGs and WSSD targets. The results of the Regional Component will include the increased capacity of basin countries to implement policies and strategies that address SAP priorities; increased knowledge of countries and donors on the most effective and/or innovative projects/technologies that address regional priority objectives; a fully developed replication strategy for scaling-up successful investments within and among countries; stress reduction measures monitored at water-body level; increased coordination of donor and government programmes addressing SAPs; and the implementation of demonstration/pilot projects in a number of countries.

This issue of *Sustainable Mediterranean* is dedicated almost in its entirety to the Strategic Partnership in which MIO-ECSDE is a full partner, responsible for the effective NGO involvement in its implementation.



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THE STRATEGIC PARTNERSHIP FOR THE MEDITERRANEAN SEA LARGE MARINE ECOSYSTEM

The Mediterranean Sea Large Marine Ecosystem is under increasing threat due to uncontrolled coastal development, population expansion, increasing coastal tourism, unregulated and unsustainable fishing, over-extraction of freshwater (including from aquifers) and pollution. The population of the Mediterranean region has almost doubled since 1970, with greatest densities in the coastal zone. Tourism also represents an additional stress on resources and on sources of pollution and this is expected to increase in the future. Urban growth rates are high with predictions that for southern and eastern Mediterranean countries population will shift from predominantly rural to urban. Currently, 42 percent of the coastal zone is under artificial land cover and it is projected that half the coastal zone will be covered by roads, ports, airports and industrial and power facilities by 2025.

Recognizing the need to protect the Mediterranean Sea, all the riparian States and the EU launched an Action Plan for the Protection and Development of the Mediterranean Basin (MAP) in 1975 as the first Regional Seas Programme of UNEP and signed the Barcelona Convention for the Protection of the Mediterranean Sea against Pollution. As a result of 30 years of work carried out by MAP and its Regional Activity Centers (RACs), knowledge of the environmental status of the Mediterranean Sea among member states of the Contracting Parties, intergovernmental and non-governmental organizations has been greatly improved and a large number of activities for the protection of the marine environment have been implemented. As a result of the pressures described in the previous paragraph, the state of the environment in the Mediterranean has, unfortunately, not improved substantially and in some cases it has even deteriorated. A more proactive approach on the regional scale seemed to be the right response to face those challenges and MAP with the financial support of GEF launched two consecutive projects which prepared the Transboundary Diagnostic Analysis for the Mediterranean Sea (TDA-MED) followed by the preparation of two Strategic Action Plans (SAPs).

The TDA-MED was prepared in 1999 and was revised and adopted by the Contracting Parties to the Barcelona Convention in 2004. The TDA-MED identified the major sources of transboundary pollution and hotspots and provided a foundation for interventions at national and regional level that would benefit both the individual countries and the basin as a whole. Decline in

biodiversity, fisheries, and seawater quality, along with human health risks and the loss of groundwater dependent coastal ecosystems were identified as the major environmental concerns of the basin. The TDA-MED was used as a basis for the preparation of two Strategic Action Programmes (SAPs): the Strategic Action Programme to address pollution from land-based activities (SAP-MED) and the Strategic Action Programme for the Conservation of Mediterranean Marine and Coastal Biological Diversity (SAP-BIO), which were adopted by the Contracting parties in 1997 and 2003 respectively. The SAP-MED and SAP-BIO outline the specific targets and activities agreed by the member countries to address the Mediterranean Sea environmental degradation and formed the basis for the formulation of the countries National Action Plans (NAPs), finalized and endorsed by the Contracting Parties in 2005. The costs of priority pollution remedial actions identified in SAP-MED over a 10 year period has been estimated at almost US\$ 10 billion. SAP-BIO identified 226 actions at national level and 30 actions at regional level for biodiversity protection with estimated costs of US\$ 100 million and US \$40 million respectively.

The Mediterranean countries recognize the need for a coordinated and innovative approach for the implementation of policy reforms, priority interventions and investments that address transboundary pollution and biodiversity conservation priorities identified in the two SAPs and the NAPs. Accordingly, a collective effort for the protection of the environmental resources of the Mediterranean - the Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem - is proposed by UNEP and the World Bank to all the countries of the Mediterranean and to all international cooperation Agencies, International Financial Institutions (IFIs) and bilateral and multilateral donors. The Partnership will serve as a catalyst in leveraging policy/legal/institutional reforms as well as additional investments for reversing degradation of this damaged large marine ecosystem, its contributing freshwater basins, its habitats and coastal aquifers. It consists of two complementary components, the Regional Component: Implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas and the Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership (submitted by the World Bank).

The long-term objective to which the Strategic Part-

nership contributes is to create a partnership at the regional level for collaboration with the aim to reducing pollution from land-based sources and preserving the biodiversity and ecosystems of the Mediterranean from degradation. The work will involve all stakeholders in the Mediterranean with special emphasis on enhancing capacity in governments to address environmental problems and to incorporate environmental considerations into national planning. The objective of the Regional Component is to support legal, policy and institutional reforms at the country and regional levels and assist countries in the implementation of the two Strategic Action Plans, SAP-MED and SAP-BIO, and related NAP priorities identified on the basis of the Transboundary Diagnostic Analysis. Together, these instruments will assist countries in achieving the MDGs and WSSD targets. The results of the Regional Component will include the increased capacity of basin countries to implement policies and strategies that address SAP priorities; increased knowledge of countries and donors on the most effective and/or innovative projects/technologies that address regional priority objectives; a fully developed replication strategy for scaling-up successful investments within and among countries; stress reduction measures monitored at water-body level; increased coordination of donor and government programmes addressing SAPs; and the implementation of demonstration/pilot projects in a number of countries.

Accordingly the project is composed of the following 5 components:

1. Integrated approaches for the implementation of the SAPs and NAPs: ICM, IWRM and management of coastal aquifer;
2. Pollution from land based activities, including Persistent Organic Pollutants: implementation of SAP MED and related NAPs;
3. Conservation of biological diversity: implementation of SAP BIO and related NAPs;
4. Project Management and coordination, including replication, M&E and communication strategies; and

5. NGO and CBO mobilization and Small Grant Programme.

With this structure a clear attempt is made to strengthen an integrated and holistic approach to the implementation of both SAP-MED and SAP-BIO and the NAPs. This is evident in the structure and content of Components 1 and 5 but also in Component 4 in which the Communication/Information and Replication Strategies are designed and developed in such a way that integration is ensured. Components 2 and 3 adopt a sectoral approach, basically for technical reasons, but linkages between are ensured through the other three components. Additionally, the Project Management Unit in close collaboration with the Executing Agency UNEP/MAP and its regional Activity Centers, the Steering Committee and the Coordination Group will make the best use of existing mechanisms within the Barcelona Convention structure, to ensure integration.

The regional approach to the implementation of the SAPs and NAPs has a number of important advantages, which include the implementation of a number of regional plans of action to protect the coastal zone from pollution and biodiversity loss, to transfer knowledge and skills between countries, to apply best practice, to promote the adoption of policy reforms throughout the region and to enhance the replication of successful pilot projects to achieve regional objectives. Full stakeholder ownership and participation will strengthen as a consequence of the recognition that each is doing its part to contribute to a wider regional cause. A regional framework also provides a better mechanism for cooperation with diverse partners. An overall strategic approach incorporating a comprehensive suite of actions and investments is a more cost-effective and higher impact vehicle to demonstrate benefits than a series of individual projects. Such a strategic approach will also help to promote action over a specified and shorter period so that more tangible results can be achieved in a shorter timeframe.

Strategic Partnership for the Mediterranean LME

Investment Fund World Bank

Investment projects,
demonstrations

Regional Project UNEP/MAP

Reforms,
capacity building
Replication mechanisms



SP Project Management and Co-ordination Co-ordination Group and Steering Committee



Investment Fund Sub-Projects

Provisional list to include:
Bosnia & Herzegovina and Croatia:
Neretva and Trebisnjica River Basin
Management Project;
Egypt: Alexandria Integrated Coastal
Zone Management Project

Component I. Facilitation of policy and
legislative reforms for SAP MED and SAP
BIO

Component II. Replication Strategies. SAP
MED and SAP BIO

Component III. Technical Assistance

Component IV. Information & Communication

Component V. NGO mobilization and small
grants programme



Implementation of
SAP/MED and **SAP/BIO**
in participating countries

Environmental challenges of the Mediterranean Sea addressed by the Strategic Partnership for the Mediterranean Large Marine Ecosystem

The Mediterranean Sea is the largest semi-enclosed European sea, occupying an area of about 2.5 million km². It is surrounded by 21 countries¹ having differing levels of economic and social development and is at the conjunction of three continents. Uncontrolled coastal development, population expansion, increasing coastal

tourism, unregulated and unsustainable fishing, fresh-water damming, over-extraction of freshwater (including from aquifers) and pollution are the greatest threats to the marine and coastal ecosystems. Climate change is also considered an important impending threat to the Mediterranean Sea basin (see below). The revised TDA for the Mediterranean Sea identifies the major transboundary concerns as shown in Box 1.

Box 1. Major transboundary environmental concerns in the Mediterranean

Transboundary degradation of **coastal habitats and the decline of biodiversity** arise from the following factors: marine living resources are often migratory and coastal habitats provide nursery and feeding grounds to migratory species; thus, the degradation of coastal habitats contributes to an overall decline in biodiversity. The sustainability of marine and coastal habitats depends on the integrity and viability of their interlinked, transboundary ecosystems, that provide support to all trophic levels in the food chain.

Transboundary aspects of **fisheries** sustainability and management are of particular importance regarding migratory and shared stocks. This makes it essential to address fisheries management at an international level. This task is complex in the Mediterranean as there are a large number of riparian states in varying stages of development regarding the management of fisheries. Future progress in terms of fisheries management will require the ability to translate from a multilateral dimension into coherent national practices. The number of shared fisheries has increased in several areas of the Mediterranean such as the Alboran Sea, the Gulf of Lyons, the Northern Tyrrhenian Sea, the Adriatic Sea, the Ionian Sea, the Aegean Sea, the Sicily Strait and the Gulf of Gabes. The number of shared fisheries already identified justifies concerted action to be taken for these stocks at the international level.

Transboundary concerns related to **marine water quality** arise from the fact that pollutants often travel great distances through air, sea currents and rivers before their effects are manifest. Persistent toxic substances dispersed by atmospheric circulation, the transboundary transport of contaminants such as polycyclic aromatic hydrocarbons (PAHs) and eutrophication and their effects on sea birds and other marine life are the main focus areas of sea water quality. Pollution hot spots can also affect biodiversity on Mediterranean-wide scales in addition to local impacts.

Transboundary elements affecting **human health** include the trade in contaminated seafood that diffuses health concerns beyond the Mediterranean basin and the exposure of tourists. There are also risks of adverse health impacts from contact with contaminated seawater, such as gastroenteritis, ear, skin and eye infections, viral diseases such as hepatitis A and cholera. Superficial or deep mucosae can also arise from contact with contaminated beach sand during visits to Mediterranean beaches. Without adequate water resource management, human health risks will continue to increase. Lack of water and sanitation, inadequate waste and wastewater disposal, waterborne disease, unhealthy seafood and the instances of eutrophication will increase.

Transboundary threats to **coastal aquifers**. The groundwater problems in the Adriatic (eastern coast) basin and in selected section of the Levantine and the Southern Mediterranean coasts are linked to coastal aquifer freshwater-saltwater interfaces. The problems are linked to, and arise from, water imbalances and freshwater discharges, pressure on groundwater supplies, saltwater intrusion, coastal aquifer salinization, nutrient and contaminant transport in the context of the preservation of freshwater, brackish water and coastal water ecosystems. They are ultimately attributable to the lack of policy and sustainable legal and institutional frameworks for coastal aquifer management. The problems vary according to the vulnerability of the aquifer systems, the hydrogeology and importance of land-based water pollution and are related to: (a) sustainable protection and use of shared coastal aquifers; and, ultimately, to (b) the sustainability of the regional basin including marine water balance, water quality and the impacts on marine ecosystems.

Population growth, tourism and urbanization

The Mediterranean countries occupy an area of 8.8 million km², with an aggregate population of 427 million in 2000. The population of the Mediterranean region has undergone rapid growth in the last 35 years having almost doubled since 1970. Population density is greater in coastal than non-coastal areas. Defined by its 234 coastal regions², the coastal zone occupies 1.1 million

km², with a population of 143 million. In addition, an estimated 176 million tourists visited the coastal region in 2000. By 2025, the population of the coastal zone is predicted to increase by an additional 31 million, with 130 million more tourists. Currently, 42 percent of the coastal zone is under artificial land cover and it is projected that half the coastal zone will be covered by roads, ports, airports and industrial and power facilities by 2025.

1 Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Morocco, Serbia and Montenegro, Slovenia, Spain, Syria, Tunisia, and Turkey, are riparian countries.

2 Blue Plan's Environment and Development Outlook, 2005

The wide variations in political and economic systems, as well as historic differences, have led to great inequalities in the level of development among Mediterranean countries. These are exhibited by the overall differences between the northern Mediterranean countries (NMC) and the southern and eastern Mediterranean countries (SEMC). Population growth is the greatest in the SEMC, at 2.4 percent per year, compared to 0.4 in the NMC. Urban growth rates are generally high for the Mediterranean, and this trend is projected to continue, especially for the SEMC (at 2.08 percent per year on average). If this continues, in 50 years the population will shift from essentially rural to urban. In terms of wealth, there are also strong contrasts with the EU countries having 90 percent of the GDP for the Mediterranean with GDP per capita values twelve times higher than in north African countries.

Loss of biodiversity and the unsustainable use of fisheries

The Mediterranean Sea contains 7% of the world's known marine species in an area constituting only 0.8 per cent of the world's oceans. The Mediterranean Sea contains 18% of the world's marine flora making it arguably one of the richest regions of marine biodiversity in the world. Because of this, and the threats posed by urban development, weak infrastructure, pollution and agricultural practices, invasive species, tourism, etc., the Mediterranean Sea remains a global biodiversity hotspot. It is listed in the top 15 marine hotspots by Conservation International (CI) and figures prominently in the WWF Global 200 list. Coastal erosion has increased as a result of human activities, saline intrusion has increased as a result of excessive extraction from coastal aquifers, and invasive species have become new sources of environmental degradation. While policies and interventions to protect nature are being implemented in all countries, they are insufficient to address both current damage and impending threats.

Conservation of biodiversity through the establishment and management of Marine Protected Areas

As a result of the pressure to both conserve and use, Mediterranean countries have already established a number of marine protected areas (MPAs). These range from small specific areas for critically important biodiversity, such as the MPAs established for the protection

of the Monk Seal in Greece, Turkey and Morocco, the Port Cros Park in southern France, and the Pelagos Sanctuary for Mediterranean Marine Mammals, to trans-boundary areas such as that created by France, Monaco and Italy in the Ligurian Sea. The total of protected areas in the Mediterranean, of all IUCN categories, reached 1.15 million ha in 1995, a six-fold increase in 25 years. In 2003, there were 152 Specially Protected Areas (SPAs), including 47 marine areas. Most of these, however, are situated in the northern Mediterranean.

The increase in protected areas, however, is minor compared to the larger proportion of protected areas found in other continental regions. There also exists a gap between the legal status of protected areas and the application of measures required for their conservation, with insufficient funds being allocated to management. Many were created purely for species protection without adequate consideration of the opportunities for capturing multiple benefits through the careful consideration of location, size, (multiple-use) zoning/management and the synergistic effects of networks. Furthermore, several national reports have identified common problems affecting the selection, establishment and management of marine protected areas in the Mediterranean (see Box 2, next page).

As the SAP-BIO clearly states, there is a critical need to review the existing MPA and coastal PA networks in the light of an expanding literature³ on design and monitoring of MPAs to achieve both conservation and sustainable use benefits (fisheries, tourism⁴, etc.), thus bridging the BD-1 and BD-2 strategic priorities for biodiversity. Although mass tourism remains a major threat to Mediterranean biodiversity, there are successful examples of mainstreaming biodiversity; *e.g.*, coastal tourism in Slovenia and southern Albania, green tourism in the Cres-Losinj archipelago in Croatia, integrated management of coastal areas in the Antalya region of the southern coast of Turkey and ecotourism, including whale-watching off the Balearic Islands in Spain.

Sustainable fisheries and the need for an ecosystem approach to fisheries

Fishing in the Mediterranean has increased by about 48 percent since 1970, with heavy exploitation of both bottom living (demersal) and large pelagic stocks (*e.g.*, tuna and swordfish)⁵. The upward catch trends for many

3 Syms, C. and M. H. Carr (2001) Marine Protected Areas: Evaluating MPA effectiveness in an uncertain world. Scoping paper presented at the Guidelines for Measuring Management Effectiveness in Marine Protected Areas Workshop, Monterey, California, May 1-3, 2001, sponsored by the North American Commission for Environmental Cooperation. http://www.biology.ucsc.edu/people/carr/Syms/syms_download_page.htm

4 *e.g.*, Alonissos Marine National Park in the Northern Sporades in Greece combines tourism with conservation of the Monk Seal, one of the 12 most threatened mammals in the world

5 EEA report No 4/2006 "Priority issues in the Mediterranean environment"

Box 2. Common problems affecting the conservation of marine biodiversity through the use of MPA's in the Mediterranean

A series of problems have been recurrently identified by National Reports, although, obviously, the importance of magnitude of each problem differs among the countries bordering the Mediterranean Sea:

- Insufficient legal system, lack of adequate legislation;
- Confusion of competency, or fragmentation of responsibility (leading to problems of implementation of the existing laws);
- Lack of coordination between administrations, competencies overlap;
- Interference with other human activities occurring in the coastal zone, mainly tourism;
- Low or no participation of stakeholders and other agents in the decision-making process;
- Poor effort to improve public awareness on marine conservation issues;
- Lack of effective enforcement measures in some cases;
- Lack of effective scientific monitoring;
- Lack of sufficient economic resources to achieve protection measures, so that a number of MPAs receive only nominal management and protection ("paper MPAs");
- Problems of mismanagement and deterioration caused by the limited experience of the people administrating MPAs;
- Lack of effective conservation measures to protect particular species (monk seal, sea turtles, cetaceans, etc.) and/or communities (e.g., seagrass meadows);
- Need to set up a network of MPAs, and therefore define the goals, mechanisms and management organization for such a network; and
- Need for integrated coastal zone planning and management.

Other identified problems that affect the selection, installation, management and evaluation of Mediterranean MPAs are the following:

- Need to clearly establish the specific goals of each MPA;
- Improved scientific basis for the selection (location, habitats included, depth range, etc.) and design (size, shape, number, proportion of total surface protected, etc.) of MPAs;
- Need for appropriate monitoring and evaluation of the effectiveness of MPAs based on sound sampling designs (e.g., BACIP, beyond-BACI...);
- Lack of empirical evidence for potentially complex effects of MPAs, e.g., spillover, indirect effect on ecosystems ("cascade" effects), effects on larval replenishment of commercially and/or ecologically important species, genetic effects, socio-economic results, etc.;
- Need to ascertain the relationship between MPAs with other management tools.

species up to about a decade ago suggest that recruitment of young fish survived intensive fishing and a lack of quota controls. However, short-term trends over the last ten years now reflect a general picture of full to over-exploitation for most demersal and shellfish populations. The primary causes of the decline in fisheries identified in the TDA-MED include: (i) excessive fisheries effort in some areas of the Mediterranean; (ii) use of harmful fishing practices, including non-selective catch techniques and bottom trawls that lead to excessive by-catch; (iii) the development of more efficient capture technologies (ships and fish-finding gear) that can lead to over-exploitation if not carefully monitored and controlled. Secondary causes include: (iv) loss of shallow-water habitats for some life stages of critical fisheries; and (v) adverse water quality from rivers and coastal aquifers, sewage discharges, dredging and non-point source releases of contaminants.⁶

One of the major impacts of fishing on the marine ecosystem derives from the discard rate, which, at between 40-60% of the initial catch, is greatest in the western Mediterranean and commonly includes vulnerable or endangered species. Physical disturbance of the seabed by mobile gear has also been observed to damage fragile habitats including seagrasses, corals and sponges.

As described in SAP-BIO, up to now, there is a general failure of traditional management measures (quotas, size limitation, control of effort, temporal closures, etc.) to prevent over-exploitation of stocks, habitat degradation and wider ecosystem impacts. The primary problems are linked to the management of fishery resources that have to address the heterogeneous character of Mediterranean fisheries and the frequent, seasonal shifts of gear used by fishing units. In addition, there is the

6 UNEP MAP TDA for the Mediterranean Sea, 2004

practical difficulty of enforcing existing regulations leading to the frequent occurrence of illegal fishing practices (e.g., trawling over seagrass beds, catching undersized individuals, etc.) and in some cases, the lack of adequate legislation to facilitate fisheries management. There are also technical issues such as low gear selectivity and the difficulty of maintaining adequate statistics on fishing catches due to the occurrence of multiple and frequently uncontrolled landing points. Generally, there is a lack of awareness among fishermen about the importance of conserving marine biodiversity and this is compounded by the fragmented nature of many Mediterranean fishing communities and a complex and sometimes inefficient organization for marketing and distribution.

Other problems that were identified include the gradual disappearance of traditional knowledge about the biology of target species and the spatial distribution of key habitats. There are also difficulties faced by scientists in building reliable dynamic biological and economic models caused by: (i) a lack of appropriate basic knowledge; (ii) uncertainties associated with the nature of predictive models themselves; and (iii) the intrinsic uncertainty of marine ecosystem dynamics. Finally, important shortcomings have been noted in the mechanisms for coordinating the different stakeholders within integrated management schemes (considering co-management and also co-responsibility) based on an ecosystem approach.

The principles of the FAO Code of Conduct for Responsible Fishing (CCRF) are accepted by Mediterranean countries, but delivering and enforcing the practical elements of the CCRF requires both real political will combined with a long-term and practical approach. The need for an ecosystem approach to fisheries (EAF) in the Mediterranean has now been recognized. The General Fisheries Commission for the Mediterranean (GFCM's) Sub-Committee on Marine Environment and Ecosystems (SCMEE) is mandated to address EAF. In 2005, it established an *Ad Hoc* Working Group on EAF and advised GFCM to prohibit towed dredge and trawl fisheries below 1000 m to protect deep-water fish. However, the SCMEE acknowledges the difficulties of implementing the ecosystem approach to fisheries, citing in particular the lack of contributions from members to ensure significant progress in studying the impact of

surface and bottom longline fisheries on non-commercial species, birds and turtles⁷. SCMEE also stressed the need to strengthen activities on the impact of large-scale driftnet fisheries on biodiversity and on threatened or endangered species.

Climate Change: Risks to the conservation of biological diversity

Climate change, although not addressed directly in the proposal, is becoming an important consideration in the protection of the Mediterranean Sea basin and therefore will be briefly discussed. Littoral and pelagic zones often are forgotten in studies of climate change impact. However, important changes have already been observed (e.g., a significant increase in average temperatures of the waters in the western Mediterranean basin over the past 20-30 years)⁸. Temperature changes are reflected in substantial changes in the relative abundance of thermophilic species and there have been increased catches of such species, including *Diplodus cervinus*, *Epinephus marginatus*, *Pomadasyus incisus*, *Sphyræna sphyraena*, *Balistes carolinensis*, *Sardinella aurita*, and *Pomatomus saltatrix*.

In many areas in the Mediterranean, population, economic activity, and arable land are concentrated in coastal zones. This has led to a decrease the resilience and adaptability to climate variability and change. Some coastal areas, such as the Po River plain in Italy, are already beneath mean sea level and many more areas are vulnerable to flooding from storm surges. Sea-level rise and possible changes in the frequency and/or intensity of extreme events, such as cyclones and storm surges, represent consequences of climate change that are of most concern regarding coastal zones. Except for sea-level rise itself, there is currently little understanding of the potential effects of climate change on the coastal zone. Under the IS92a "business-as-usual" scenario⁹, global sea level is projected to rise by about 5 mm/yr (with an uncertainty range of 2-9 mm/yr). Without adaptation, a rise in sea level would inundate and displace wetlands and lowlands, erode shorelines, exacerbate coastal storm flooding, increase the salinity of estuaries, threaten freshwater aquifers, and otherwise impact water quality and infrastructure. Areas most at risk would be tidal deltas, low-lying coastal plains, beaches, islands (including barrier islands), coastal wetlands and estuaries. Tidal range also is a key factor. In general, the

7 GFCM Report of the Twenty-Ninth Session Rome, 21-25 February 2005

8 IPCC Special Report on The Regional Impacts of Climate Change: An Assessment of Vulnerability

9 The IS92a global energy scenario of the Intergovernmental Panel on Climate Change (IPCC, 1994) has been widely used as a framework for trying to understand better the long-term aspects of the climate change challenge. This scenario is often referred to in climate change policy circles as a "business-as-usual" (BAU) scenario representing a plausible course for global energy under a public policy that gives no consideration to climate change concerns.

smaller the tidal range, the greater the response to a given rise in sea level. This pattern suggests that the Mediterranean and Baltic coasts, with their low tidal range, may be more vulnerable to sea-level rise than open sea coasts.

Examples of susceptible coasts include the Rhone, Po and Ebro River deltas. These areas are already subsiding because of natural and sometimes human factors and they are also sediment-starved as a result of changes in catchment management. For example, the Ebro delta has lost 97% of its sand supply since the 1950s. Reduction or loss of these areas would impact important agricultural and natural values. Many cities, such as Thessaloniki and Venice, are built on estuaries and lagoons. Such locations are exposed to storm surges and climate change is an important factor to consider for long-term development. In Venice, a 30-cm rise in relative sea level this century has greatly exacerbated flooding and damage to this unique medieval city and permanent solutions to this problem are still being investigated. Beaches tend to erode following sea-level rise, which destroys a valuable resource and exposes human activities landward of the beach to increased wave and flood action. Intense recreational use of beaches in many coastal areas, particularly around the Mediterranean, makes this erosion a particular problem for the region.

In Egypt, for example, results from studies on various aspects of the impacts of, and possible responses to, sea-level rise indicate that a sizable proportion of the northern part of the Nile delta will be lost to a combination of inundation and erosion with consequent losses of agricultural land and urban areas. Agricultural land losses will also occur as a result of soil salinization. It is estimated that for a 1m sea-level rise, about 2,000 km² of land in coastal areas of the lower Nile delta may be lost to inundation. For the Governorate of Alexandria, two main economic areas appear most vulnerable: the Alexandria lowlands and the Alexandria beaches. The Alexandria lowlands, on which the city of Alexandria was originally developed, are vulnerable to inundation, waterlogging, increased flooding, and salinization under accelerated sea-level rise. The two surviving Alexandria beaches (Gleam and El Chatby) will be lost following a 50 cm rise in sea level. Based on the 0.5 m sea level rise scenario, estimated losses of land, installations, and tourism will exceed US\$32.5 billion. An average business loss is estimated at US\$127 million/yr because most tourist facilities such as hotels, camps, and youth hotels are located within 200-300 m of the shoreline. It has been widely reported that 8 million people would be displaced in Egypt by a 1 metre rise in sea level, assuming no protection and existing population levels (Broadus et al., 1986; Milliman et al., 1989). This

estimate is based on the displacement of 4 million people in the Nile delta and the entire population of Alexandria.

It should be noted however, that although global warming seems to be well established and global sea level rise as well, the response of various regions to that forcing is still a big unknown. It has been shown, for example, that global warming is not a unimodal phenomenon but rather a multimodal one with differing responses in different areas. In this respect it is interesting to note that during the period from 1960 to 1980 while global warming was evident on a global scale, the Mediterranean Sea's temperature at surface was decreasing. The complexity of positive and negative feedback mechanisms within the climate system and the weaknesses of present regional climatic models, should result in a cautious approach of the various prediction scenarios. This need for cautiousness applies of course to the discussion of the previous paragraphs as well. Nevertheless, there is no doubt that climate change will have an impact in the Mediterranean as well and therefore this is an issue to follow closely in the coming years.

Increasing pollution from land-based sources

Due to the high population density in the coastal zone and industrial development and agricultural practices, the Mediterranean is increasingly under threat from pollution. Eighty percent of the contaminant load of the Mediterranean Sea originates from land sources and the most common forms of pollution in the Mediterranean are eutrophication and the effects of chemicals, including persistent toxic substances (PTS), organic and pathogenic micro-organisms and hazardous solid waste.

Lack of infrastructure for sewage collection, treatment and disposal is still the greatest problem in many Mediterranean countries. Its influence on the marine coastal environment directly or indirectly affects human health, the stability of the marine ecosystem and the economy of the coastal zone. One of the most common and worrying environmental effects of urban wastewater discharge is the gradual destruction of habitat, particularly of meadows of phanerogames, with resulting decreases in biodiversity. Only 69 % of coastal cities with more than 10,000 inhabitants have sewage treatment plants, resulting in the annual discharge of more than 1 billion m³ of untreated sewage to the sea. The distribution of treatment plants is not uniform across the Mediterranean region; the northern Mediterranean coast having a greater part of its urban population served by a waste water treatment plants than the southern coast. Due to the increasing population of cities and failures in treatment plant operation, some waste wa-

ter treatment plants cannot meet their design specifications in terms of effluent quality.

Solid wastes produced in the urban centers along the Mediterranean coastline present a serious threat to both human health and the marine coastal environment. Studies reveal that between 30 and 40 million tonnes of municipal solid waste of coastal origin are generated annually. The random siting of waste dumps promotes the transfer of solid wastes into the marine environment. Also, in many cases, no measures have been taken to control and treat leachates from dumpsites and these are contaminating groundwater and/or the coastal marine environment with organic pollutants and heavy metals. In the Mediterranean, plastic alone accounts for 75 percent of the waste on the sea surface and the seabed. The main sources of waste in the Mediterranean Sea are direct disposal by households, tourist facilities and runoff from dumpsites (wastes from land sources).

The stage of industrial development in the Mediterranean countries varies greatly. Of the thirty sectors of activity primarily considered in the Annex I of the LBS Protocol, twenty-one are industrial. On an international scale, priority has been given to a group of 12 substances that are toxic, persistent and bioaccumulate because of the long-term risks they pose to human health, biodiversity and ecosystems. Less attention is paid to other potential pollutants, such as transient and biologically less reactive substances, suspended solids, biodegradable organic matter and nutrients because their effects are much more localized and less persistent. These latter substances are generated in large quantities by industries and their release to the environment can cause damage to human health, ecosystems, habitats and biodiversity. Most countries in the region have an important public industrial sector that comprises large industries. Notwithstanding the diversity of situations in the Mediterranean region, the public industrial sector includes: energy production; oil refining; petrochemical industry; basic iron and steel metallurgy; basic aluminium metallurgy; fertilizer production; pulp and paper production; and cement production. From such industries, an estimated 66 million m³ of untreated industrial wastewater is discharged to the Mediterranean each year.

Other contaminants include heavy metals (*e.g.*, cadmium, chromium, copper, nickel, lead and mercury), a wide variety of organohalogen compounds and radioactive substances. Heavy metal inputs to the Mediterranean derive mainly from industrial wastewater and runoff from contaminated sites. Reactive metals tend to precipitate into sediments and contaminate biota and in coastal areas, such as harbours and semi-enclosed bays,

increased metal concentrations have been found. Hexachlorocyclohexanes (HCHs) were extensively used in the past against pests in many Mediterranean countries. Although such applications have declined, residues of these compounds are found throughout the Mediterranean coast as a consequence of their environmental persistence. The main residual sources of HCHs (particularly lindane) are stockpiles and contaminated land.

Eutrophication resulting from increased nutrient inputs leads to an increase in planktonic biomass and, depending on the physical oceanographic conditions, can result in reduced concentrations of dissolved oxygen in deeper waters. Changes in nutrient influxes are also implicated in the incidence of toxic algal blooms, often referred to as "*red tides*". Such abnormalities have become a chronic problem in shallow water areas near river deltas (*i.e.*, those of the Rhone, Ebro, Po and Nile) and major urban conurbations. However, the Mediterranean is far from reaching the serious situations evident in the Black Sea and Sea of Marmara. The sources of nutrients are largely untreated urban wastewater and diffuse agricultural discharges and, accordingly, eutrophication incidents could increase with agricultural intensification and urban growth. Agricultural projections indicate that, by 2025, the use of fertilizers could increase by as much as 70 percent in the eastern Mediterranean (mainly in Turkey), 50 percent in the south and 5 percent in the north. In addition to nutrients, agricultural practices can cause significant soil erosion and pesticide contamination of surface and groundwater resources. This results in the mobilization of soils by rivers and the transport of pesticide residues into the marine environment

Persistent organic pollutants

Persistent organic pollutants (POPs) comprise 12 substances and groups of substances that are covered by the provisions of the Stockholm Convention. POPs are relatively stable compounds that are typically characterized by low water solubility and high fat solubility. Because many POPs are relatively volatile, their remobilization and long-distance redistribution through atmospheric pathways often complicates the identification of specific sources. Accordingly, successive releases over time result in the continued accumulation and ubiquitous presence of POPs in the global environment. For many Mediterranean countries, no detailed information is available on the releases of POPs from point sources. The main source is believed to be stockpiles and inventories associated with previous production and/or import. A contribution is also made by secondary releases from environmental reservoirs (*e.g.*, contaminated soils and sediments) resulting from previous use

and accidental spills. Contemporary contributions from industrial production are only important in cases where some restricted use of specific POPs is allowed (*e.g.*, DDT as precursor of dicofol and for malaria vector control) or POPs that are by-products of continued industrial processes.¹⁰

In the framework of the Strategic Action Programme (SAP MED) of the Barcelona Convention, POPs are included in the list of substances that have to be eliminated from effluent flows discharged into the Mediterranean Sea. Problems related to POPs have been identified in the National Diagnostic Analyses (NDAs) of most Mediterranean countries, mainly related to pesticides and PCBs.

During recent country-based assessments and action planning in the framework of the Stockholm and the Barcelona Conventions, all Mediterranean countries have identified PCB equipment still in service, stockpiles of PCB-containing electrical equipment, quantities of discarded equipment and quantities of oil that consist of, or are contaminated by, PCBs. In the NIPs, national electric companies are identified as the principal holders of this equipment, stocks and waste and thus represent the initial focus for the elimination of PCBs.

The nine pesticides have been widely used in the region in the past, but the production and usage of most of the compounds are now banned in the majority of the countries of the region as a consequence of the application of the PIC protocols, the exception being DDT, which is consented as precursor in the production of Dicofol and also for restricted pest control in some countries of the region. Endrin is allowed for very limited applications in the EU countries and is banned in Algeria, Cyprus, Israel and Greece. Heptachlor, Chlordane and Toxaphene are also banned or severely restricted and the same applies to HCB when used as a pesticide. Mirex is not affected by the PIC procedure, although many countries have banned its use.

In spite of the legislation in force, there are still large amounts of PCBs in use. This is because in many countries there are exemptions for restricted use in devices in use for long periods. In Albania the total number of transformers is 437, of which 95% are from the seventies and the eighties with PCB oils. In Egypt there are 3666 condensers and 26 transformers possibly containing PCB. In Lebanon there are still two old power plants with PCB equipment. While there is no information on Libya, in Syria there are still 91 transformers containing PCB.

In **Albania**, the National Action Plan (NIP) is under preparation. Nevertheless an inventory of equipment containing PCBs was established very recently. However, already in the country's NAP (2005) the following actions are proposed: (a) Inventory at country level of the amount of oils containing PCBs and the inventory of their storage places (achieved); (b) Preparation and implementation of the National Plan in the framework of LBS protocol and Stockholm Convention.

Egypt is addressing the PCBs management in the framework of POPs management programme. Actions described in the NAP are of a legal and institutional nature. There is a need to finalize the inventory of PCBs in Egypt. Egypt will implement the necessary legal and institutional measures to ensure the implementation of the LBS and Stockholm convention commitments.

Lebanon developed a comprehensive programme for the management of PCBs. Several actions were proposed for the management of PCBs, including: (a) introduction of emission and disposal standards and environmental limit values for PCBs; (b) ensuring zero PCB release from in-use transformers, sample and analyse dielectric oil in in-service transformers, and investigating the fate of 13 tonnes of PCB oil imported in 2002; (c) identification of all sources of PCB release; (d) identification, characterization and addressing unintentional releases of PCBs formed as a by-product of certain industrial processes; (e) reducing PCB releases from PCB-containing transformers in Zouk & Bauchrieh through labeling, storage, detection and containment; (f) identification of PCBs present in unidentified stockpiles and equipment still in use; (g) identifying appropriate measures to manage, handle and destroy stocks and articles in use, remedy contaminated sites and other hot spots of concern to public health and the environment (actions include treatment or disposal of PCBs-bearing oil and irreparable PCB contaminated transformers in an environmentally sound manner, and improving procedures for handling transformers at the EDL warehouse in Bauchrieh); (h) identification of PCBs contaminated sites and remediation in an environmentally sound manner; (j) facilitating or undertaking information exchange and stakeholder involvement; (k) public awareness, information and education; (l) reporting; (m) research, development and monitoring.

According to the NAP of **Libya** (UNEP/MAP, 2005), the General Electric Company has taken preventive measures to control PCBs. Most equipment using PCBs

10 EEA report No 4/2006 "Priority issues in the Mediterranean environment"

bearing oils has been replaced and collected on special sites, pending contracting with specialist companies to safely dispose them. Establishing a local listing of hazardous wastes (including PCBs) is also included in the priorities of the country, since there are no detailed data available on the quantities of PCBs. In the priorities of the NAP of Libya, an action was proposed for the creation of a Regional site for the treatment and disposal of hazardous chemical wastes including PCBs. The estimated cost for this site is 7 million Libyan Dinars and it is planned for 2007.

Actions related to PCBs management in **Syria** are proposed in the frame of the NAP, including: (a) substitution of PCBs bearing oil in five transformers (two in the Tartous and two in the Baniyas electric transformers station and one in the old Jableh Weaving Company); (b) phasing out all activities discharging PCB's from industrial sectors. In addition Syria proposed to develop its national legal framework to cope with LBS Protocol and Stockholm Convention commitments and ensure its proper implementation together with a country wide capacity building programme.

It is expected that the cost of disposal of 1 ton of PCBs (oil, condensers and metals) would cost approximately 2500\$ including cost of confinement, disposal, shipping to Europe authorization and labor. Accordingly 980 tons could be disposed through the implementation of this activity as follows: Albania 250 tons, Syria, 250 tons, Lebanon, 42 tons (total quantity), Lybia, 250 tons, and Egypt, 170 tons.

Over-extraction of freshwater from aquifers, contamination and salinization of groundwater

The availability and quality of freshwater resources for the population of the Mediterranean is a critical issue. Water demand in the region doubled during the second half of the 20th century and is now an aggregate of 290 km³ per year¹¹. The "water poor" Mediterranean population, those with less than 1000 m³ per capita per year, was 108 million in 2000 and could reach 165 million by 2025 (in nine southern and eastern Mediterranean countries). Of this latter population, 63 million (compared with 45 million in 2000) would be in shortage that is having less than 500 m³ per capita per year.

The exploitation index of renewable natural resources (defined as the ratio of withdrawals from renewable natural water resources to average renewable water resources) is high in Egypt, Israel and Libya where the withdrawal is now close to, or exceeds, natural resources. This index is increasing in all southern and eastern countries. In addition, in Libya, Israel and the Palestinian Authority, more than 10% of the water supply is taken from unsustainable resources (*i.e.*, underground reservoirs). As well as decreasing supply, the decreased quality of water resources (discussed previously) results in additional stress on water resources to satisfy the demand for drinking water.

Changes in freshwater quality and quantity also have direct impacts of the biodiversity of the basin. Of particular importance are coastal aquifers and groundwater that constitute an important source of freshwater discharge to the Mediterranean. Seepage from coastal aquifers is estimated to be 13 billion m³/yr and accounts for about one quarter of the total freshwater inflow into the Mediterranean. In the southern, eastern and Adriatic sub-basins there are few surface watercourses and coastal aquifers dominate the aggregate discharge of freshwater. Coastal aquifers support coastal freshwater and brackish water ecosystems and contain habitats with rich biodiversity. Such habitats include wetlands that are spawning grounds for fisheries and important resting sites for migrating birds. The threats to wetlands from aquifer mismanagement are twofold. First, overuse of aquifers can result in the drying up of wetlands dependent upon them. Second, wetlands are degraded by saline intrusion, which occurs when coastal aquifers are over-exploited, and pollutants introduced into the aquifers. Karstic aquifers are particularly vulnerable to saline intrusion and surface contamination, especially in the open karst systems exposed to anthropogenic contaminants. Freshwater seepage from karstic coastal aquifers that dominate large sections of the southern Mediterranean and the eastern Adriatic coasts are media for the transport of agriculture-derived nutrients, chemicals and other substances into the sea, thereby degrading critical wetland habitats. These underground karstic aquifer systems constitute habitats for unique types of biodiversity. Thus, degradation of these habitats is a threat to biodiversity.

11 A Sustainable Future for the Mediterranean: Blue Plan's Environment & Development Outlook, 2005

MISCELLANEOUS MEDITERRANEAN NEWS

MANAGEMENT OF SHARED LAKES BASINS IN SOUTHEASTERN EUROPE

Water is essential to all kinds of human development and livelihood support systems. Transcending most political and administrative boundaries, the available freshwater must be shared among individuals, economic sectors, intrastate jurisdictions and sovereign nations. There are numerous obstacles in achieving these aims. Except for these deriving from the interdependences that are created between different uses, the different capacities, legal and institutional frameworks, policies, priorities and interests of each country, obstacles also include entrenched positions over issues such as historical rights, cultural values and political persuasions.

Management of transboundary water bodies is of special importance in Southeastern Europe (SEE) region since ninety (90) percent of the territory of the SEE countries fall within transboundary river basins. Several countries depend mainly on external water resources - the average regional dependency ratio is 66 percent. Three major Lakes are among the major shared water bodies: Prespa¹², Ohrid and Shkoder¹³. These Lakes and

their basins are spread in a geographical area that includes Albania and its neighboring countries FYR Macedonia, Montenegro and Greece¹⁴ (see Table).

River Drin, flowing from Ohrid Lake through FYR Macedonia, enters and flow across Albania. White Drin flow through Kosovo into Albania and meet the main arm of Drin. Flowing through Albania, one arm of the Drin meets Buna River (which drains Lake Shkoder into the Adriatic Sea) near the city of Shkodra and the other drains into the Adriatic Sea south of Shkodra near the city of Lezhe. The watershed of the Drin Basin can be considered as the “connecting body”, linking the Lakes, wetlands and other aquatic habitats into a single ecosystem. The hydrographical net, lies in Albania, Montenegro, Serbia (Kosovo), FYR Macedonia and Greece. It is of significant cultural and also natural value supporting a variety of ecosystems and species of global importance.

This regional transboundary system is a fine example illustrating the interdependences created between dif-

Shared water bodies in the South Western Balkan Peninsula

Water bodies	Prespa	Ohrid	Shkoder	Drin
<i>Shared by:</i>	Albania, FYR Macedonia, Greece	Albania, FYR Macedonia	Albania, Montenegro	Albania, FYR Macedonia, Montenegro, Serbia (Kosovo)
<i>Physically interconnected (through surface waters flow)</i>				
<i>Physically interconnected (through ground-water flow)</i>				
<i>Status of Cooperation for the Transboundary sustainable management</i>	Declaration signed in February 2000 by the prime-ministers of the countries	Agreement between the littoral countries signed on 17 July 2006	Memorandum of Understanding between Albania and Montenegro, signed on 8 May 2003.	
<i>GEF Projects</i>	Operational	Ended	in PDF-B phase	Under consideration

12 The Prespa basin includes two lakes separated by a naturally formulated narrow strip of land: Macro Prespa and Mikri Prespa.

13 The Lake is called “Skadar” in Montenegro and “Shkodër” or “Shkodra” and also sometimes “Scutari” in Albania. From now on the English name of the lake – *Lake Shkoder* – will be used to avoid the usage of two – at least names – when referred to it.

14 The focus of this document is mainly on Albania, FYR Macedonia and Montenegro, and will refer to Greece where relevant.

ferent uses (fisheries, agriculture, hydropower generation, water supply and sanitation, tourism etc.) in four interconnected water bodies and a receiving sea extended in five countries. It can also be used to illustrate the complexity regarding the management of water resources in the region.

With the exception of efforts undertaken within the framework of external funded projects or initiatives of local stakeholders and international NGOs, the management of the three shared Lake basins has been rather unilateral - Ohrid can be recorded as the most advanced case, in terms of cooperation for the management of the Lake and its basin. Hence, management has been in large, subject to the legal and regulatory frameworks and institutional settings of the littoral countries.

Developmental policies that didn't incorporate principles of sustainability have been implemented in the countries of focus. Political instability, and the long transition period to a market based economy are among the main reasons. Sectoral organization of governments and poorly coordinated institutions which in addition have been at many cases inappropriately-scaled, often with unclear or overlapping competences, coupled with limited human and financial capacities only exacerbated the situation. The legal frameworks and the non integrated management instruments (command and control as well as economic) have been proven weak tools for addressing the relevant challenges. Unsustainable practices followed, in different economic activities i.e. hydropower generation, agriculture, fisheries, tourism, industry, forestry etc. - prevailing in a reality of poor economic conditions and subsequent poor social cohesion - have resulted in numerous pressures in the different shared water bodies. As a consequence impacts have been inevitable both on the natural resources e.g. alterations on the structure of the ecosystems, destruction of habitats and subsequently deterioration of biodiversity etc. and on the economy at local level e.g. from the decline of the commercially valuable fish populations in Lake Ohrid. If the current situation is sustained it may jeopardize the prospect for sustainable development and further deteriorate the quality of life in the region. Overall, management of natural resources has been unsustainable. Nevertheless the countries of focus are under major reform process.

Novel notions are gradually prevailing with regard to the development philosophy i.e. integration of environmental management considerations in accordance with the aim for achieving sustainable development, and EU accession. The plans, strategies and laws being reviewed or developed reflects this trend.

The strategic direction of natural resources and water related sectors policies in the countries of the SEE region is guided mainly by the EU accession prospect - FYR Macedonia is a candidate and Albania and Montenegro are potential candidate countries (the status of Montenegro with regard to the prospect of EU accession is not expected to change after the referendum of 21 May 2006 that signaled the end of the Serbia and Montenegro State Union), and the Stabilization and Association Process (SAP). In this respect the SAP launched (1999) by the European Commission, between the countries of the Western Balkans and the EU Member States is crucial. The three major elements of the SAP include Stabilisation and Association Agreements (SAA)¹⁵ that explicitly include provisions for future EU membership of the country involved, autonomous trade measures and the pillar of providing financial assistance by a single instrument, i.e. the Community Assistance for Reconstruction, Development and Stabilisation (CARDS). The SAA is insofar of interest as it foresees the establishment of bilateral agreements with neighboring countries in the region therefore also covering environmental and transboundary water issues. Furthermore, EU provides assistance in different forms (building up capacities, institutional and finance assistance) in the EU accession process while in return the countries have to undertake steps aiming to meet the political, institutional and economic requirements which have to be fulfilled by all EU candidate countries.

The overall workload to conclude the reforms is enormous. It is a difficult task to meet and need time and resources - both financial and human. Nevertheless, progress has been made, and the framework for the sustainable management of natural resources in the three countries is gradually being set.

Cooperation between the littoral countries for the management of each shared lake basin has been initiated and evolved, at different levels, following different courses which have been subject to given opportunities or even

15 Stabilisation Association Agreements (SAAs) are the contractual basis for relations between each individual country and EU while the European Partnerships identify short and media term priorities. The countries drafted National Programmes to meet these priorities. Until 2006 financial assistance to meet the priorities will be provided through CARDS. The SAA with FYR Macedonia was signed in 12 April 2001. The SAA with Albania was signed in 12 June 2006. Pending the ratification of the SAA, an Interim Agreement was also signed which will allow the trade and trade-related provisions of the Agreement to enter into force as soon as possible. The negotiations between EU and the former Serbia-Montenegro on a SAA started on 10/10/2005 but suspended in May 2006. In late May the Montenegrin people decided the independency of the state. The two countries will now have their own individual course towards EU accession.

coincidences, always in consistence with the local realities. Developments at political and socio-economic scene at national and regional level have influenced the different processes. The involvement of the EU and several UN agencies (e.g. Global Environment Facility, World Bank) as well as other international organizations and NGOs, has contributed to their enhancement.

In Prespa, an important step forward towards integrated management of the basin has been the important work undertaken by NGOs – international, national and local - in cooperation with experts, combined with the declaration of Prespa basin as a protected Transboundary Prespa Park by the Prime-Ministers of the three littoral countries in 2000. The three Ministers of the Environment established the *Prespa Park Coordination Committee* (PPCC) as a non-legal entity. The latter can be seen as a trilateral, multi-stakeholder, interim institutional structure coordinating activities for the management of the lake and its basin. A joint management institutional structure has been envisaged to be established in the future. The existing draft tripartite agreement is expected to be adopted by the three littoral states, establishing the PPCC (or PPMC, Prespa Park Management Committee as it is called in the draft Tripartite Agreement) as a formal trilateral institution under international law.

In the Lake Shkoder a “Memorandum of Understanding for Cooperation in the Field of Environment Protection and Sustainable Development Principle Implementation Between the Ministry of Environment of the Republic of Albania and the Ministry of Environment and Physical Planning of the Republic of Montenegro” was signed on 8 May 2003, committing the countries to conserve the natural resources of the Lake in a coordinated and integrated manner, to improve the relevant regulatory and institutional capacities at national level and to establish a bilateral Lake Management Commission. It also provides for the preparation of a Strategic Action Plan (SAP) for the protection of the Lake Shkoder Ecosystem (recently prepared). There are on-going efforts with regard to the operationalisation of the Commission also within the framework of international initiatives. Transboundary cooperation at local level is already accomplished through the "Lake Forum" established by an on-going international project for the management of shared natural resources implemented with the support of the Swiss government.

The basis for cooperation in Lake Ohrid was set with the signing of the Memorandum of Understanding of

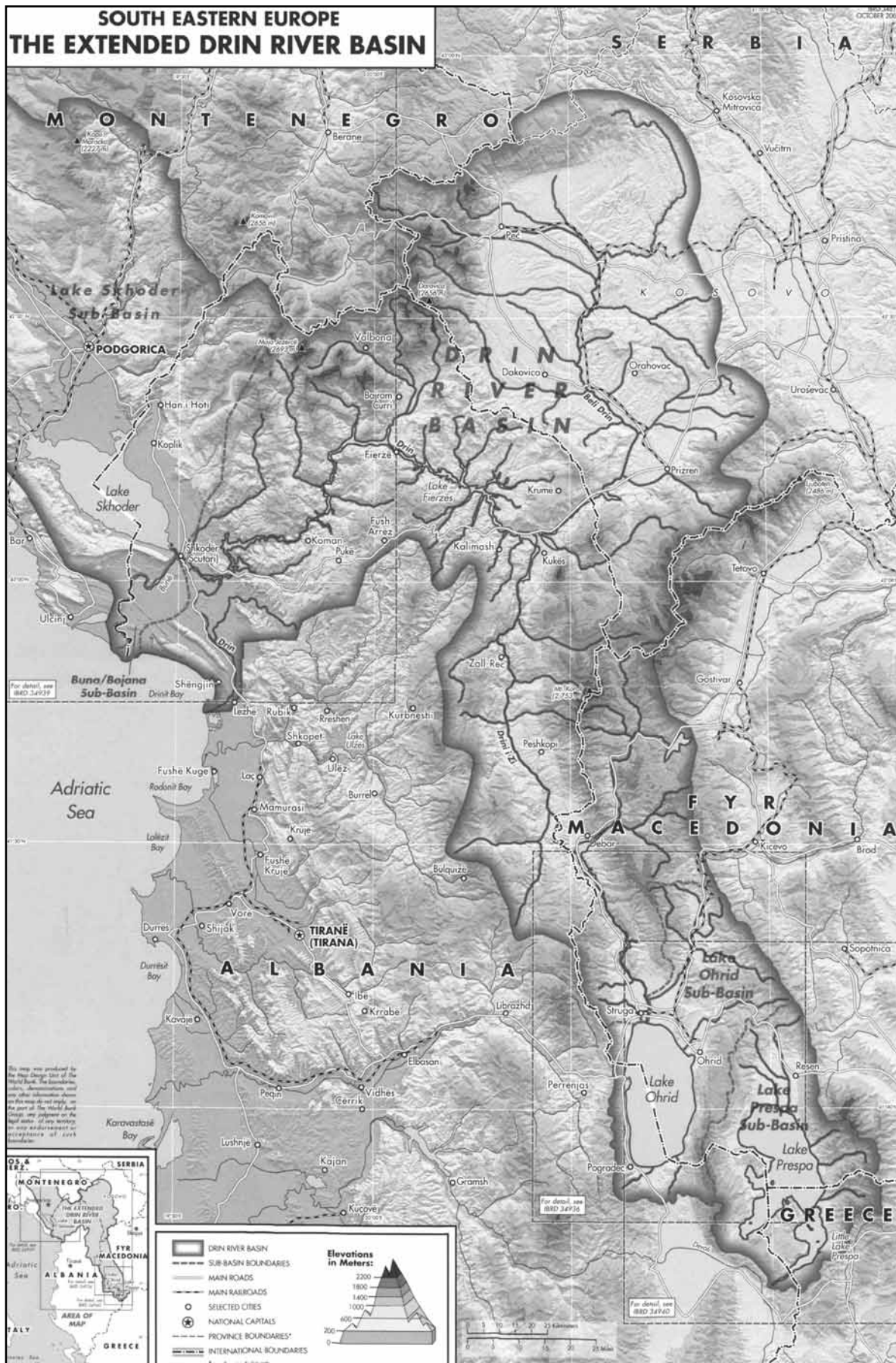
the Lake Ohrid Conservation Project (LOCP) (1998 – 2004) between Albania and FYR Macedonia in 1996. The LOCP implemented with the support of GEF has been catalytic for the cooperation between the littoral countries on the management of this shared water body. Among outcomes that provided the basis for an enhanced and targeted cooperation has been the preparation of the Joint State of Environment Report of Lake Ohrid - an assessment of the ecological conditions of the basin provided the information needed for the next steps to be made for the comprehensive management of the Lake system and its basin - and the development of the “Transboundary Watershed Action Plan”. The latter has provided a long-term vision, defined goals and objectives and set the framework for future work to be done in the lake and its basin. These and other outcomes and the political commitment ever since has led to the signing of the “Agreement for the Protection and Sustainable Development of Lake Ohrid and its Watershed” between the Albania and FYR Macedonia on 17.06.2004 by the Prime Ministers, ratified by the parliaments of the two countries in 2005.

This legal document has set the base for the further enhancement of the cooperation of the two countries at many levels. The Lake Ohrid Watershed Committee (LOWC) has been established with legal authority over the entire Lake Ohrid watershed. It provides a forum for cross-border dialogue and an institutional mechanism for bilateral negotiation and joint decision-making. Building the capacity of the Committee and increasing its credibility in decision making process is a crucial investment to be made in the period to come. Two national committees with broad stakeholder participation will provide input to the LOWC. The Secretariat of the Committee has been established in May 2006 in Ohrid to provide logistic and technical support to the LOWC. One representative from each country has been appointed.

Achieving sustainable management in each shared water body will be a long-term and multi-phase process. The political commitment of the littoral countries in each of the Lakes to cooperate, the establishment and operation of trans-boundary cooperation schemes, the important on-going work in the region implemented also with the participation of local stakeholders and the involvement of international organizations such as GEF and donor countries, leading several regional initiatives e.g. Petersberg Process Phase II / Athens Declaration Process¹⁶, form the base on which the stakeholders of the region can build on.

16 Information available at www.watersee.net

Map 1. The Extended Drin River Basin



Challenge: Proceed with the on-going reform process at national level that will provide the basis for integrated and sustainable management of the lake basins.

Major reform processes guided mainly by the EU accession prospect are underway in most of the countries of focus.

There is a need for:

- More effective approach of legal frameworks with regard to the management of natural resources and furthermore the adoption of the needed regulations that will make the framework laws applicable. Ultimately, frameworks should be harmonized with the EU standards;
- Better design and adoption of a combined nexus of CAC and economic instruments. They should be integrated with the national developmental and economic policies and coupled with efficient monitoring and enforcement mechanisms that would ensure that access to the natural resources is allocated fairly and efficiently among competent uses;
- Establishment of clear and applicable procedures that will ensure public awareness and balanced participation in the decision making;
- Establishment of rational and operational decentralisation that will allow the efficient involvement of local communities, but also enhance the possibility for cross-border cooperation at local level;
- Establishment of appropriately-scaled management institutions with clear - not overlapping competences over natural resources management and continuous improvement of their capacities and coordination;
- Development of mechanisms that will facilitate the sustainable financing of the natural resources management in accordance with the “user” and “polluter pays” principle, in consistency with the socio-economic realities also at local level.

It is obviously a difficult and time consuming process. The difficulties can be more obvious if we consider that developed countries, members of the EU, are still struggling to respond to some of the above mentioned challenges for sustainable natural resources management.

Challenge: Create the conditions for and evolve, where appropriate, cooperation for the integrated management of shared lake basins at transboundary level.

The rather encouraging for the future developments, reveal the existence of two major characteristics which are prerequisites for every cooperation activity in the

field of shared water resources management: *Political will* of the governments and *trust* between littoral countries. They provide a basis for enhanced cooperation and eventually joint management. In order for its realization the littoral countries should work to:

Harmonize rules and regulations for the management of shared lake basins.

The on-going reforms can benefit the cooperation between the countries for the management of the shared water bodies. Directives such as the IPPC¹⁷, WFD¹⁸ are being transposed in the legal frameworks of the countries. Cooperation in the field of management of the shared water bodies is now assisted by the fact that laws are in principle harmonized in their creation. The countries should use the momentum and go a step further designing rules and regulations for the management of the Lake basins in a harmonized way, taking of course into consideration the specific needs and realities in each case.

Involve local stakeholders

There is no “golden rule” in terms of when and the how to involve the local stakeholders in the management of the shared lake basins. It depends among others on the economic activities, socio-economic conditions, traditions, culture, the way that the cooperative process has been initiated and evolved etc. Experiences developed so far in the three lakes can form the basis for future activities. Nevertheless, any new stakeholder involvement scheme created need time to be tested and readjusted in accordance to the evolving challenges and needs. The establishment, at national level, of clear rules and procedures for public participation in the decision making and awareness would greatly assist the overall process in all lakes.

Benefit from the catalytic involvement of the international factor for the enhancement of cooperation on the management of the Lakes and their basins both at national and transboundary level - Establish sustainable institutions for the joint management of the shared Lakes and their Basins

The involvement of the international factor has provided assistance in the building of the framework for the sustainable management of natural resources as well as for cooperation between the littoral countries for the integrated management of the shared Lake basins. With regard to the latter the role of GEF has been critical.

17 Integrated Pollution Prevention and Control, find information at <http://ec.europa.eu/environment/ippc/index.htm>

18 Water Framework Directive, find information at http://ec.europa.eu/environment/water/water-framework/index_en.html

The outcome of the Lake Ohrid Conservation Project provides a fine example. The GEF projects are expected to have a catalytic impact in the case of Prespa and Shkoder as well.

In all three cases the countries should make the best possible use of the concurring initiatives and activities at national and regional levels and move towards integrated lake basin management implementing cost-effective solutions in consistence with the local issues and realities. Even if a joint institution has been established or it is underway or planed in the future, the governments should assist its viability and moreover assist towards the development of its capacity to perform as a self sustained regional organization responsible for the management of the shared water body.

Moving forward to the advancing of the role and capacity of joint institutions and transforming them into well-programmed regional institutions which will become "funding destinations" attracting funds and even overcome occasional absence of regional funding programs is a next step. The establishment of regional funding mechanisms and introduction of innovative financing tools and strategies (e.g. Inter-riparian financing, Trust funds, Levying Taxes etc) or generation of substantial new income from the stimulation of activities such as ecotourism and quality production directly linked with the new water management schemes, as an alternative to grant, loan and aid – based financing is also essential.

Challenge: Establish a dialogue framework for balancing the competing demands for water in Lake Prespa, Ohrid, Shkoder and River Drin Basins.

The interdependences between the different water bodies of the hydrological system of the South Western Balkan Peninsula are obvious. Nevertheless, there are only weak connections between managers of the different water bodies.

The basin countries could proceed with a coordinated dialogue, involving also the stakeholders of the Prespa, Ohrid, Drin and Shkoder basins eventually establishing a common long term vision for the management of water resources in the greater region including the coastal zone. The joint Petersberg Process Phase II / Athens Declaration Process could assist the Lake Ohrid Management Committee and the Prespa Park Coordination Committee to initiate such a dialogue and facilitate the transfer of experience and knowledge from areas such as the Rhine and Danube River, and Lake Constance Basins. The – under consideration by GEF – project for the Drin River Basin would catalyse developments leading the process beyond just a dialogue.

Ultimately, reaching to a point in the future where we could move the scale of management from single water bodies, to the hydrological interconnected system of the South Western Balkan Peninsula, would eventually lead from the sharing of water between countries and conflicting uses, to the sharing of benefits between stakeholders in an area that is physically, culturally and historically interconnected.

Dimitris Faloutsos
GWP-Med

*Info regarding transboundary water resources management in South-eastern Europe available at www.watersee.net
Assessment of Shared Lake Basins Management in South-eastern Europe available at <http://www.watersee.net/forum/files/ATT00372.pdf>*

POSITION PAPER OF EURO-MED NETWORKS OF ENVIRONMENTAL NGOS
at the
CIVIL SOCIETY DIALOGUE ON THE SUSTAINABILITY IMPACT ASSESSMENT OF THE EURO-MEDITERRANEAN FREE TRADE AREA
Brussels, March 20 2006

INTRODUCTION

The European Environmental Bureau, Friends of the Earth MedNet, the Mediterranean Information Office for Environment, Culture and Sustainable Development and WWF Mediterranean Programme, representing several hundred environmental NGOs from the EU and non-EU Mediterranean countries welcomes the SIA-EMFTA process, in which it has been an active

participant. One of our members, Friends of the Earth Middle East, serves on the SIA's advisory committee, and we NGOs attended and made a statement to the first consultation hosted by the European Commission on 24 November 2004. *The statement has been posted on the SIA-EMFTA project website.*

In October 2005, a civil society consultation on the Phase II report of the SIA EMFTA was organised in Malaga,

Spain by Friends of the Earth MedNet (the Mediterranean members of Friends of the Earth Europe) and addressed by Dr. George and Ms. Chouchani from the SIA team. *The report of this consultation is also posted on the SIA EMFTA website.*

BRIEFLY RECALLING OUR VIEWS ON PHASES I AND II

Phase I

Our 2004 statement said *inter alia* that :i) Euromed. Association Agreements as they stand lack details on environmental and social rights issues; ii) the EMFTA should include a regional side agreement on environmental and social issues, beginning with an agreed framework document which should be negotiated and adopted by Euro-Mediterranean Partners during 2005 iii) environmental management regimes are weak in many of the partner countries; action to strengthen them should be taken now, without waiting for the results of the SIA.

Phase II

Many of the 42 recommendations from one or more NGO and parliamentary participants recorded in the Malaga consultation report have been tabulated in the SIA EMFTA Phase II Final Report. *The full session report is posted on the SIA-EMFTA project website*

We would however wish to particularly re-emphasise the following key points:

- The meagre net economic welfare benefits forecast, compared to possible high social, economic and environmental costs to South Mediterranean Partner countries (SMPs), requiring extensive mitigation and remedial measures and involving considerable outlays of public revenues, raised a basic question: was the EMFTA exercise worth the effort, and should alternative approaches to development of SMPs be considered?
- The most likely scenario would be that liberalisation would occur without any mitigation measures in the South. The resulting situation under this scenario should be forecast and analysed as part of the SIA.
- The experience of the North American Free Trade Area and its impacts on Mexico, in particular in rural areas and the related loss of rural livelihoods of millions of small farmers, should be carefully evaluated for lessons on possible impacts of the EMFTA.
- The critically important issue of migratory flows in the Mediterranean was not mentioned in the SIA, nor possible impacts of trade liberalisation on them.
- Possible positive environmental impacts were exaggerated while the consequences of destruction of irreplaceable environmental services was not ade-

quately addressed. An overall assessment of environmental impact has not emerged from the SIA so far.

Phase III

We view this phase within the context of the commitments made by all EuroMed partners at the UN Summit on the Millennium Development Goals MDGs in September 2005, as well as within the Mediterranean Strategy for Sustainable Development (MSSD) – adopted by the Contracting Parties to the Barcelona Convention last November, and subsequently endorsed by the Euromed summit in Barcelona, where heads of state or government committed under the 5-year action programme to ‘implement’ the MSSD. (*posted at www.unepmap.org*)

Our central concern is that trade liberalisation in the region should contribute positively to and not undermine the implementation of both the MDGs and MSSD.

We welcome the contractor’s proposed list of topics for Phase III, but wish to advocate the addition of the following issues:

- the impact of agricultural trade liberalisation on non-farm rural employment/livelihoods and related gender and migration impacts as well as on implementation of the World Food Summit commitments for attaining greater food and nutritional security.
- the impact of services liberalisation on employment/income levels as well as access by low-income groups to basic public services (water, health, etc) in the sectors contemplated by the decisions of the forthcoming Euromed Trade ministers’ conference in Marrakech (24 March)
- possible impacts on national energy balances, air/ground/water pollution and coastal areas

We strongly advocate a close interface and cross-referencing between the conclusions/recommendations emerging from Phase III and the goals of the Mediterranean Strategy for Sustainable Development, which include the fulfillment of the MDGs.

IMPLEMENTATION OF SIA-EMFTA RECOMMENDATIONS

We are greatly concerned at the lack of clarity as to how, or indeed whether the SIA EMFTA recommendations will be implemented within the on-going process of trade liberalisation within the Euro Mediterranean Partnership.

We are deeply disappointed at the absence of any reference to the SIA EMFTA either by the Barcelona VII conference of foreign ministers last May, or the Euromed

summit in Barcelona last November. We note that a presentation made at a CIHEAM conference in Cairo on 8 March 2006 on the Euro-Mediterranean Roadmap for Agriculture, by Mr. Alexandre Asbil of DG Agriculture, makes no mention of it either, whilst announcing the roadmap's 'entry into force' in 2007.

- We formally demand that steps are taken to ensure the comprehensive consultation of affected stakeholders as well as of the Euro-Mediterranean Parliamentary Assembly in the roadmap design processes leading to this 'entry into force'

We are further alarmed at the report containing comments from Lawrence Pratt (posted on the DG Trade website) that DG Trade officials indicated that little or no account would be taken of any SIA recommendations for any of the EU regional trade liberalisation processes underway, and that no particular adjustments can be foreseen in current development assistance procedures, programmes or projects so as to incorporate such recommendations.

- A clear commitment from the European Commission, the EU and Partner states to fully incorporate the SIA EMFTA recommendations has now become an urgent necessity in all future trade negotiations, the operation of Association Agreements and the design, implementation and review of European Neighbourhood Policy Action Plans. In addition, full stakeholder and parliamentary involvement in these processes is long overdue, and should be instituted now.

In this spirit, the Euro Mediterranean networks of environmental NGOs has addressed a formal letter to the trade ministers of the Euro Mediterranean partner countries, on the eve of the Ministerial meeting in Marrakech this Friday, 24 March. The meeting is due to launch negotiations for the liberalisation of trade in agriculture and services. **We have called for a moratorium on such negotiations until the final SIA EMFTA recommendations become available at the end of 2006 and procedures are adopted for their implementation.** *The text of our letter is annexed.*

SOCIO-POLITICAL ASPECTS OF TRADE LIBERALISATION IMPACTS IN THE MEDITERRANEAN REGION

It is hardly a secret that trade liberalisation favours the strongest partner most, and the NAFTA experience has shown the hazards of free trade between countries of vastly unequal levels of development and income.

As stated in the Carnegie Endowment's "NAFTA: Promise and Reality: Lessons from Mexico for the Hemisphere" (2003). *NAFTA has accelerated Mexico's transition to a liberalized economy without creating the necessary conditions for the public and private sectors to respond to the economic, social, and environmental shocks of trading with two of the biggest economies in the world. Mexico's most vulnerable citizens have faced a maelstrom of change beyond their capacity, or that of their government, to control.*

In view of the political volatility in so much of the South Mediterranean region, the large number of people living on less than \$2 a day (at least 100 million) as well as high levels of unemployment, in particular amongst youth, the undersigned Euro Mediterranean networks of environmental NGOs consider that such a 'maelstrom' involving the region's poorest and most vulnerable citizens must be avoided at all costs.

A critical reconsideration of the 2010 target date for the establishing EMFTA as well as its sector coverage and the timing of liberalization schedules, - which must be flanked by comprehensive, securely financed and carefully designed accompanying and mitigation measures - is surely a small price to pay in order to achieve greater, not less social and political stability in the region.

OUR SUPPORT FOR THE NGO POSITION ON SIAs CONTRACTED BY THE EC

The undersigned Euro Mediterranean networks of environmental NGOs takes this opportunity to express our support for the following two NGO documents:

1. Letter from EU NGOs to Commissioner Mandelson re: Re: European NGO demands: the future of the Sustainability Impacts Assessment (SIA) process 29 June 2005
2. NGOs statement on the draft Handbook for Sustainability Impact Assessments April 2005

Signed by

- ✉ The European Environmental Bureau
- ✉ Friends of the Earth MedNet
- ✉ The Mediterranean Information Office for Environment, Culture and Sustainable Development (MIO-ECSDE)
- ✉ WWF Mediterranean Programme

END ACTS OF VIOLENCE AND DESTRUCTION IN THE MIDDLE EAST!

The Executive Board of the Mediterranean Information Office for Environment Culture and Sustainable Development MIO-ECSDE¹⁹, convened on the occasion of its 37th regular meeting in Athens on 16th and 17th July 2006, having examined carefully the recent regrettable developments and situation in the Middle East:

- **Expresses its anxiety and deep concern** for the destruction which is taking place in Lebanon and Palestine and **demonstrates its sympathy** to the victims and **all** those suffering from the armed conflict in the region.
- The work of MIO-ECSDE and its member organizations for the protection of the environment and promotion of sustainable development of the Mediterranean region cannot be fulfilled under the present circumstances since **peace is the prerequisite** for the effective preservation and development of the natural and cultural heritage of our region. **Re-**

spect of biodiversity and cultural diversity and the integrity of the environment, including the man made one, is necessary for the establishment of mutual understanding and peace in this vulnerable region.

- **The MIO-ECSDE Executive Board URGES** all governments of the region, as well as the UN, the European Union and all relevant international and regional organizations **to make every possible effort to immediately put an end to all acts of violence and destruction affecting human lives, the environment and the social texture of the target areas.**
- Furthermore the **MIO-ECSDE Executive Board requests immediate concerted international action to remedy and restore the affected areas** as soon as possible so that the necessary peace is established in the region for the benefit of the people and the restoration of the economy and the safety of the natural and cultural environment.



METTEZ FIN AUX ACTES DE VIOLENCE ET DE DESTRUCTION AU MOYEN ORIENT!

Le Conseil d'Administration du Bureau Méditerranéen pour l'Environnement, la Culture et le Développement Durable (MIO-ECSDE²⁰), réuni à Athènes les 16 et 17 juillet 2006 pour la 37^{ème} rencontre statutaire, a examiné attentivement l'évolution regrettable récente de la situation au Moyen Orient.

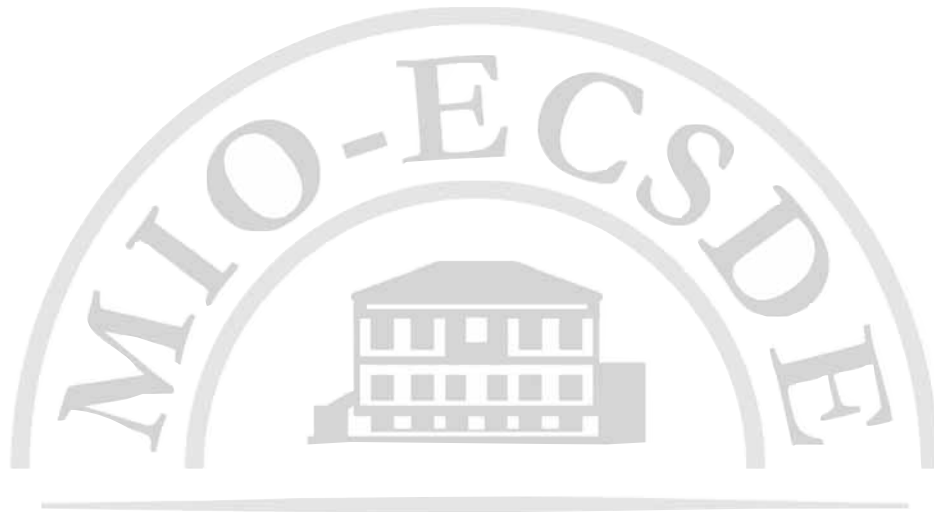
- **Il exprime sa très grande inquiétude et ses craintes** au sujet des destructions qui ont lieu au Liban et en Palestine. **Il exprime toute sa sympathie** aux victimes et à **tous** ceux qui souffrent du conflit armé dans la région.
- Le travail de MIO-ECSDE et de ses membres en faveur de la protection de l'environnement et la promotion du développement durable dans la Région Méditerranée ne peut pas être accompli dans les conditions actuelles dans la mesure où **la paix est une condition sine qua non** pour la préservation efficace et le développement du patrimoine naturel et culturel de notre région. **Le respect** de la biodiversité et des diverses cultures, ainsi que l'intégrité de l'environnement, y compris celui produit par

l'homme, est nécessaire pour le développement de la compréhension mutuelle et la paix dans cette région vulnérable.

- Le Conseil d'Administration de MIO-ECSDE exhorte tous les gouvernements de la région, ainsi que les Nations Unies, l'Union Européenne et toutes les organisations régionales et internationales concernées **à déployer tous les efforts possibles pour mettre fin immédiatement à tous les actes de violence et de destruction qui affectent des vies humaines, l'environnement et le tissu social de la région en question.**
- De plus, **le Conseil d'administration de MIO-ECSDE demande avec insistance une action internationale concertée immédiatement afin de remédier et restaurer la région affectée** dès que possible pour que la paix nécessaire revienne dans la région, dans l'intérêt des populations, le rétablissement de leur économie, ainsi que la sécurité de son environnement naturel et culturel.

19 MIO-ECSDE is the Federation of more than 100 Mediterranean Non-Governmental Organisations and Networks for Environment and Development from the 24 countries of the regions, with a collective membership of approximately 13 million of citizens (www.mio-ecsde.org).

20 MIO-ECSDE est la Fédération de plus du cent organisations non gouvernementales et des réseaux pour l'environnement et le développement appartenant à vingt quatre pays de la région, ce qui représente environ 13 millions de citoyens (www.mio-ecsde.org).



MIO-ECSDE Profile

The Mediterranean Information Office for Environment, Culture and Sustainable Development, is a Federation of Mediterranean Non-Governmental Organizations (NGOs) for the Environment and Development. MIO-ECSDE acts as a technical and political platform for the intervention of NGOs in the Mediterranean scene. In cooperation with Governments, International Organizations and other socio-economic partners, MIO-ECSDE plays an active role for the protection of the environment and the sustainable development of the Mediterranean Region.

Background

MIO-ECSDE became a federation of Mediterranean NGOs in March 1996. Its roots go back to the early 80s, when the expanding Mediterranean membership of the European Community encouraged the European Environmental Bureau (EEB) to form its Mediterranean Committee supported by Elliniki Etairia (The Hellenic Society for the Protection of the Environment and the Cultural Heritage). The Mediterranean Information Office (MIO) was established in 1990 as a network of NGOs, under a joint project of EEB and Elliniki Etairia and in close collaboration with the Arab Network of Environment and Development (RAED). The continuous expansion of MIO-ECSDE's Mediterranean NGO network and the increasing request for their representation in Mediterranean and International Fora, led to the transformation of MIO-ECSDE to its current NGO Federation status. Today it has a membership of 102 NGOs from 24 countries.

Our Mission

Our mission is to protect the Natural Environment (flora and fauna, biotopes, forests, coasts, natural resources, climate) and the Cultural Heritage (archaeological monuments, and traditional settlements, cities, etc.) of the Mediterranean Region. The ultimate goal of MIO-ECSDE is to promote Sustainable Development in a peaceful Mediterranean.

Major tools and methods

Major tools and methods used by MIO-ECSDE in order to achieve its objectives are the following:

- Promotion of the understanding and collaboration among the people of the Mediterranean, especially through their NGOs, between NGOs and Governments, Parliaments, Local Authorities, International Organizations and socio-economic actors of the Mediterranean Region.
- Assistance for the establishment, strengthening, co-operation and co-ordination of Mediterranean NGOs and facilitation of their efforts by ensuring the flow of information among relevant bodies.
- Promotion of education, research and study on Mediterranean issues, by facilitating collaboration between NGOs and Scientific and Academic Institutions.
- Raising of public awareness on crucial Mediterranean environmental issues, through campaigns, publications, exhibitions, public presentations, etc.

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