

## CONCLUSIONS AND RECOMMENDATIONS\*

In the 1990s, Portugal's GDP increased by about 25% and its population by 1%. GDP per capita rose by 23%, but is still more than 25% below the OECD average. Particularly after 1993, *GDP growth* was significantly higher than for the EU as a whole. This growth is associated with structural changes (industrial modernisation, decline in agriculture, rapid urbanisation of coastal areas, development of tourism) and regional disparities.

Pressures on the environment include natural resource use, pollution and the restructuring of land use. Portugal faces the challenge of achieving economic, environmental and social development that is nationally balanced and converges with that of other European countries. In particular, over the last decade, *environmental infrastructure* (e.g. for water supply, waste water treatment and waste treatment) expanded due to major investments: these efforts must continue for Portugal to achieve the high standards set by EU environmental policies. For this purpose, Portugal has used and will continue to use EU funds to help it *converge with other EU members in environmental protection*. Significant investments were also made, and positive results achieved, regarding nature conservation. Portugal has further made considerable efforts, which must be pursued, to integrate environmental concerns into the decision making process (e.g. promoting environmental impact assessment of major projects). Land use plans have now been made for the whole country.

Hence, it is all the more necessary for Portugal to: i) further implement its environmental policies and strengthen its environmental infrastructure; ii) better integrate environmental concerns into economic decisions; and iii) reinforce international environmental co-operation. This report examines progress made by Portugal *since the previous OECD Environmental Performance Review* in 1993, and the extent to which Portugal's *domestic objectives and international commitments* are being met, based on environmental, economic and social criteria. A number of recommendations are put forward that could contribute to strengthening the country's environmental performance.

---

\* Conclusions and Recommendations reviewed and approved by the Working Party on Environmental Performance at its meeting in July 2001.

## 1. Environmental Management

### *Implementing more effective and efficient environmental policies*

In the 1990s, Portugal made much progress in establishing a revised, modern environmental *legislative framework* (largely but not solely in response to EU environmental directives), in strengthening its *environmental institutions* (including establishing a single ministry and related regional bodies in charge of both environmental and land use matters), in developing *national environmental planning* (e.g. its first national environmental plan, in 1995, and strategic plans concerning water and waste services), in adapting *physical plans* covering the entire country (e.g. national coastal area protection plans, national nature protection plan, municipal land use plans) and in *investing in and programming* water- and waste-related infrastructure, particularly in the context of the 1994-99 and 2000-06 EU Community Support Frameworks.

However, much remains to be done to further develop environmental *investment* (e.g. for water- and waste-related infrastructure and for air pollution abatement and control [PAC] in large energy and industrial facilities), to implement *environmental regulations* effectively (e.g. by increasing compliance rates through strengthened inspection capacities and more effective administrative and penal sanctions, by

It is *recommended* to:

- continue implementing the various national plans and investment programmes and review and revise the *National Environment Plan*;
- strengthen the financial and human resources devoted to national environmental inspection to support progress in *compliance with and enforcement of environmental regulations*;
- strengthen financial and human resources to continue support progress in *compliance with and enforcement of land use regulations* in the context of national and municipal land use planning;
- ensure that *voluntary agreements* become more effective and efficient (e.g. with clear targets, reliable monitoring, improved transparency and third party participation);
- continue to strengthen implementation of *integrated pollution prevention and control* licensing mechanisms;
- develop the use of *economic instruments* and full cost recovery in the provision of environmental services, and progress towards full adherence to the polluter pays and user pays principles;
- significantly increase *economic analyses* of environmental policy measures.

verifying progress with respect to voluntary agreements and by promoting implementation of the integrated pollution prevention and control licensing mechanism) and to implement the recent national and municipal *physical plans* effectively. In the second half of the 1990s Portugal increased its environmental expenditure to about 1.6% of GDP (including PAC expenditure of about 1.1% of GDP), and it should probably expand this *financial effort* to meet its ambitious environmental targets in the areas of water and waste management. Special attention will have to be given to progress towards fuller implementation of the *polluter pays and user pays principles* in order to assure a shift of financing from taxpayers to polluters and users of environmental services, and to get ready for a likely reduction in EU financing beyond 2006. The use of economic instruments such as charges, deposit-refund programmes and other market instruments should be expanded in all environmental fields, particularly to accompany the development of cost-effective provision of water- and waste-related services.

### *Air management*

Portugal adopted several *environmental measures* to contain growth in air pollutant emissions in the 1990s. These include mandatory technical inspection of vehicles, voluntary industrial agreements and plans for fuel quality improvements and for reformed licensing of industrial activities. Expenditure on air pollution abatement and control has grown recently, mainly in response to the EU directive on large combustion facilities. Several *energy measures* (gradual introduction of natural gas since 1997, investment in improving energy efficiency, promotion of renewable energy sources) have also contributed to air management, as have a variety of transport tax and energy tax incentives. Progress has been made in reducing *ambient levels* of criteria air pollutants in urban areas (e.g. Lisbon, Porto) to well below guideline levels, though signs of degradation have been observed in some industrial areas.

However, by the end of the 1990s, Portugal had *not yet decoupled its air pollutant emissions* from economic growth, and had not signed or not ratified the various protocols under the Geneva Convention on Long-range Transboundary Air Pollution. Its SO<sub>x</sub>, NO<sub>x</sub>, NMVOC and CO<sub>2</sub> emissions all increased in the 1990s. *Ground-level ozone*, although not well monitored, seems to occur seasonally in most regions. Portugal now faces the challenge of meeting its international and domestic commitments: to reduce (by 2010, compared to 1998) emissions of SO<sub>x</sub> by 57%, NO<sub>x</sub> by 32% and NMVOCs by 63% (assuming the Gothenburg Protocol is ratified) and to increase its GHG emissions by less than 27% by 2010 compared to 1990. Programmes on *energy savings* should be expanded in all sectors; this would have multiple benefits. Overall, air pollution abatement has not received high priority in Portugal and there is little integration of air pollution concerns in industry, energy and transport policies.

It is *recommended* to:

- implement further measures to reduce  $SO_x$ ,  $NO_x$  and  $CO_2$  emissions in order to fulfil domestic and international commitments cost-effectively; continue to design and implement measures to reduce emissions of ozone precursors;
- foster the implementation of the *new integrated environmental licensing* for industrial installations and strengthen related enforcement;
- develop *energy efficiency* programmes in the transport, residential and industry sectors (e.g. for small and medium-sized industries) so as to derive multiple benefits: more efficient energy use, lower fuel import dependence and reduced emissions of both conventional air pollutants and  $CO_2$ ; implement *fuel quality* improvement plans fully;
- strengthen the guidance function of *environmentally related taxes* concerning transport and energy;
- continue to act to reduce the average age of *vehicle fleets* through improved control of used car imports, enhanced technical inspections and economic incentives for fleet renewal; continue to develop public transport;
- expand air quality *monitoring* (e.g. to include fine particulates and ground-level ozone);
- establish or enhance *air quality management programmes* for major cities.

### *Water management*

The 1990s were marked by very significant efforts and progress in Portuguese water management. The country reinforced its *institutional and legislative capacities* for managing water resources: the Water Institute was formed in 1993 to deal with both quantity and quality issues; river basin councils and a national water council were established and river basin plans and a national water plan are being finalised. All EU water-related directives have been transposed into Portuguese legislation, apart from the revised drinking water directive. The EU water framework directive, adopted during Portugal's EU presidency, is being transposed, implying major revision of water legislation. Portugal also upgraded its *municipal water supply and sanitation infrastructure* in the 1990s. The share of population connected to a public waste water treatment plant rose from 21% in 1990 to 55% in 1999, with a large part of the investments co-financed by the European Union. In 2000, an *ambitious new strategy* was adopted, aiming to provide 90% of the population with waste water service by 2006. The strategy envisages major reforms: plurimunicipal programmes

have been established to improve public water supply, sewerage and waste water treatment services, and will gradually be extended to the whole territory. Water companies are being formed, with increasing use of private capital. Public reservoir management plans have been or are being prepared to improve water quality, co-ordinate the various uses of water and preserve aquatic ecosystems.

Although bathing water quality has remained good and has even improved in some coastal areas, surface water quality has only started improving; widespread *microbiological and organic matter* contamination still exists. Some groundwater is affected by *nitrates* from agriculture and by seawater intrusion resulting from over-extraction in coastal aquifers; the nitrogen surplus from agriculture has decreased, but 13% of municipalities exceed the nitrate directive requirements. *Drinking water* quality is barely controlled in the small supply projects that serve about 20% of the population. Quality objectives for water cover only some dangerous substances, and there are not yet national pollution reduction programmes for all these substances. *Pollution charges and withdrawal charges* introduced by law in 1994 have not been put into practice; in particular, little progress has been made with applying the polluter pays and user pays principles to *industry*. Industrial waste water is

It is *recommended* to:

- implement *water management by river basin*, in particular through river basin authorities;
- continue to improve the *efficiency of water and waste water services* by extending the formation of plurimunicipal bodies to the whole territory, by opening the water service supply sector to private operators and private funding and by applying the user pays and polluter pays principles;
- mobilise national and international technical, human and financial resources to achieve the 2006 objective of *90% of population connected* to public waste water treatment;
- promote the use of economic instruments such as *pollution charges* for industry and *withdrawal charges* for agriculture;
- prepare national pollution reduction programmes for all *hazardous substances* discharged into water (e.g. by industry);
- implement environmental impact assessment of large new *irrigation projects*, pursuant to new EIA legislation;
- extend water quality monitoring to *all groundwater sources* used or intended for drinking water abstraction.

discharged into water bodies without proper treatment for older plants not connected to public sewerage networks. Continuing determination will be needed to improve the cost-effectiveness of *municipal water and waste water service* provision: waste water charges are rarely included in the water bill; water supply and waste water investments have been heavily subsidised. Financing the new strategy will be a challenge. *Agriculture* exerts increasing pressure on water resources by way of, for example, large irrigation projects; the user pays principle should be applied to improve efficiency and to finance the investment, operation and maintenance costs of irrigation.

### *Waste management*

Since the mid-1990s, Portugal has established a solid *legal basis* for environmentally sound waste management and has developed *national strategic plans* for the management of municipal, industrial and hospital waste. The strategic plans were followed by national action plans concerning municipal waste, hospital waste and industrial waste prevention. Out of 328 *uncontrolled dumping sites*, 272 had been closed by the end of 2000. Municipal waste *recycling* activities gained momentum; they are targeted at waste streams such as packaging waste, used batteries, used tyres and end-of-life vehicles. Charging for municipal waste management services has been increasingly common, as are plurimunicipal services.

However, *waste generation* is growing faster than GDP and private final consumption. The goal of closing all dumps by 2000 was not fully achieved, partly because of treatment capacity issues. Recycling rates are generally far below target

It is *recommended* to:

- complete closure of uncontrolled *dumping sites* by 2001;
- continue to implement the *national plans on municipal, industrial and hospital waste management*; monitor the performance in implementation, and review and revise the plans accordingly, with special attention to waste prevention efforts;
- where appropriate, adopt *household waste charges* based on waste production rather than on water consumption;
- continue to develop quantitative targets for *industrial waste* stream management; use economic incentives to encourage industrial waste recycling;
- foster the development of a *waste management industry* including co-incineration of hazardous industrial waste in cement plants;
- develop public information on options for *hazardous waste* treatment.

for both municipal and industrial waste. *Full cost pricing* is not widely used in waste management. Legal obligations for waste generators to report waste generation, treatment and disposal to the authorities are not well observed yet. Quantitative targets for reduction of waste generation and for recycling and final disposal in individual sectors could be further developed, with special attention to reduction of hazardous waste. A National Industrial Waste Prevention Plan was approved in 2000 to promote waste minimisation. A solution should be found for the final disposal of combustible *hazardous industrial waste*, with expanded public information on treatment options, including co-incineration in national cement kilns, and on environment and health monitoring. Overall, despite good progress since the mid-1990s, much remains to be done to achieve effective and efficient waste management in Portugal.

### *Nature and biodiversity*

In the 1990s, nature protection progressed in many ways in Portugal. The extent of *protected areas* increased and has already reached the 2006 national target of 7.5% of the continental territory. With inclusion of the areas designated as Special Protection Areas (under the EU bird directive) and those proposed as Natura 2000 sites, more than 50% of the coastline and 21.4% of the continental territory would be covered. Overall, Portugal's *coastal and marine ecosystems* have remained in a reasonably good state of conservation; two marine protected areas were established in 1998, accounting for 1.7% of the continental platform, and a third one was created in 2000. Land use and management plans exist for about 50% of protected areas and are in preparation for the remainder, with 100% coverage expected by 2003. Public expenditure and staffing for nature conservation have significantly increased. The country is now fully covered by *municipal land use plans*. *Agri-environmental programmes* have expanded and now involve 23% of farmland, above the 15% EU target for 2000. Maintenance of traditional extensive farming has made it possible to conserve or even, in some cases, increase biodiversity. The total *forest area* has increased; the area covered by autochthonous broadleaf species is stable overall; and environmental concerns have been integrated into the farm forestry programme. Some 21 regional forest management plans are being prepared (due by 2003). Such programmes, which represent considerable progress, need to be consolidated and expanded in view of the pressures on nature and biodiversity from a range of economic activities and changing land use patterns. A comprehensive national biodiversity strategy was published in May 2001 and is under public consultation.

Rapid *development in coastal areas* (urban expansion and tourism) puts major pressure on key habitats while the concomitant population decrease in *inland protected areas* threatens traditional farming and forestry activities, some of which

help in maintaining protected landscapes, habitats and cultural values. Commercial *eucalypt plantations* have replaced a significant share of resinous forest ecosystems, sometimes over large areas in unsuited locations; special attention should be given to the protection of Mediterranean forest ecosystems. *Forest fires* have destroyed the equivalent of a quarter of the current forest area. Freshwater ecosystems (e.g. marshland) have declined over the last few decades. Some freshwater fish species are also threatened by river development and water pollution.

It is *recommended* to:

- implement the *national biodiversity strategy*, in particular measures to control rapid urban expansion and tourism development in coastal areas and taking account of the Natura 2000 network;
- finish establishing and implement management plans for the *national network of protected areas*; establish and implement management plans for Ramsar *wetlands* and restore migratory routes between marine and inland waters for migratory fish species;
- ensure that nature conservation is taken fully into account in *implementing regional, coastal and municipal land use plans*;
- explore the possibility of raising private funds for nature conservation to progressively assure its *long-term financing*;
- continue efforts to implement biodiversity conservation in *agriculture, forestry and fisheries*.

## 2. Towards Sustainable Development

### *Integrating environmental concerns in economic and sectoral policies*

In the 1990s, Portugal experienced a period of rapid economic growth and structural change, with a substantial increase in public and private investment, including for environmental infrastructure. Many strategic plans, action plans and operational programmes apply to economic, sectoral and regional development as well as to environmental management. A coherent, comprehensive system of spatial planning at national, regional and local levels was established, including special plans for coastal zones and forestry. In this context, *institutional integration* of environmental concerns has made significant progress at all levels of public decision making: at strategic,

planning, programming, policy making and project design levels. Sectoral ministries such as agriculture and transport have begun to take environmental concerns more systematically into account in policy design and implementation, following appointment of environmental auditors directly attached to the minister. The Prime Minister's Office pays close attention to sustainable development issues. Responsibilities for environmental policy and spatial planning have been merged in a single ministry. Efforts are being made to bring small and medium-sized enterprises into compliance with environmental law through adjustment contracts with branch associations. Many programmes provide incentives to speed environmental investment and stimulate environmentally *sound management practices*.

Despite all these positive developments, Portugal's progress in *decoupling* pollution pressures from economic growth has been weak. Waste generation, car traffic and the related CO<sub>2</sub> emissions have increased at rates higher than those of GDP. Overall, little progress has been made in improving energy efficiency. Monitoring of the local implementation and enforcement of spatial plans is necessary. *Market integration* of environmental concerns has only just begun to progress. For instance, the polluter pays and user pays principles are far from being fully implemented in water and waste management. Environmentally related taxes are not used to their full potential in guiding production and consumption towards sustainable practices and

It is *recommended* to:

- *decouple* pressures on the environment from sectoral activities (e.g. energy, industry, transport, agriculture) through better *institutional and market integration* of environmental concerns in sectoral decision making and practices;
- further strengthen national and local *sustainable development* efforts (e.g. by adopting a national sustainable development strategy);
- integrate environmental concerns in *fiscal* policies and decrease environmentally harmful subsidies;
- promote environmental management systems and eco-efficiency in *industry*, including by linking investment aid to compliance with environmental standards;
- intensify efforts to improve the modal split in passenger and freight *transport*, and to develop sustainable urban transport systems;
- strengthen sustainable *rural development* policies and reinforce mechanisms of cross-compliance in *agricultural policies*;
- strengthen the capacity to *evaluate the environmental impact* of regional and sectoral development schemes.

patterns. Environmentally damaging subsidies are used in various sectors. Additional steps are still needed to assure proper integration of environmental concerns in energy, industry, transport and agriculture.

### *Integrating social concerns in environmental policies*

In the 1990s, Portugal achieved clear progress towards social cohesion and economic and environmental convergence. *Environmental democracy* has progressed significantly: improvements have been achieved in the quality of and access to environmental information; media coverage of environment issues has increased, as has environmental awareness (e.g. regarding waste separation by households); environmental NGOs have grown in size and significance. *Environmental education* is a high priority and is beginning to show good results. *Positive employment effects* have been triggered, in both the public and private sectors, by investment in environmental infrastructure and implementation of environmental laws. Environment-related employment represents about 1% of total jobs. Portugal has set up a remarkable and comprehensive *system of spatial planning* at national, regional and local levels to guide land use development (e.g. in coastal zones).

However, the *distribution of environmental pressures* is uneven across the country: the Lisbon metropolitan area, Porto and coastal zones such as Algarve are threatened by traffic growth, urban sprawl and tourism development; and significant shares

It is *recommended* to:

- ensure that *environmental convergence*, both within the EU and within Portugal (e.g. among regions) receives higher priority in the implementation of EU cohesion policies;
- take *distributive effects* into account when privatising environmental services, introducing economic instruments or changing legislation concerning property and user rights;
- foster the development of *environmental democracy* through further improvement in environmental information, increased participation (e.g. in EIA processes) and the development of Local Agenda 21 initiatives;
- continue to raise environmental awareness and competence in environmental management through comprehensive *environmental education*;
- strengthen the management and enforcement *capacities of local authorities*, and develop professional classification profiles for environmental employment.

of the population still lack satisfactory water supply, waste water treatment and waste treatment services. *Environmental democracy* needs to be further strengthened: most environmental NGOs are weak in membership and funding; and participatory approaches to planning or local development cannot build on a long tradition in local democracy. Intensive leadership and competent moderation are required to launch more effective Local Agenda 21 initiatives. EIA procedures should rely more on public hearings and open participatory processes. Environmental training is further needed to support many local communities in managing environmental projects and enforcing environmental legislation.

### *Sectoral integration: tourism*

The 1990s were a watershed decade for Portuguese tourism, with rapid growth in international and national tourism, which together account for 9% of GDP and 6% of employment. The decade saw the success of Expo 98 in Lisbon and an ever greater share for the Algarve region in tourism investment and receipts. A *new approach to tourism* attempts to reposition Portugal in the domestic and international markets and to halt or reverse environmental pressures and damage from tourism in coastal zones. Recent tourism initiatives for inland Portugal are designed to promote sustainable regional and local development, to spread demand away from the coastal areas and, drawing on private sector resources, to preserve the rural architectural heritage. Tourism *policies* are progressing, with: a *National Tourism Plan*; *national programmes of investment* under the Second and Third Community Support Frameworks; *legislation* on topics such as nature tourism, accommodation, and protected areas; a range of *physical planning tools* at national, regional and local levels, with municipal land use plans now covering the whole country; *environmental guidelines* for tourism providers; promotion of more *environmentally friendly tourism* (e.g. eco-tourism, agro-tourism and nature tourism); and application of EIAs to *tourism projects*. To *monitor progress*, an extensive inventory of tourism resources has been made, and tourism-environment indicators are being developed.

Nevertheless, tourism authorities and tourism providers alike still rely heavily on the traditional “sun and sand” formula, with environmental pressures (e.g. waste water and solid waste generation and transport-related pressures) concentrated over time and space. The new marketing strategy poses a risk of segregating international and domestic tourists, and in certain aspects (e.g. golf holidays) it may actually exacerbate environmental pressures. The construction of secondary residences and hotel complexes contributes to the influence of the construction industry and the accumulated pressures on coastal areas. The use of *economic instruments* needs to be extended, in line with the producer pays and user pays principles. Quantified environmental targets

It is *recommended* to:

- fully monitor and enforce the implementation of recent *coastal and municipal land use plans* and, in the process, increase municipalities' and tourism professionals' information on and commitment to the integration of environmental concerns into tourism decisions;
- continue seeking to reduce environmental pressures from tourism through the development of *sanitation infrastructure* (water supply, waste water treatment, solid waste treatment) supporting tourism facilities;
- continue seeking to reduce pressures on the environment from tourism and related transport (e.g. by *spreading tourism demand* over time and space);
- put more emphasis on *eco-friendly forms of tourism*, with efforts to include domestic tourists;
- promote the integration of *sustainable tourism in local economies* (e.g. coastal areas that are under intense pressures from tourism, as well as relatively poor inland areas);
- develop the use of *economic instruments* (e.g. access fees, airport charges, taxation of second homes) in line with the polluter pays and user pays principles;
- develop the tourism-environment indicators and the tourism resources inventory as a basis for both providing tourist information and monitoring progress towards *sustainable tourism objectives*.

for the tourism sector should be developed. While the political will to integrate environmental and tourism policy appears relatively strong at the central level, physical planning implementation is mostly at the local level, where short-term economic considerations and environmental concerns are often seen as directly conflicting.

### 3. International Commitments

Over the 1990s, Portugal made progress with respect to a number of international environmental issues. The country participates in many multilateral or international environmental agreements, its bilateral environmental relations are quite satisfactory and it has transposed EU environmental directives into its legislation; it has also progressed in its environmental convergence within the EU, most significantly in the area of water- and waste-related infrastructure. Portugal plays a positive role in supporting the progress of a number of Portuguese-speaking countries on international environmental issues.

### *Achievements*

Concerning *marine issues*, Portugal was very active in multilateral forums in the 1990s. It ratified the OSPAR Convention on the prevention of marine pollution, and after Annex 5 on the protection of marine ecosystems was adopted in 1998 in Sintra, it created two marine parks. Concerning *LMOs and nature protection*, Portugal worked very actively towards adoption of the Cartagena Protocol to the Convention on Biodiversity so as to encourage better monitoring of trade in LMOs. It has ratified the Eurobats and ACCOBAMS agreements to the Bonn Convention: protection measures have been taken for bats and will be taken for cetaceans. Portugal ratified the Convention to Combat *Desertification* and published a national action programme. Concerning *toxics*, Portugal signed the 1998 Rotterdam Convention on prior informed consent, a step towards committing itself to better control of exports of hazardous chemicals and pesticides to developing countries; it has already achieved the objectives of the Aarhus protocols for several heavy metals and persistent organic pollutants (e.g. cadmium, lead, mercury, dioxins and furans). The Framework Law on the Environment provides for compulsory insurance of activities posing high environmental risk.

Portugal is using *EU funds* effectively, particularly for water supply and sanitation infrastructure. However, some European directives have proved difficult to implement (e.g. in the fields of water quality, nature conservation and EIA), and Portugal has not yet prepared contingency plans for hazardous installations. Co-operation *with Spain* has been reinforced through the signature in 1998 of a convention on water management that significantly widens the scope of previous bilateral agreements and will aid in implementing river basin management, in line with requirements of the 2000 EU water framework directive; bilateral co-operation has also progressed on nature conservation (e.g. creation of the Gerês-Xurés transboundary park). Portugal has become a donor country, with *ODA* that has stayed around 0.25% of GNP, reflecting instability in most Portuguese-speaking African countries; however, the share of its ODA devoted to environmental projects is relatively low. Portugal also contributes to the GEF.

### *Progress to be made*

Concerning *marine issues*, Portugal needs to protect itself from the dangers associated with the considerable maritime traffic off its coasts. There have been positive developments as regards preventing marine pollution from ships, but Portugal has not yet signed the OPRC and the Salvage convention. Despite efforts made by Portugal, the 1990 Lisbon co-operation Agreement has not entered into force, pending expected ratification by some other countries. As a result, the International Centre to Combat Oil Pollution in the North-eastern Atlantic (CILPAN) has had to operate with

limited capacity. Portugal has not signed several agreements related to compensation in the event of oil spill accident or damage by hazardous or noxious substances along its coasts. Nor has it signed the London Protocol to the London Dumping Convention further restricting waste dumping at sea.

Concerning *climate change*, Portugal has signed the Kyoto Protocol and in 2001 adopted a national strategy to achieve its targets. Meanwhile, its total GHG emissions increased by 18% between 1990 and 1998 and are likely to further increase by 2010, far above its commitments of 27% growth, if the strategy is not fully implemented and effective. More should be done to improve the energy efficiency of the Portuguese economy and to capture related multiple benefits: reduced GHG emissions, reduced emissions of conventional pollutants, economic benefits from more efficient energy use and reduced fuel import dependence. Concerning *ozone depletion*, Portugal has made progress towards phasing out ozone depleting substances, but still imports CFCs from existing stocks in other EU countries. Under the Convention on *Biological Diversity*, Portugal has published a draft of its national biodiversity conservation strategy. While Portugal has not signed or ratified the Helsinki, Sofia, Geneva and Oslo protocols to the Convention on Long-range *Transboundary Air Pollution*, it did sign the more recent Gothenburg Protocol, with stringent, SO<sub>2</sub>, NO<sub>x</sub> and VOC emission reduction objectives, and is considering ratification.

It is *recommended* to:

- ratify and implement formal international agreements to prevent *marine pollution* from ships (e.g. OPRC, London Protocol to the London Dumping Convention) and those that would enable higher compensation in the event of an *oil spill accident* or damage from noxious substances along the coasts;
- implement the national strategy to achieve *GHG emission* reduction targets and capture multiple ancillary benefits;
- ratify the Gothenburg Protocol and take efficient measures to achieve the *SO<sub>2</sub>, NO<sub>x</sub> and VOC emission* reduction objectives;
- prepare contingency plans in the event of an *industrial accident*, pursuant to the Seveso directive;
- take measures to reduce imports of *CFCs* so as to contribute to protection of the ozone layer, pursuant to the Montreal Protocol;
- increase *ODA* in line with national commitments, as well as the share of ODA devoted to environmental projects.