

GREECE

CONCLUSIONS AND RECOMMENDATIONS (see next page)

OUTLINE OF THE REPORT

1. THE CONTEXT

**Part I
POLLUTION CONTROL AND NATURE CONSERVATION**

2. WATER MANAGEMENT

3. AIR MANAGEMENT

4. BIODIVERSITY AND NATURE CONSERVATION

**Part II
INTEGRATION OF POLICIES**

5. ENVIRONMENTAL AND ECONOMIC POLICIES

6. SECTORAL INTEGRATION: COASTAL AND URBAN MANAGEMENT

7. SECTORAL INTEGRATION: TOURISM

**Part III
CO-OPERATION WITH THE INTERNATIONAL COMMUNITY**

7. INTERNATIONAL CO-OPERATION

ANNEXES

CONCLUSIONS AND RECOMMENDATIONS*

Since 1990, Greece has been undergoing major economic reforms, accelerated in recent years, and geared towards participating in the European Monetary Union. GDP has grown by over 3% a year since 1996, bringing its per capita level to 70% of the OECD Europe average. Strict fiscal and monetary policies have led to declines in inflation and the budget deficit. This economic development has benefited from overall good environmental conditions and significant natural resources (e.g. supporting tourism, agriculture, fisheries) and has contributed to pressures on the environment (e.g. from industry, energy, transport, urbanisation).

Greece's major efforts towards economic convergence have been only partially matched by "environmental convergence" efforts aimed at improving the quality of life in larger cities, maintaining environmental quality in tourist areas and building modern environmental infrastructure financed by national and EU funding. As a result, Greece continues to face many environmental challenges: controlling air emissions from transport and from large power and industrial plants, reconciling water resource supply and demand, reducing effluents to water from municipal and agricultural sources, improving waste prevention and elimination, protecting land and coastal resources, and conserving biodiversity and terrestrial and marine ecosystems. Prospects of economic growth and rising income levels will generate both increased pressure on the environment and greater demand for environmental quality. This makes it all the more necessary for Greece to: i) strengthen the effectiveness and cost-effectiveness of environmental policies; ii) better integrate environmental concerns in economic decisions; and iii) continue its international co-operation.

This OECD report establishes a baseline for assessing future environmental progress and examines Greece's environmental performance, i.e. the extent to which its domestic objectives and international commitments are being met, based on environmental effectiveness and economic efficiency criteria. A number of recommendations are put forward that could contribute to strengthening the country's environmental performance.

1. Implementing Environmental Policies

Greece generally has good environmental quality. In some important areas where environmental quality was impaired, the situation has improved in recent years (air quality in Athens, restoration of architectural and historical heritage). In others (e.g. bathing water quality) deterioration has been prevented. Yet, several standard OECD indicators show that Greece has high pollution intensity: emissions of CO₂, SO_x and NO_x per unit of GDP are among the highest in OECD Europe and the level of waste water treatment is among the lowest.

Greece should soon begin to see further environmental progress as a result of management and financial efforts made since the mid-1990s. Its environmental policy has been modernised and driven by EU environmental legislation, a search for improved quality of life in the larger cities (Athens, Thessaloniki) and, to some extent, the advantages of a positive environmental image internationally (e.g. for tourism). Nevertheless, the remaining environmental progress to be made, along with economic growth prospects and the likely increase in environmental demands as income grows, necessitate environmental reform. This reform has already begun, for instance with interministerial co-operation producing progress in areas such as energy issues; with devolution of environmental responsibilities to prefectural and municipal authorities as a result of recent institutional reform; and with increased involvement of other actors (e.g. industry, environmental NGOs and local stakeholders) in environmental progress.

Strengthening the effectiveness and cost-effectiveness of environmental policies

Concerning environmental legislation and regulations, much progress has been made. However, some implementing decrees and ministerial decisions still need to be put in place, and EU directives have not always been fully integrated in the relevant national laws. Given that many of the main environmental laws date from the 1970s and 1980s, there is a case for gradually streamlining and updating environmental legislation, at the same time allowing a greater role for newer policy tools, such as economic and social instruments.

Lack of enforcement has been the Achilles' heel of policy implementation, weakening the effectiveness of environmental regulations and permitting. This situation can be expected to improve once the proposed

* Conclusions and Recommendations approved by the Working Party on Environmental Performance at its November 1999 meeting.

environmental inspectorate, with its dedicated body of inspectors, is up and running; the new system will need to operate transparently, with regular reporting to the regulated community and the public about information, inspections, warnings, sanctions and other actions of the inspectorate. Environmental impact assessment (EIA), which in Greece is associated with environmental permitting, has proved a useful instrument in a number of areas, and its quality and effectiveness have improved in recent years. The very positive results of surveillance and enforcement concerning marine pollution are also encouraging.

Investment in environmental infrastructure has been a major feature of Greek environmental policy since the mid-1990s. Six year action programmes (Operational Environment Programme, environmental programmes under the Cohesion Fund, environmental actions carried out in the framework of the Regional Operational Programmes, or the Sectoral Operational Programmes) are the centrepieces of environmental progress. They address major environmental problems and facilitate the financing of much new environmental infrastructure. Overall pollution abatement and control (PAC) expenditure now equals around 1% of GDP, much of it focused on waste- and water-related investment and supported by the EU Structural and Cohesion Funds. Care should be taken to follow up these financial injections with everyday environmental management capacities, and to prepare for the time when EU funding decreases.

Limited use has been made of economic instruments; some have been effective, such as the package of measures to renew Athens's car fleet and the use of marine pollution fines, collected in a special fund (Blue Fund), which are used for pollution abatement. There are also user charges, like the special levy imposed on vehicle fuel, aimed at raising revenue (Green Fund). Although water charges in the Athens area provide incentives for environmentally friendly behaviour by consumers, tariff structures often do not. Water and energy prices are still far from being based on full internalisation of social costs. The government has long used various subsidies to achieve environmental objectives (e.g. installation of end-of-pipe devices and cleaner technology, energy conservation), but not accompanied by pollution or user charges. Not enough attention has been paid to economic analysis and the cost-effectiveness of policies.

Although efforts have been made to raise public awareness of environmental issues, lack of familiarity with the concept of sustainable development still constitutes a handicap for policy implementation. The government, industry associations and environmental NGOs have made sizable efforts at environmental education and public awareness raising; these need to be continued, fostering better environmental information and a broader understanding of the polluter pays and user pays principles. Periodic reporting on the state of the environment, tracking of environmental progress and performance through environmental indicators, and a pollutant release and transfer register (PRTR) should all be established. The administration could also do more to organise early consultation with stakeholders when developing new policies, plans and strategies.

It is therefore recommended to:

- continue to gradually streamline, complement and update environmental legislation;
- urgently improve enforcement of environmental and land use regulations, carrying out the plans to create a dedicated environmental inspectorate and ensuring transparency vis-à-vis the regulated community and the public, through regular reporting about actions such as information, inspections, warnings and sanctions;
- strengthen environmental administrative and managerial capacity at national, regional, prefectural and municipal levels, with focus on making more use of economic analysis and a partnership management approach to improve the cost-effectiveness of environmental policies;
- move towards full application of the polluter pays and user pays principles, reviewing water and energy prices and making fuller use of economic instruments;
- continue to encourage public participation through i) co-operation with NGOs in carrying out and financing environmental education for schools and professional groups, and ii) consultation with stakeholders in the development of new government policies and action plans;
- strengthen the role of industry associations in raising environmental awareness, expertise and management standards, particularly at small and medium-sized enterprises;
- ensure the publication of comprehensive environmental information (e.g. periodic state of the environment reports, environmental indicators, PRTR).

Water

While Greece is generously endowed with water resources, their uneven distribution makes the management of their sustainable use a complex task. Pressure on water quantity mainly results from increasing use for irrigation and, to a lesser extent, by households. The quality of inland surface waters is very satisfactory, with some exceptions (e.g. eutrophication of shallow lakes); the quality of coastal waters is also very good, though some black spots exist, mainly near large urban centres. The main pollution sources are household waste water and agricultural pollution (e.g. from excessive use of fertilisers).

Measures have been taken to limit household water consumption. In particular, legal limits have been established for water supply in urban areas, and water prices have been sharply increased for high consumption levels. In rural areas, the transfer of collective irrigation networks to user associations is a step towards more sustainable use of water by farmers. Implementation of EU legislation, and EU funding, have been decisive in the ongoing rapid development of municipal waste water infrastructure (though operational effectiveness and the extent of coverage still need improvement). Waste water treatment plants have been established in industrial areas. Protection zones have been designated to restrict agricultural pollution around vulnerable drinking water sources.

However, water resource management has mainly been in the hands of central authorities and has primarily focused on granting concessions for water withdrawal and use. The decentralisation and devolution process is helping create the conditions for a move towards an integrated, partnership approach to water resource management at water basin level, the principles of which are part of the 1987 Water Management Law (e.g. establishment of Regional Water Committees). Before major new water projects are undertaken, economic analysis and EIA should be used to ensure that economic, environmental, hydrological and social objectives are sufficiently considered. In rural areas, many collective irrigation systems need to be modernised and rehabilitated, and much greater efforts should be made towards cost recovery of irrigation water supply in line with pertinent EU legislation (e.g. EU draft framework directive on water management). In urban areas, the operation and maintenance of new waste water infrastructure will require additional human and financial resources; training of skilled personnel to operate treatment plants should be given high priority. Tariffs for water services should be increased (with appropriate attention to income disparities) to cover, ultimately, the costs of related investment, maintenance and operating expenditure. Introducing a pollution charge based on pollutant load and toxicity would provide incentives for industry to adopt production processes that minimise effluents. A sustainable financing regime should be elaborated, aiming at national funding and full cost recovery in the medium term.

It is therefore recommended to:

- develop an overall water resource management strategy by water basin, addressing both quantity and quality issues; establish basin councils to reinforce co-operation and partnership among all relevant authorities and water users;
- improve enforcement of water legislation through strengthened field inspectorates;
- raise tariffs for water services to better cover their costs, with appropriate attention given to income disparities;
- continue to develop sewerage networks, waste water treatment capacity and connection of the population to these services; train skilled personnel to operate municipal and industrial waste water treatment plants;
- continue the transfer to users of irrigation facilities, and establish mechanisms to strengthen cost recovery;
- pursue efforts aimed at protecting zones around vulnerable aquifers;
- pursue efforts to monitor surface water quality and strengthen and extend monitoring of groundwater quality;
- make full use of EIA procedures and cost-benefit analysis before major new water projects are undertaken.

Air

Over the past ten years, urban air quality has greatly improved in Athens, where ambient levels of SO₂, NO₂, CO and lead now generally respect air quality limits. This is the result of a range of measures implemented with determination: restriction and relocation of industrial activities, restriction of road traffic (alternate licence plate system), extensive pedestrian areas, promotion of public transport (first subway line, bus fleet improvements) and fuel quality improvement for industry and households. The construction of two additional subway lines and the relocation of the airport will further strengthen this success. Nationwide, since the mid-1990s, measures have been launched to improve energy efficiency in power generation and industry. Although energy intensity now equals the OECD

Europe average, it shows one of the most rapidly increasing trends among OECD countries. Energy reform generally integrates air quality management concerns effectively, and the resulting environmental benefits should gradually become evident. In particular, the supply of natural gas to power generation is increasing and its use by industry and households is expected. Use of renewable energy sources is also progressing. Flue gas desulphurisation equipment has been installed at two refineries and at the largest unit of the Megalopolis lignite-fired power plant. Major improvements to public transport are under way in Athens and Thessaloniki. A programme in the early 1990s resulted in the scrapping of many old cars.

However, the intensity of air pollution emissions is very high, overall; emissions of SO_x , NO_x and CO_2 per unit of GDP exceed the OECD Europe averages by 100%, 42% and 38%, respectively. SO_x emissions from large combustion plants somewhat exceed the ceiling established by EU directive. The use of lignite to produce most of the nation's electricity plays a major role in emissions of particulate matter and SO_x , and no decoupling of SO_x emissions from GDP growth has yet been achieved. Rapidly increasing NMVOC emissions signal the need to control emissions from refineries and two-stroke engines, and to deal with urban ozone formation. Investments are still needed to bring down emissions. Systems for ambient air quality monitoring and emission inventorying are insufficient. Economic instruments should be better used to integrate air quality objectives into the energy and transport sectors. Overall, the investment effort on air pollution abatement and control has been low (less than 1% of GDP) and needs to be enhanced.

It is therefore recommended to:

- implement with determination energy conservation programmes, and stimulate the uptake of more energy efficient technologies by power plants and industries;
- continue to encourage rapid growth in the use of natural gas (e.g. for power supply and household appliances) and renewables (e.g. in the islands);
- continue to promote the use of cleaner fuels (e.g. as regards sulphur content and lead content) by industry and households;
- strengthen efforts to reduce SO_x emissions (e.g. from lignite-fired power plants), NMVOC emissions (e.g. from refineries) and NO_x emissions (e.g. from transport);
- improve enforcement of air-related regulations through strengthened field inspectorates;
- pursue the development of a national emission inventory and expand the ambient air monitoring network, harmonising measurement methods between stations and expanding the list of pollutants monitored (e.g. PM_{10} and/or $\text{PM}_{2.5}$, PAHs, heavy metals);
- further develop and introduce measures aimed at replacing highly polluting road vehicles;
- further develop the use of economic instruments to integrate air management objectives into energy and transport policies and practices.

Nature

Greece is endowed with a very high diversity of species and habitats. Nature conservation has long been legislated: the first national park was created in 1938. A range of protected areas has been established: national parks, aesthetic forests, natural monuments, game reserves, etc. Efforts have been made in recent years to protect marine ecosystems and coastal areas by creating nature reserves and marine parks. Measures have been taken to improve the institutional arrangements for the operation and management of protected areas. Measures to protect species include access restrictions, limited user rights, compensation for loss of income, purchase of land, and information and awareness campaigns. Despite chronic forest fires, the forest area has increased by one-third since the 1970s due to reforestation and natural regeneration. Nature conservation NGOs have organised public awareness and information campaigns. Greece has ratified most international agreements on biodiversity and nature conservation.

However, the total area under protection is small. Although some management plans are under preparation, management of protected areas should be more developed, partnership-based and effective; very few aesthetic forests and natural monuments are actually protected, and management plans for national parks should be prepared. Concerning the conservation of species, information has been insufficient to make the public aware of which plants and animals are protected. A more systematic assessment of the impact of urban, housing and tourism development on coastal and island natural ecosystems, both within and outside protected areas, should be undertaken as a matter of priority. The conservation of strips of virgin coastline, particularly those harbouring special ecosystems, should be considered as an integral element of coastal management, and appropriate funding made available. Enforcement of national legislation is often too slow or lacking, and inspection and prosecution are impeded by lack of staff. Setting up of an institutional co-ordination mechanism between the Ministry of Environment, Physical

Planning and Public Works and the other ministries, agencies and environmental NGOs involved in nature conservation would greatly facilitate planning and implementation, as well as enforcement.

It is therefore recommended to:

- speed up the process of putting in place a National Biodiversity Conservation Strategy and Action Plan, thereby providing a coherent framework for nature conservation and for the identification of ecosystems, species, landscapes and landscape features that should receive special management and protection;
- increase the total surface of protected area, including marine ecosystems and coastal areas, and ensure that they are effectively protected, particularly through management plans;
- establish a national ecological network, including existing protected areas and Natura 2000 sites;
- strengthen co-operation and partnership among ministries and agencies responsible for nature conservation at the planning and implementation stages; strengthen the administrative capacity of the central, regional and local authorities to implement conservation programmes;
- increase public awareness and reinforce information and education programmes on nature conservation problems;
- prepare a comprehensive assessment of the impact of urban, housing and tourism development on coastal and island natural ecosystems, and implement measures to protect species and habitats in these areas.

2. Towards Sustainable Development

Economic forces and changes in such major sectors as industry, energy, agriculture, transport and tourism strongly influence environmental conditions and trends, and hence either enhance or diminish the benefits of environmental policies and technological progress. Further integration of environmental concerns in economic, sectoral and social policies is needed to achieve cost-effective environmental protection and sustainable development in a rapidly growing country like Greece.

Integrating environmental concerns in economic decisions

Progress to date on the integration of environmental concerns into economic policies has been uneven. The Council of State (High Court) has played a positive role in defining the content of framework environmental legislation and providing a practical interpretation of the term sustainable development in case law. Good integration of decisions has taken place in the energy sector, and satisfactory integration in areas under the responsibility of the Ministry of Environment, Physical Planning and Public Works (e.g. physical planning and housing policy), but in other sectors integration efforts have remained ad hoc. The practice of EIA has contributed to integration, but has worked better in some areas than in others: in tourism, aquaculture, road, and other major infrastructure projects the influence has been noticeable, but less so in the licensing of quarries.

The degree of horizontal co-ordination and institutional integration taking place among government departments could be significantly improved. The relatively large number of government agencies with environmental responsibilities, the dearth of formal integration mechanisms and the strong hierarchical nature of Greek public administration make it difficult to formulate and implement integrated environmental policies. A special effort should be made to develop a culture of joint problem solving. The degree of subsidiisation of sectors (e.g. energy, transport) should be reviewed in order to assess the potential for progress in both economic and environmental effectiveness (i.e. “win-win” potential) and the potential for enhanced domestic financing and pricing of related services.

The dominant influence of EU directives and EU funding on Greek environmental policy seems to have pushed national objectives to the background to some extent. To extract the greatest benefit from the operational programmes for the next period, and to move Greek environmental policy from remediation and investment to prevention and management, these programmes need to be put at the service of a strategic perspective. A comprehensive national strategic plan for the environment, based on a wide ranging consultation process and setting specific objectives and targets, would help achieve this and also give substance to Greece’s ambition to build on its natural and historical heritage.

The decentralisation and devolution of government now under way has yet to deliver adequate local institutional capacity in the environmental field, or to clarify responsibilities. The mechanism of local Agenda 21s should be further promoted as a tool for integration. The extension of the partnership approach to environmental management is desirable, in line with decentralisation and devolution, and with existing legislation. For instance, the management of river basins, protected areas and local (urban or coastal) Agenda 21 development activities could benefit from involving a range of stakeholders.

Greek public and private PAC expenditure was stepped up in the mid-1990s and now is of the order of 1% of GDP. Overall environmental expenditure, which also includes water supply and nature protection, is estimated at 1.3% of GDP. These figures are similar to those of other “cohesion countries”, but are significantly lower than in a number of OECD countries. As much of the present expenditure is financed with temporary EU assistance, sooner or later measures will have to be taken to develop a sustainable financing regime based on national funding. This could be achieved, for instance, by privatising municipal water and waste services, taking into account social disparities.

It is therefore recommended to:

- develop further the integration of environmental concerns into policies and practices concerning specific sectors (e.g. industry, transport, agriculture, tourism), aiming, *inter alia*, for a decoupling of environmental pressures from economic growth;
- seek to build transport and energy infrastructure further, relying both on external financing and on enhanced domestic means by progressively raising of prices of related services so as to cover a larger proportion of the costs, more in line with the user pays principle;
- continue to improve the integrative role of EIA, including by encouraging greater and better-informed public participation;
- make effective use of the proposed National Co-ordination Mechanism for Sustainable Development and encourage local government to adopt and implement local Agenda 21 plans;
- strengthen the capacity of prefectures and local governments to carry out their new environmental functions, making more use of partnership in management;
- continue to develop a strategic, long-term approach to environmental management, notably through the adoption of a comprehensive national plan for the environment with clear qualitative and quantitative objectives and targets;
- develop a framework for sustainable financing of both investment and operation and maintenance of environmental infrastructure and services.

Towards sustainable urban and coastal development

Since the mid-1980s, major efforts have been made to restore urban centres, improve urban amenities and limit urban pollution. For instance, Athenians and visitors to Athens now enjoy good air quality, improved water and waste management services, large pedestrian areas (archeological, green, shopping or residential zones), a subway system and modernised public transport, renovated historical buildings and improved urban amenities. The 2004 Olympic Games provide a further opportunity to improve the urban environment in Athens. Major investments in municipal waste water treatment plants will soon result in better coastal water quality. Greece has passed framework legislation on the control of development in urban areas, and land use plans have been elaborated for nearly all major urban areas. EIA is used for major projects. Development of a long needed national cadastre is well under way, and priority is properly being given to the registration of lands at high risk of illegal development. Important responsibilities for implementing urban and coastal land use regulations have been devolved to municipal and prefectoral authorities. Architectural committees are an example of how local initiatives can function to control the quality of the built environment through consensus. Some island areas have fostered balanced development based on tourism, farming and fishing, preserving cultural and natural assets.

However, the concentration of population and economic activities in coastal areas, as well as the resulting pressures, have increased significantly and will continue to do so, creating new challenges for these areas. Enforcement of land use regulations and building codes remains very weak, leading to problems such as widespread illegal construction of vacation homes and marinas in coastal areas near major cities and tourist destinations. Co-ordination between development and conservation goals in the coastal zone needs improvement. The recent legislative framework for integrated management of coastal areas has to be further developed. Nor is there systematic monitoring of the land use, ecological or landscape quality of coastal areas. Preparation for the management of environmental catastrophes, including flood and earthquake, should be further improved, especially in high-density

urban and coastal areas. Proper disposal of municipal solid waste remains a challenge, though efforts have begun recently to address it.

It is therefore recommended to:

- complete the national cadastre as soon as possible;
- strengthen enforcement of land use regulations and building codes through increased capacity and presence of national and local administrations at territorial levels, making full use of mechanisms to involve citizens in relevant decision-making processes;
- further involve local authorities and other appropriate local partners in the preparation of land use plans;
- pursue the implementation of the recent institutional law on spatial planning and sustainable development, through specific legal instruments for the sustainable development of coastal areas providing for monitoring of the state of coastal areas, protection measures for the coastal land strip and coastal waters, and full protection of designated natural coastal areas of high ecological and cultural value;
- elaborate and implement a national plan for integrated coastal zone management, including measures to ensure the preservation of coastal lands of special natural value (e.g. through a coastal land bank);
- develop integrated, partnership-based sustainable development strategies under local Agenda 21 plans in appropriate urban and coastal areas;
- review measures to control industrial growth in urban areas, examining them from environmental, economic and social points of view;
- enhance emergency planning for the prevention and mitigation of flood and earthquake damage, especially in areas where population and physical assets are concentrated.

Towards sustainable tourism

Tourism in Greece is based on exceptional natural and cultural assets. Recent tourism policy recognises this, and seeks to protect these assets and to promote energy conservation in the tourism sector. EIA is widely used to assess tourism infrastructure projects. Building standards and land use zoning mechanisms are in place. Operating licences for tourism establishments often include conditions relating to environmental management. Waste water treatment capacity and waste management have improved in major tourist areas. A number of hotels have voluntarily adopted environmental management systems, and NGOs have launched some sustainable tourism initiatives in coastal and rural areas. Public information and training programmes relating to environmental management of tourism impacts are in effect.

The traditional Greek marketing focus on price competitive, quantitative tourism has resulted in large increases in numbers of tourists, and thus more environmental pressure, accompanied by decreasing expenditure per tourist. Meanwhile, heavy use of subsidies may be leading to oversupply of tourism infrastructure, and appears to have contributed to the geographic concentration of tourism activities and related environmental pressures. Enforcement of building codes and zoning in the sector is weak, leading to widespread illegal construction of vacation homes in coastal areas near tourist destinations. Integrating environmental concerns within tourism policy remains a challenge, in terms both of conserving nature, water and energy resources, and of more effectively minimising generation of solid waste, waste water, congestion and noise. Hence recent tourism policy emphasises: i) making better use of existing capacity by spreading tourism demand in time and space; ii) raising the quality standards and environmental performance of tourism infrastructure and services; and iii) achieving a better “mix” of tourism with diversified products such as ecotourism, conference tourism, health spa tourism, and cultural or rural tourism. This new policy emphasis should be further strengthened and implemented.

It is therefore recommended to:

- pursue the development of a national action plan for sustainable tourism development, detailing measures to integrate environmental concerns into tourism activities;
- improve the information base on tourism and the environment; develop related indicators, and monitor progress towards sustainable tourism;
- strengthen enforcement of regulatory measures, in particular those related to pollution, land use planning, and construction of buildings in coastal areas;
- continue to develop infrastructure for waste water treatment and solid waste disposal in or near tourism-intensive areas, and define financial mechanisms to cover operation and maintenance;
- expand the use of transport and traffic management for tourism-intensive areas;
- continue to promote sustainable development of islands, building on complementarities among tourism, farming, fishing and other activities.

3. International Co-operation

Greece's achievements in international environmental co-operation are extensive. They contribute to the positive international image of the environment in Greece, which attracts large numbers of international tourists and should be reinforced at the time of the 2004 Olympics. In spite of its limited environmental administrative capacity and its level of economic development, Greece has transposed nearly all EU environmental directives and ratified most relevant international agreements. Consequently its environmental policy and law have been very much influenced by legal development at international level. To implement EU directives, Greece has benefited from considerable EU financial support. This has made it possible to improve energy and transport infrastructure and to start building a network of modern waste water treatment plants.

The political changes in central and eastern Europe gave Greece new opportunities to strengthen co-operation with its neighbours and establish new links with Balkan states and others in the region; this co-operation has already had positive results concerning transboundary waters. Greece has increased its involvement in the protection of marine waters, both by better preventing pollution from land-based sources and by improving emergency preparedness in case of an accidental spill at sea. Its marine area is under constant surveillance and ships are visited in its harbours to verify compliance. The Blue Fund was created to collect pollution fines and use them to enhance pollution prevention; this approach, linked to imposition of stiff fines, has proved very useful. Greece has ratified the MARPOL Convention and all its annexes, and has launched activities to raise awareness among Greek seamen. Concerning climate change, Greece aims to meet its emission targets under EU burden sharing: its greenhouse gas emissions will be authorised to grow, but at a much lower rate than GDP. Meeting the emission targets will nevertheless be a challenge and will require strict energy conservation measures. Greece has created an interministerial committee to handle this issue and has submitted its national action plan. In addition, Greece has asked to join the OECD Development Assistance Committee and has decided to raise its official development assistance (bilateral and multilateral) from 0.12% of GNP in 1995 to 0.2% in 2001; part of this aid is for environmental protection.

The very significant changes that Greece has introduced in its international involvement concerning environmental protection have not always had all the expected results because of implementation deficiencies at domestic level. The degree of actual implementation of national environmental legislation based on international obligations is not well known because of lack of inspection. The Sofia Protocol was not fully implemented and as a result NO_x emissions have continued to increase. Marine pollution from land-based sources is actually being reduced; on the other hand, some delays have occurred regarding the ratification of recent amendments and protocols to the Barcelona Convention. Little publicity has been given to OECD legal acts, which have not been implemented beyond what is required under EU law. To better protect nature in areas of international significance, additional, practical measures are needed. The growing responsibility for international environmental activities is assigned to a small staff whose size is frozen; as a result there is a discrepancy between formal transposition of international environmental commitments into Greek law, and their actual implementation.

It is therefore recommended to:

- ratify international environmental agreements already signed or supported by Greece (Annex III);
- continue transposing EU environmental directives and fully implement them;
- reinforce domestic means and institutional capacities available for fulfilment of duties related to international environmental co-operation;
- ensure full implementation of international commitments on nature protection;
- continue to implement measures aimed at preventing and mitigating marine pollution;
- strengthen measures aimed at conserving energy, with a view to combating climate change and reducing air pollution;
- take appropriate measures so as to be able to meet international commitments concerning SO_x emissions and stabilisation targets for NO_x emissions.