

**OECD**  
**ENVIRONMENTAL PERFORMANCE REVIEWS**  
**AUSTRALIA**

**Conclusions and Recommendations**

**ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

## OECD Environmental Performance Review

### AUSTRALIA

#### CONCLUSIONS AND RECOMMENDATIONS\*

Australia is an ecologically unique continent, characterised by mega-biodiversity. It is also a fully developed, highly urbanised, federal country with growing links to many developing countries in the region. It has an economy based more on natural resources than many other OECD countries: agriculture and mining account for over 61 per cent of export earnings derived from trade in commodities, mainly in the Asia-Pacific region.

In the past ten years, Australia's economy has grown faster than the OECD average. Pressures on the environment and natural resources from agriculture, manufacturing, the energy sector, transport and mining continue to grow, constituting a major challenge for Australia. Environmental progress thus depends not only on environmental policies themselves but also on the integration of environmental concerns in sectoral policies, as well as on action taken by local, State/Territory and Commonwealth Governments and by enterprises, households and community groups.

Early environmental policy responses were directed at limiting the local impact of natural resource exploitation and large development projects. As environmental issues have grown in importance on Australia's policy agenda, the debate has centred on the Commonwealth Government's constitutional power to protect the environment and on the need for intergovernmental co-operation within Australia on environmental matters, with sharing of responsibilities and the development of a more consultative approach to conflict resolution. After the adoption of the National Strategy for Ecologically Sustainable Development in the early 1990s, efforts are now directed at breathing life into Australia's sustainable development policy agenda and meeting the challenge of integrating the practice of sustainable development into economic and sectoral decisions. Sectoral strategies consistent with ecologically sustainable development have recently been completed for agriculture, forestry, waste, biodiversity and water. State and local governments have the main responsibility in addressing issues such as water, air and waste management, land use, transport planning and natural resource management.

This OECD report sets out the baseline for assessing future environmental progress, and examines Australia's environmental performance in three areas:

- implementation of environmental policies;
- integration of environmental concerns and economic decisions;
- international co-operation on environmental protection.

It also assesses the extent to which Australia's domestic objectives and international commitments are being met, based on the criteria of environmental effectiveness and economic efficiency. A number of recommendations are put forward that could contribute to further environmental progress in Australia.

---

\* Conclusions and Recommendations approved by the Group on Environmental Performance at its November 1997 meeting.

## 1. Implementing Environmental Policies

### *Strengthening the effectiveness of environmental policies*

The current approach to environmental management in Australia is often described as a partnership approach. It uses a mix of regulatory, economic and voluntary instruments, with voluntary measures and agreements between governments, industry and community groups playing a central part. Corporate environmental management drives environmental progress in the mining industry, for instance. Voluntary programmes, such as the Greenhouse Challenge initiative, open the road to greater private sector involvement more generally. The approach to environmental licensing is case by case, and there are wide differences among States in enforcement and in the availability of information on compliance. Substantial efforts are being made to develop regimes that allow regulators to avoid devoting too many resources to inspections and directive action. The water reform agenda emphasises true-cost water pricing; in addition, innovative and effective economic instruments are being used in other areas, such as performance bonds to cover mine site rehabilitation costs. The Great Barrier Reef Marine Park Authority, the Murray-Darling Basin Commission and the Board of Management of Uluru-KataTjuta are examples of sound place-based and partnership-based environmental management.

There is significant potential for improving the effectiveness and efficiency of environmental management, by: i) setting environmental standards within the country, such as those currently being defined as National Environment Protection Measures; ii) expanding the use of economic instruments, such as product charges, deposit refund systems and emission trading regimes; and iii) integrating these instruments into the general partnership approach. The user pays principle should be applied more extensively to cover all expenditure on environmental protection, notably for waste management and waste water treatment.

Despite progress in reporting on the state of the environment, environmental monitoring and environmental data in Australia are often inadequate in terms of coverage and consistency. This weakens the capacity to track environmental progress, formulate cost-effective policies and measure environmental performance. Better environmental data, indicators, monitoring and reporting are necessary so the public and decision makers can better understand the situation and address the most pressing problems.

Efforts are being made at various levels of government to improve public access to environmental information. In the preparatory stages of environmental regulation, and in environmental assessment procedures, public insight and influence are provided for. Nevertheless, the potential remains to increase public access to environmental information, e.g. on environmental licensing and approval processes and on the contents and implementation of voluntary agreements. Consideration should be given to translating some of the Rio principles concerning public information and participation into national minimum standards on access to courts and to environmental information.

There is also scope to expand reporting by companies on their environmental performance and the impact of their activities. Progress in developing the National Pollutant Inventory is important in this respect. The introduction of mandatory reporting should be taken ahead. Several OECD countries have already established such reporting on continuous and accidental emissions (e.g. through Pollutant Release and Transfer Registers).

Australia's total pollution abatement and control expenditure amounts to about 1per cent of GDP, mostly related to water and waste management. Spending by enterprises represents 32per cent of the total. Most public expenditure is funded by State/Territory and local governments and by households through various charges; the Commonwealth Government accounts for less than 1per cent of total recorded environmental expenditure. Local authorities have expressed concern about their capacity to finance needed environmental investments and operating expenditure in the current climate of reduced public budgets.

It is recommended that consideration be given to the following proposals:

- continue the development and implementation of place-based, partnership-based, outcome-oriented environmental management, using a more cost-effective mix of instruments;
- set environmental standards within the country and implement and enforce them throughout Australia;
- develop the use of economic and fiscal instruments to promote more cost-effective pollution prevention and sustainable use of natural resources;
- upgrade collection and assessment of environmental data with a view to better evaluating performance in relation to environmental policies;
- continue and strengthen efforts to apply public information and participation principles, including access to environmental information, timely responses and access to courts;
- expand public reporting from companies on their environmental performance, both as part of voluntary commitments and through corporate environmental management reports; accelerate the development of the National Pollutant Inventory.

### *Ecosystem and biodiversity*

Australia contains a large and unique part of the earth's fauna and flora and is one of the few countries in the world with mega-biodiversity. Its ecosystems and biodiversity are under a range of pressures from economic activities, intense in some areas, particularly exploitation of natural resources from fishing and agriculture (e.g. grazing, land clearing, irrigation) and to a lesser extent forestry. A large number of introduced species also present major and serious threats to Australian biodiversity. In addition, some coastal areas are subject to strong pressures from urbanisation and tourism, and conflicts between mining activities and protection of sensitive areas are recurrent.

Australia's recognition of the importance of international co-operation for ecosystem and biodiversity management is evidenced by its early ratification of major conventions and the active, often leading role it has played in developing national responses and new international regimes for marine issues. Examples include the Great Barrier Reef Marine Park and protection of marine species near Antarctica. In response to its international responsibilities as well as to pressure from economic activities on its biodiversity, Australia has established a solid legal, institutional and scientific basis for managing biological diversity. It has made significant progress in protecting areas of global significance, such as its 11 World Heritage Areas, and in increasing terrestrial protected areas from about 5 to almost 8 per cent of its land area. The new Natural Heritage Trust, devoted to sustainability of land, water, coastal and marine resources, has the potential to foster greater integration of environmental and natural resource management programmes. The 1996 National Strategy for the Conservation of Australia's Biological Diversity is supported by sectoral strategies. Forward-thinking policies have been adopted for forest protection, and a target has been set of retaining at least 15 per cent of the natural pre-European area of each forest habitat type, 60 per cent of existing old-growth forests and at least 90 per cent of existing high-quality wilderness forests, through the development of Regional Forest Agreements in different parts of the country. New legislation introduced throughout Australia has resulted in improved fishery management. Many voluntary, community-based programmes with significant grass-roots participation have been established and are helping raise the level of awareness of environmental trends and challenges.

The extent and intensity of pressures leading to habitat loss and modification, for both terrestrial and aquatic ecosystems, continue to present an extremely serious threat to Australian biodiversity, with a very high number of threatened and endangered species. The status of some marine species, including mammals, reptiles and fish, is of particular concern. The current coverage and management of protected areas may not be adequate to deal with the pressures involved. In the system of reserves, some areas of poor biodiversity are better protected than areas with high biodiversity. Outside of protected areas, while there has been progress in conservation of natural resources (land, soil and water), progress in conservation of biodiversity (habitats and species) has been extremely limited. There is continued concern within Australia about timber operations in old-growth forests. Much remains to be done to translate Australia's broader strategic approach and commitment to sustainability into actual management of natural resources that integrates ecosystem and biodiversity protection concerns in decision making and actual practice. It is unclear whether the progress

currently being made is of sufficient strength, scope and speed to relieve pressures and redress their impact on biodiversity and ecosystems.

It is therefore recommended that consideration be given to the following proposals:

- continue and intensify efforts to halt and reverse negative trends threatening biodiversity by strongly increasing the pace of ongoing programmes and developing new, creative mechanisms for the conservation of biodiversity in and outside protected areas, combining efforts from the Commonwealth, State and Territory and local governments;
- set more quantitative and operational targets for habitat areas and species population numbers, both on and off reserves, putting more focus on results in existing and new programmes and in instruments such as the National Reserve System;
- consider a major increase in financial resources to strengthen the hands-on management of protected areas and to fund acquisitions and conservation management agreements;
- further improve the knowledge base for Australian biodiversity management; expand research efforts, notably to support the preparation of inventories, improved monitoring and the development of the reserve system;
- improve the integration of biodiversity conservation objectives into the management of off-reserve land (both leasehold and freehold) and develop related new instruments (e.g. conservation easements, covenants, management agreements);
- further develop biological conservation programmes and mechanisms for the 14per cent of Australia's land under indigenous ownership and management, in close co-operation with indigenous populations;
- further translate strategic commitments to sustainable agriculture, forestry and fishing into actual changes in agricultural, forestry and fishery practices.

### ***Water resources***

Australia's water resources are often scarce, and their quality is adversely affected by high turbidity, salinity and nutrient levels in parts of the country. After years of extensive development of freshwater resources, particularly for agriculture, water demand management and water quality degradation have become important concerns. As co-operation between the Commonwealth and the States has increased, national initiatives and strategies have been established to deal with water sustainability and related land sustainability issues. The water reform agenda spearheaded by the Council of Australian Governments is stimulating a major overhaul of water management policies and practices. This overhaul, now well under way, supports true-cost water pricing by reviewing subsidies and cross-subsidies, as well as institutional reforms to separate service delivery from regulatory functions. Salinity control programmes have shown progress. Water quality at bathing beaches in urban areas is improving, reflecting investment in municipal waste water treatment. Groundwater management is now generally sound, with remedial programmes addressing overallocation, notably in the Great Artesian Basin, where the capping of bores has resulted in substantial reductions in water use. The Murray-Darling Basin Commission, set up to manage Australia's largest river basin across multiple jurisdictions, recently decided to cap existing allocations. About 36per cent of Australian farmers participate in landcare groups. The Natural Heritage Trust will inject Commonwealth funds into many programmes promoting sustainable land and water use.

While Australia's consultative approach recognises that stakeholder support is crucial to successful implementation, in the past it has sometimes meant slow development of responses to water and land degradation issues, as well as the introduction of an array of often insufficiently co-ordinated policies and programmes. In many cases, progress is more apparent in terms of inputs and planning than in strongly positive environmental results. Australia's land and water resources thus remain under considerable pressure in many parts of the continent. Given the magnitude of the pressures and the delays in responses, current measures and funding will not be sufficient to halt or reverse the degradation of Australia's land and water resources. The impetus for removal of remaining point sources of nutrients should be maintained, along with efforts in large urban areas to improve the quality of stormwater management and of industrial pollution prevention and control. The coastal environment, which is under stress in heavily developed as well as some developing areas, needs to be

better managed through a more integrated approach to planning and development at all levels of government. As the degree of farmer participation in landcare initiatives varies widely across the country, ways need to be found to increase it. Much work is also needed to identify unsustainable land use, both extensive and intensive, so that additional policy responses can be developed. Australia's water management lacks basic data on water quality. Where data do exist, they often are not collated nationally or are unavailable because of ownership issues.

It is recommended that consideration be given to the following proposals:

- continue to implement the water reform agenda, with focus on i) pricing water resources at true cost through removal of subsidies and cross-subsidies, and ii) making institutional changes leading to the separation of service delivery and regulatory functions;
- encourage integrated, river-catchment-based management programmes;
- pursue initiatives to further reduce point source contamination of watercourses from industrial activities and urban stormwater disposal, as well as nutrient and saline inflows from diffuse sources;
- give greater priority to: ensuring environmentally optimal flows in rivers under stress; making water management more sensitive to the needs of aquatic ecosystems; developing biological indicators of river health; and ensuring that flow regimes are based on the principle of mimicking natural flow regimes, within reasonable economic and social constraints;
- increase, through appropriate incentives, community participation in landcare programmes and ensure that the programmes are achieving environmental results in addressing sustainable development issues;
- monitor closely the benefits of operation of the Natural Heritage Trust, and be prepared to increase its funding if necessary;
- where existing land use is unsustainable, promote retirement of land from use, particularly as concerns extensive pastoralism.

## ***Waste***

Australia is a large generator of waste, almost all of which is landfilled. With awareness growing of the environmental impact of waste generation, both at point of disposal and throughout the life cycle of products, there is now a broad consensus in Australia on the need to improve waste management policies and practices. A major effort is under way to revise State and local waste management approaches, within the framework of a national strategy and objectives based on the waste hierarchy concept. Significant progress has been achieved concerning recycling, particularly of paper waste and beverage containers. A number of the recycling targets for 1995, set out in the 1992 waste minimisation and recycling strategy, have been achieved through a co-operative approach involving different levels of government, industry and the general public. Hazardous waste imports and exports are now controlled in line with international agreements ratified by Australia.

There is considerable scope for improving waste management in Australia. First, there is no consistent waste classification system; nor is there reliable, comprehensive information on the amount and composition of waste streams, making it impossible to accurately define the composition of waste or rates of waste generation, or to evaluate waste management practices and performance. There is little information on the real costs of waste management or the relative cost-effectiveness of treatment and disposal options. Second, Australia's per capita waste generation is high, and almost all waste is landfilled. Too few local councils have as yet adopted waste management plans. The new package of waste minimisation measures and targets represents a promising evolution from the 1992 strategy, addressing the issue of waste minimisation at source. However, reaching the 50 per cent reduction target for waste going to landfill (60 per cent in New South Wales) by 2000 will require full implementation of this package, particularly the National Green and Organic Waste Management Strategy. Third, much progress is needed as regards the many relatively small and often uncontrolled landfills, and to achieve minimum environmental standards for them, particularly in urban and semi-urban areas. Fourth, waste charges generally remain well below management costs and economic instruments are little used in waste management. Fifth, hazardous waste management suffers from a

notable lack of information and knowledge, and there is no national inventory of contaminated sites and related environmental risks.

It is recommended that consideration be given to the following proposals:

- examine opportunities for waste prevention in production, reduction of production waste, better use of raw materials and energy, less use of hazardous components, improved reparability and increased product life;
- promote the further development of local council waste management plans and co-ordinate them regionally so as to improve their technical and economic effectiveness;
- establish regulations for all technical, operational and environmental aspects of landfill creation, operation and closure so as to prevent and control emissions to water, air and soil, promote responsible land management and conservation and protect amenities;
- improve knowledge about the economics of waste management, notably as concerns cost calculation methods, including internal and external costs of collection, transport, recycling, pre-treatment and disposal; carry out a comprehensive analysis of the cost-effectiveness of various treatment, recycling and disposal options for all types of waste, taking into consideration the broad range of settlement patterns and climatic conditions in Australia;
- increase the use of economic instruments in waste management, notably by ensuring that waste charges cover the full cost of waste management and relate to the amount of waste generated, and by considering opportunities to introduce, for example, deposit refund systems;
- accelerate the development of the Australian Waste Database to provide a sound quantitative basis for policy making and evaluation, for both general and hazardous waste;
- establish an inventory of contaminated sites that pose a risk to human health or the environment, define a national or regional remediation programme, further clarify financial liability issues relating to site remediation and examine funding mechanisms for the rehabilitation of orphan sites.

### *Air*

Overall, Australian cities do not have the acute air pollution problems found in a number of major cities in OECD countries, and air quality in Australia is generally good. Urban air quality has improved over the past ten years as a result of both air pollution management (characterised by voluntary approaches and the case-by-case method of licensing stationary sources) and structural changes such as the increased use of natural gas. The introduction of three-way catalytic converters in new vehicles in 1986 helped reduce emissions of NO<sub>x</sub>, VOCs and CO. Recent reductions in airborne emissions of lead represent another achievement for Australia's air management policy, and one that can be considered exemplary in terms of co-operation among different levels of government, industry and the public. SO<sub>2</sub> concentrations in major urban airsheds are well below levels of concern: power stations are generally far from urban areas and the sulphur content of Australian coal is low. Efforts are being made in several cities to integrate air management considerations in transport and land use planning.

Nevertheless, surveys indicate that Australians' major environmental concern is air pollution, and public expectations for air quality management are high. A priority is to ensure that the improvements of the past ten years are not offset by increased pollution pressures from industrial, agricultural, energy and transport activities. Substantial breaches of SO<sub>2</sub> guidelines have occurred near some industrial and mining sites. Agriculture is responsible for large shares of CO, NO<sub>x</sub>, CO<sub>2</sub> and methane emissions. Total and energy-related CO<sub>2</sub> emissions are increasing. Urban areas, where 70 per cent of the population is concentrated, experience episodes of high pollution by CO, photochemical smog and particulates. Further measures to reduce NO<sub>x</sub>, VOC and particulate emissions should be considered in the near future. Concerning new and in-use vehicles and fuel quality, a range of essentially regulatory measures applied in other OECD countries could make a cost-effective contribution to reducing emissions of these pollutants, which play a major role in urban air quality,

particularly in areas of rapid growth such as south-east Queensland, Perth and western Sydney. The lack of a national approach to the adoption of ambient air quality guidelines has resulted in inconsistencies among States and Territories, and progress in setting national ambient air quality standards has been slow. The current air quality monitoring programme covers six capital cities and major industrial centres, but about 8million people live outside monitored areas. Where air quality and emission data exist, they are dispersed among different industries and government agencies. As a result, Australia lacks a national database on air quality and emissions, which is essential for better definition and evaluation of air management strategies. Initiatives already in place, such as the National Pollutant Inventory and the call in the Intergovernmental Agreement on the Environment for a national approach to data collection and handling, could help rectify this situation, though neither initiative has yet been fully implemented.

It is recommended that consideration be given to the following proposals:

- take concrete actions to ensure compliance with the forthcoming National Environment Protection Measures, which will set national ambient air quality standards;
- establish a national database on air quality and emissions;
- extend monitoring to cover more of the 8million people currently living outside monitored areas, and to better measure ground-level ozone, PM<sub>10</sub> and air toxics;
- in consultation with the oil industry, define a programme for improving fuel quality, notably with respect to reducing vapour pressure, sulphur content, and benzene and other aromatics;
- speed up the pace at which leaded gasoline is to be phased out;
- ensure that new vehicles are subject to emission standards equivalent to “best practice” standards in other OECD countries, for both gasoline and diesel vehicles;
- take measures to improve the maintenance and emission performance of in-use vehicles, including mandatory regular pollution checks for all cars; consider the cost-effectiveness of measures to accelerate fleet renewal, such as a premium for scrapping old vehicles;
- strengthen policies on energy efficiency, notably by accelerating the adoption of efficiency standards for non-residential buildings, domestic appliances and motor vehicles;
- intensify transport planning responses to air pollution, with the aim of reducing the need for private vehicle travel, notably in urban areas.

## 2. Integrating Environmental Concerns in Economic Decisions

Australia’s GDP has increased by 35per cent over the past ten years and its population by 14per cent, higher than the OECD averages. Though some decoupling of environmental pressures and economic growth is taking place, it is a weak decoupling, with environmental pressures growing more slowly than GDP rather than decreasing.

The rate and structure of Australia’s economic growth do not suggest any relief to the environment from economic pressures in the foreseeable future. Economic globalisation, and the related increase in exposure to international competition, are strongly influencing the Australian economy. The drive to increase productivity could lead to reductions in the use of some natural resources per unit of output but entail the degradation of others. The lowering of trade barriers could result in higher output in resource-based industries, driven by resource consumption by Australia’s trade partners; effective environmental policies could help reduce any related environmental pressures. The need to attract international capital could lead to moves to reduce environmental protection and regulation, but could also spur improvement in environmental quality as a form of competitive advantage.

Better integration of environmental concerns into economic and sectoral policies and decisions is needed if environmental protection and sustainable development are to be achieved cost-effectively.

### *Fostering sustainable development*

Australia has made considerable progress in developing a framework for the integration of environmental and economic policies. The 1992 National Strategy for Ecologically Sustainable Development, and the reports on its implementation, represent a nationwide commitment to translate the concept of sustainable development into national objectives and policy directions. The participation of Commonwealth, State/Territory and local governments, together with non-governmental groups, in the preparation of the strategy and in reviewing its implementation has given the strategy broad-based recognition and credibility.

More specific efforts towards ecologically sustainable development include the funds being made available under the Natural Heritage Trust and activities to integrate environmental considerations into federal and State/Territory sectoral policies. Examples are the National Forest Policy Statement, landcare programmes and water management policies. Success has been mixed in integrating environmental considerations into government-wide economic policies. Some progress is being made with “green procurement” by government institutions.

Nevertheless, like other OECD countries, Australia is facing the challenge of translating the principles of sustainable development into economic decisions and practices. In many cases, economic objectives take priority over environmental concerns, with most decision makers believing that the wealth created by economic activities will overcome environmental effects. In addition, process-oriented approaches often dominate, at the expense of a focus on environmental results. To respond to this imbalance, quantitative targets and timetables should be adopted, where appropriate, and peer reviews of the environmental performance of States and Territories would also be useful.

Microeconomic reform has generated more efficient pricing of goods and services and an attendant improvement in resource use. Australian governments generally provide little in the way of direct or indirect subsidies to the private sector. The agricultural sector, in particular, receives a producer subsidy equivalent of 9 per cent, compared with 36 per cent for the OECD as a whole. Nevertheless, there remains room for progress concerning water prices, as recognised in ongoing water reform efforts. Australia’s wealth of cheap energy resources and low levels of taxation translate into low energy prices. Low energy prices play an essential part in the competitiveness of Australia’s energy-intensive industries. In many sectors of the Australian economy, there is a potential for reducing greenhouse gas emissions through strengthened no-regrets measures. The Australian Government has consistently rejected higher energy taxation because of its negative impact on the economy and exports. Given the environmental problems directly and indirectly related to energy production and use, particularly the prospect of future commitments to curb greenhouse gas emissions, higher energy taxation should be considered as one way of internalising environmental externalities.

By and large, the role of economic analysis in environmental policy making often appears to be of secondary consideration, and greater weight is given to institutional responses. To aid in understanding of the environmental impact of different development options or packages of policy responses, appropriate analytical tools (e.g. sectoral, regional or national economic models) should be developed and systematically used.

Australia’s federal system of government makes co-operation and the sharing of responsibilities on environment a particular challenge for all three levels of government. Australia has made substantial progress in this regard in recent years. Efforts to clarify responsibilities and enhance intergovernmental co-operative action have taken place in the context of the Council of Australian Governments and the Intergovernmental Committee on Ecologically Sustainable Development. This process should continue, based on the principle of addressing each environmental challenge at the appropriate level, and on meeting the need for public information and participation in forming and implementing policies. Australia places considerable emphasis on developing co-operative working relationships among the different levels of government.

It is recommended that consideration be given to the following proposals:

- develop quantitative targets and timetables to further the implementation of the National Strategy for Ecologically Sustainable Development;
- consider improvements in institutional mechanisms to more fully and consistently integrate environmental considerations into economic decisions at all levels of government;
- make greater use of economic analysis in designing environmental policies at both Commonwealth and State/Territory levels;
- consider higher energy taxation as one way of internalising environmental externalities;
- continue to strengthen co-operative working relationships among the Commonwealth, the States/Territories and local government, and explore the most efficient and effective structures for co-ordination between State and local government and among local authorities;
- promote changes in consumption and production patterns by ensuring that prices fully reflect costs, including environmental costs (e.g. for water and energy), and by providing appropriate environmental information to the public;
- accelerate the greening of government operations.

### ***Integration of environmental concerns in the mining industry***

Australia is mineral rich, with a great diversity of deposits. The mining industry plays a major role in Australia's economy, producing over one-third of the value of its export earnings. Mining is a cyclical industry, driven by international markets; the prices of minerals and costs of production remain key factors in the economics of deposits. However, environmental considerations and the costs of environmental management are increasingly important in determining the competitiveness and viability of mining projects.

In recent years, much progress has been made in promoting sound environmental practices within the mining industry, and in incorporating the principles of sustainable development into environmental or mining legislation. Regulations have been extended and upgraded across Australia, notably with respect to environmental requirements for exploration, during mining operations and after the closure of a mine. To ensure that mines are not left derelict and unrestored after closure, the use of performance bonds to cover rehabilitation costs, an innovative and promising economic instrument, has been introduced. Voluntary approaches (both government-industry agreements and industry-only initiatives) are also helping promote better environmental performance. Notable examples include the Australian Minerals Industry Code for Environmental Management and the Best Practice Environmental Management in Mining publications, which have become influential in Australia and beyond. Major improvements in corporate environmental management are visible at all stages of many mining operations. The mining industry has increased its environmental expenditure, though on average this still amounts to less than 1 per cent of the industry's income. Commonwealth and State/Territory authorities have helped reduce the environmental controversy often surrounding mining operations by developing information exchanges and linking the regulatory process to consultations with groups of stakeholder representatives.

Nevertheless, conflict persists, notably where exploration and mining are proposed in sensitive areas. In such cases, criticism may reflect a lack of faith in the objectivity of the regulatory process, fuelled by limitations on public access to relevant, comprehensive and timely information. Industry and public authorities need to further build credibility through continual commitment to sound environmental practices, including public consultation and disclosure of information, and especially through demonstrable results. Concern is expressed in Australia regarding the environmental assessment and approval processes at State/Territory level, notably the lack both of a set time limit for consideration of applications, and of standards for the content and procedures of environmental assessments and licence conditions. Several specific mining objectives set in the 1992 National Strategy for Ecologically Sustainable Development have yet to be met, notably with respect to community involvement and mine rehabilitation. The problems posed by Australia's legacy of abandoned mines are being addressed in a piecemeal fashion, without any clear knowledge of their overall extent and nature, or of the priorities and resources needed for rehabilitation.

It is recommended that consideration be given to the following proposals:

- continue to promote sound environmental practices within the mining industry; in particular, ensure the adoption of such practices by smaller mining operators, and monitor their implementation in all jurisdictions and across industry;
- further improve community consultation and information during exploration and mining approval processes and during mine operation, and ensure full public access to environmental information, by stimulating environmental reporting by companies to the public;
- develop an inventory of old mine sites across Australia as a basis for a strategy in which priorities for and expenditure on remediation can be clearly defined;
- develop mineral planning frameworks at Commonwealth and State/Territory levels, including regional ones where appropriate, to clarify issues related to access for exploration and mining, and to the sustainability of mining in areas where there is a need to balance resource use and conservation;
- harmonise the content, methodology and time-frames of environmental assessment and approval procedures and appeal procedures, ensuring that all levels of government agree upon and adhere to them; provide local government with access to technical expertise to provide assistance in reviewing mining proposals and co-ordinating permit conditions.

### **3. International Co-operation**

During the 1990s, Australia has considerably stepped up its involvement in international environmental co-operation, and it is now in the forefront with active participation and significant initiatives on environmental protection in regional and global forums. Until recently, international issues were mostly in the hands of the Commonwealth Government, but new procedures involve State Governments much more in international negotiations. The new spirit created by the 1992 Intergovernmental Agreement on the Environment should lead to an expansion of efforts to implement Agenda 21 at both State and local levels.

#### ***Achievements***

Concerning bilateral and regional co-operation, Australia has close environmental co-operation with New Zealand (in the framework of the Australian and New Zealand Environment and Conservation Council) and with Papua New Guinea. Australia has been actively promoting sustainable forest management in the South Pacific and Asia-Pacific regions. It has taken the lead in protecting Antarctica, banning mining and protecting fauna and flora there. Australia has helped South Pacific countries establish a large nuclear-free zone and has given them considerable development aid to protect their environments. Australia was an active supporter of the establishment of the Southern Oceans Sanctuary for whales.

Concerning worldwide commitments, Australia has given great attention to implementing nature protection conventions, particularly the World Heritage Convention, which covers the Great Barrier Reef Marine Park, the world's largest marine protected area. Australia has taken an exemplary position on a number of domestic biodiversity issues, and in advancing towards international objectives such as the protection of migrating birds. Programmes to protect the ozone layer have been implemented very effectively, ahead of international target dates, and with full participation of States/Territories and industry. Industry has voluntarily contributed towards the costs of efforts on phasing out ozone-depleting substances and oil spill preparedness. Considerable effort has been made to implement all environmental conventions dealing with maritime shipping. Concerning aid, Australia's system of environmental auditing of development assistance proposals is one of the most thorough in the world.

### *Areas for progress*

Most of Australia's international achievements are fairly recent. Much remains to be done to implement broad national strategies, especially when there are conflicts among groups of economic actors or between economic development and nature conservation. Australia has been slow to join the international liability and compensation regime in case of oil spills, and it ratified the London Convention with some delay. It was one of the few OECD countries to ask for a two-year exemption on the banning of industrial waste disposal at sea. While Australia now strictly controls exports of hazardous waste for disposal, it only recently began such controls on recyclable hazardous waste.

In the area of official development assistance, Australia is still committed to the UN target of 0.7 per cent of GNP, but its actual aid is decreasing and is now at 0.27 per cent. There has been significant growth in environmental aid since 1992, at the expense of other aid programmes.

Australia's achievements related to climate change appear likely to fall short of the country's initial goal to stabilise greenhouse gas emissions at 1990 levels by 2000. CO<sub>2</sub> emissions have increased since 1990, and, as in many other OECD countries, they continue to do so because the most effective measures either are not applied or will take a long time to produce effects. Furthermore, Australia, with its abundant cheap fossil fuel resources, has special circumstances as a large exporter of fossil fuels and energy-intensive products. Once the objectives of Australia's climate change policy are more clearly defined, it will be possible to assess whether the current voluntary measures promoted by the Commonwealth Government are adequate (considering that it is at State and local government level, and by industry and citizens, that they need to be implemented).

It is recommended that consideration be given to the following proposals:

- deepen bilateral and regional co-operation to better protect the environment, notably in the area of land-based sources of marine pollution;
- expand efforts to protect the marine environment, and to promote sustainable development in coastal areas, through co-operative action among relevant authorities;
- increase the volume of environmental aid to developing Pacific and Asian countries, with a view to helping them carry out more fully their responsibilities under global and regional conventions;
- further develop policy guidelines, programmes and objectives on Australia's response to the challenge of global climate change, and make greater use of regulatory measures and economic instruments to enable Australia to meet cost-effectively its current and future targets concerning climate change.