

UNITED STATES

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CONCLUSIONS AND RECOMMENDATIONS*

The United States responded at an early stage to pressures on the environment from economic activities and to public awareness of environmental problems by creating institutions with specific environmental responsibilities. Its size and the attendant diversity of environmental conditions, its federal structure and the varying institutional arrangements among the 50 states constituted a challenge when it came to creating a "level playing field" across the country with respect to environmental regulations. The response has been a set of federal rules, specific to various issues (e.g. nature protection, air quality, water quality, waste and contaminated sites), to be implemented by the states under federal oversight.

There has been comparatively less emphasis on issues of natural resource use; the United States remains among the world's largest users of energy and water on a per capita basis. Many of today's pollution sources and effects are less visible to the public, yet no less hazardous for public health and ecosystems. The challenge for the United States is to: *i*) implement more cost-effective environmental policies to address remaining issues; *ii*) better integrate environmental concerns in economic decision making; and *iii*) continue to actively support international co-operation to protect the environment. The task must include strategies that can encourage a transformation of existing production and consumption patterns to make them contribute to the nation's sustainable development objective. This will require an increased effort from all sectors of society.

This OECD report sets out the baseline for assessing future environmental progress, and it examines the environmental performance of the United States: the extent to which government policy objectives are being met. This assessment includes both domestic objectives and international commitments, and is based on environmental effectiveness and economic efficiency criteria. A number of recommendations are put forward that could contribute to further environmental progress in the United States.

1. **Implementing Environmental Policies**

Achievements and cost-effectiveness of environmental policies

Laws and regulations of a "command and control" type were used over the 1970s and 1980s as the main instrument to implement US environmental policies, on an issue-by-issue basis. They proved very effective and led to a number of achievements, in a context of high public environmental awareness and varied environmental NGO initiatives. They contributed to the decoupling of economic growth and emissions of important pollutants, such as atmospheric emissions of SO₂ and lead. In a number of cases, the country as a whole and some states have been world leaders in standard setting (e.g. cleaner cars in California). Overall, compliance is high and enforcement is strong; public participation and access to environmental information can be seen as models in many respects; more than in any other country, the environmental agenda has benefited from strong environmental science and research. Although significant expenditure has been devoted to environmental protection (over \$120 billion in 1992), there is no evidence that the economy has been adversely affected as a whole by strong environmental protection policies. The private sector is showing an increasingly proactive attitude towards environmental protection and sustainable development and is seizing opportunities offered by new and fast growing markets for environmental goods and services.

Still, urban, industrial and agricultural activities continue to exert pressure on the environment: a significant proportion of rivers and lakes remain unsuitable for swimming and fishing, a sizable fraction of the US population is still exposed to air of unsatisfactory quality, the decline in the area of wetlands has not yet been halted and the number of threatened and endangered species is still growing. These pressures are partly caused by consumption patterns based on low-density housing, extensive use of the motor vehicle, high resource use (energy, water) and high generation of waste. As long as they are not reduced, conditions will not be favourable for sustainable development. Reversal of current trends will require an increased effort from all sectors of society. A change to more environmentally and economically cost-effective and integrative sectoral policies will be necessary to moderate the increase in environmental expenditure.

Environmental policies themselves are now therefore at a crossroads in the United States, not because there is less or more environmental concern than ten years ago, but because new and alternative approaches to policy development and implementation appear desirable. In fact, new environmental policies are already under way. They promote: *i*) licensing procedures for major polluting installations based on pollution prevention approaches; *ii*) partnership with stakeholders (e.g. industrial branches, environmental NGOs); *iii*) place-based and ecosystem

* Conclusions and Recommendations approved by the Group on Environmental Performance at its November 1995 meeting.

management; and iv) goal setting and performance-oriented accountability. These policies continue to emphasise cost-benefit and risk analysis, probably more than in any other OECD country. Special attention is given to environmental justice, the idea that a disproportionate environmental burden is often placed on minorities, low-income people and Native American communities.

These changes in environmental policies are expected to bring significant gains in environmental effectiveness and economic efficiency to address the environmental issues of the 1990s. This will be even more the case if they are supported by more extensive use of economic instruments and voluntary agreements, in conjunction with regulation. Some of these instruments are already in use (*e.g.* trading mechanisms for emission permits or allowances, a CFC tax, voluntary programmes and agreements). However, expanded use of fees and charges to get the prices right for natural resources such as water and energy, and a review of financial assistance schemes, should receive higher priority.

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

- streamline the environmental regulatory system and promote a performance-based approach while maintaining health and environmental standards;
- continue the introduction of strategies based on ecosystems;
- implement environmental policies at least cost for the government and society as a whole and call upon inputs from all stakeholders;
- set new health and environmental standards in a consistent way, bearing in mind the costs and benefits of achieving them;
- in laws and regulations, avoid approaches that easily generate costly litigation, court actions or reviews;
- strengthen co-operation between government institutions and the private sector, building upon such approaches as the Common Sense Initiative;
- continue using market-based instruments in association with regulatory instruments and others, such as voluntary agreements; expand the use of pollution charges to improve economic and environmental effectiveness;
- review government financial assistance for the provision of environmental services (*e.g.* direct and indirect subsidies, preferential loans, tax incentives) in the light of the polluter pays principle and the user pays principle; in particular, examine subsidies on sewerage, waste water treatment and irrigation, and grazing on public lands;
- examine pricing policies or tariff structures for such key natural resources as energy, water and grazing lands, to ensure that they take environmental considerations into full account; to this end, a review of any financial assistance schemes that might lead to overuse of resources would be useful.

Ecosystems

Long-standing and effective efforts by governmental and non-governmental organisations to conserve both natural habitats and species have achieved very positive results. The United States possesses an extensive system of national parks that is well managed and still being expanded; many terrestrial and marine protected areas at state and local levels have also been established. As a result, about 10 per cent of the total area is covered by some degree of protection. Several hundred recovery plans have been adopted for threatened and endangered species, as well as for other important wildlife species; the measures taken have allowed some depleted populations to recover and sometimes to widen their geographical range. The integration of environmental considerations into farm policies has slowed soil erosion and habitat loss caused by conversion to agricultural uses. More sustainable forestry practices have been introduced, mostly on federal land, as in the Pacific Northwest. Habitat restoration efforts (*e.g.* for wetlands and prairies) have also had some success. The United States has been active in international co-operation; for instance, on North American waterfowl and North American wetlands, and under the Ramsar and Washington conventions. The ecosystem management approach increasingly being adopted, for example in Chesapeake Bay and the Everglades, will also help better protect US biodiversity.

Despite these achievements, however, the effects of economic development continue to place heavy pressures on the natural environment. Habitats are still being reduced or degraded in many parts of the country and in coastal areas. Even for wetlands, which have been given special attention over the last decade, the "no net loss" policy goal is not yet being achieved. Concerns remain on the sustainable use of public lands. A consistent system to provide information on the many categories of protected areas is also lacking, particularly for areas outside federal management: state, tribal, local and private protected areas. Many more species are declining than are improving, particularly freshwater species, migratory birds and some birds of prey. Protection measures in place are increasingly questioned on grounds that they interfere too much with certain types of development. A number of stocks of marine fish species have

been declining. Knowledge of less visible species is lacking in a number of areas. The large number of separate programmes for sometimes highly specific purposes makes overall co-ordination difficult; on the whole, the efforts of the different agencies appear fragmented. While there are some individual policy goals for wetlands and for endangered species, there is no overall set of national objectives for biodiversity.

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

- develop and adopt a co-ordinated set of biodiversity objectives for habitat and species;
- strengthen co-operation on the part of federal agencies, state, tribal and local governments, private landowners, business, voluntary organisations and the general public to promote biodiversity;
- further strengthen habitat restoration efforts;
- pursue and develop the ecosystem management approach, including on public lands;
- use compensatory economic instruments to improve protection of species and habitats in certain areas, while allowing further land development in others;
- integrate further environmental and nature protection concerns in agricultural and forestry policies to promote farming and forestry practices that provide environmental benefits, in particular with respect to preserving biodiversity and preventing and controlling pollution from agrochemicals;
- strengthen co-ordination among federal agencies with responsibility for improving knowledge concerning land use, coastal areas and biodiversity trends.

Water

The 1972 Clean Water Act has been used very effectively in reducing point discharges: from 1972 to 1994, the number of people served by secondary or better levels of sewage treatment nearly doubled, to 163.7 million or 64 per cent of the population. A rigorous, nationwide compliance assurance system enforces permit conditions. Municipal and industrial waste water treatment plants are mostly large, well-managed units with permit compliance rates of over 90 per cent. Good performance can also be seen in the management of municipal sewage sludge: about 90 per cent of composted sludge is suitable for spreading onto agricultural land, proof of the effectiveness of the pre-treatment of industrial effluent discharged into municipal sewers. Attention is being given to environmental justice (*e.g.* provision of basic water services to colonias in Texas and New Mexico). A comprehensive range of nationwide programmes by all federal water management agencies supports and brings consistency to state and local activities.

In spite of progress in improving water quality, 40 per cent of assessed rivers, 45 per cent of assessed lakes and 33 per cent of assessed estuaries are not supporting their designated uses and the goal to make all waters "fishable and swimmable", originally set for 1983, has still not been achieved. The main pollution sources requiring further action are diffuse sources such as agriculture, overflows from combined sewer and storm water outfalls. In the next few decades much of the ageing water supply and waste water treatment infrastructure will need to be replaced or upgraded, implying significant investment expenditure.

The United States has the highest per capita water withdrawal in the OECD. Agriculture accounts for 85 per cent of total consumptive use; in arid and semi-arid regions the figure is even higher. The availability of water is a constraint on sustainable development in some regions. Protection of in-stream flows has generally been weak and has allowed many rivers to become overallocated, leading to harm to aquatic ecosystems. The price of water is low, often leading to inefficient use.

The widespread use of financial assistance and the absence of consistent policies on charging for water resource use (either for taking water or for discharging pollutants) show that to date the application of the user and polluter pays principles has been limited, in most areas. The permitting system has become very labour-intensive and unwieldy, and in all parts of the country there is a substantial backlog in renewing permits; recent moves to "reinvent environmental regulation" respond to these concerns.

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

- strengthen the application of the user pays principle to promote more efficient use of water for agricultural and other uses; include all Safe Drinking Water Act compliance costs in water prices;
- increase prices of irrigation water to better reflect long-term marginal costs of providing further water supplies in areas facing water shortages;

- strengthen the application of the polluter pays principle to achieve further reductions in point and non-point pollution discharges; examine the use of economic instruments to reduce non-point agricultural pollution;
- move towards a greater use of public-private partnerships in water supply and waste water treatment services as part of the renewal of ageing water infrastructure; consolidate smaller water supply utilities to achieve economies of scale in meeting safe drinking water standards;
- use the whole-watershed approach to:
 - integrate measures to reduce non-point pollution of both urban and agricultural origin;
 - protect in-stream flows from excessive withdrawals;
 - identify aquatic habitat requiring protection from the effects of hydraulic engineering works;
 - protect, in partnership with landowners, high-value wetlands and estuaries identified in wetland conservation plans;
 - integrate flood plain management, land use and water policies.

Waste

The waste management approach has achieved significant results, principally through implementation of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Due to waste reduction, reuse and recycling, quantities of municipal solid waste being incinerated and landfilled have been reduced: the proportion of waste recovered tripled between 1970 and 1993 and now stands at about 22 per cent, a figure that nonetheless is low among OECD countries. The goal of ensuring cradle-to-grave management of waste so that humans and the environment are protected is broadly being met. Municipal waste is now mostly disposed of in lined landfills, incinerated or composted; unsound disposal operations have been shut down. Strong enforcement of rules and regulations has been the basis for waste management successes to date. Reductions in hazardous waste generation appear to be substantial. Disposal is now carried out in an environmentally sound fashion. Many contaminated sites have been identified and clean-up is proceeding. Underground storage tanks are being converted to prevent future threats, and problems of the past concerning such tanks are being dealt with fairly expeditiously. Environmental justice issues are now being taken into account in all waste management activities.

Nevertheless, the United States still records the largest per capita generation of municipal waste in the OECD, and since 1980 growth in per capita generation has been almost exactly in line with growth in per capita GDP. Considering that only a small fraction of the funds spent on waste management at all levels of government is devoted to waste reduction, and in view of the benefits achievable, present efforts in waste reduction still appear too small. Enforcement of waste management regulations has become very procedural in nature; the Common Sense Initiative, with its emphasis on a more performance-based approach, could aid greatly in this regard. Much effort and expense is devoted to pursuing the goals of identifying and cleaning up abandoned and uncontrolled sites: it is estimated that current policies will lead to an overall clean-up cost of over \$4 billion per year for the next several decades. Progress has been slow, and transaction costs are high. Hence, while the United States seems to be meeting its objectives for waste management, it may be paying too much for the benefits arising from clean-up.

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

- simplify RCRA regulations and promote a more performance-based approach while maintaining health and environmental standards; amend the legislation to reduce ambiguity in the definitions of "waste" and "hazardous waste";
- increase waste reduction efforts through, *inter alia*, voluntary agreements for priority waste streams, promotion of cleaner technology, adoption of producer responsibility rules and an increase in technical assistance and training to small businesses;
- make greater use of economic instruments to influence consumer behaviour;
- accelerate CERCLA clean-up processes and reduce the associated transaction costs;
- accelerate clean-up activities at federal facilities;
- expand the currently limited RCRA management on tribal lands;
- control import and export of hazardous waste to give effect to principles included in the Basel Convention.

Air

Since the 1970s, significant progress has been made in reducing emissions of most conventional air pollutants. Lead emissions have dropped by 88 per cent since 1984. SO₂ emissions decreased by 18 per cent between 1980 and 1993, VOC emissions also decreased and NO_x emissions have stabilised. Reflecting the decrease of emissions, ambient air quality shows general improvement for conventional pollutants. Under the Clean Air Act, the United States has adopted national ambient air quality standards and implemented regulatory measures on stationary and mobile sources that have proved effective. The United States has been a front runner in the fields of hazardous air pollutants and indoor air pollution. The Acid Rain Program's SO₂ allowance trading system and the regional (multistate) NO_x trading system are examples of the pioneering work being done in the United States on the development and practical implementation of emission trading. The experience will prove instructive to many other countries.

Nevertheless, the United States has today some of the highest emission rates per capita and per unit of GDP among OECD countries for CO₂, SO₂ and NO_x, and one of the most energy-intensive economies. While it has decoupled economic growth and air pollution to a certain degree over the past 25 years, the overall trend has not been as strong as in many other OECD countries. Problems remain with ground-level ozone and with deposition of airborne pollution such as acid precipitation and fine particulates, and related health and welfare damage. Ambient air quality standards are not always met in many metropolitan areas and about 60 million people lived in non-attainment areas for one or more criteria pollutants in 1993. Because of the complexity of federal-state-local government relationships, and of procedures regulating pollutant emissions, the process of implementing regulatory policies has involved high transaction costs to both regulatory agencies and regulated industries.

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

- complete the formulation of State Implementation Plans, and fully implement them;
- monitor the results of various forms of emission trading systems and explore the possibilities for expanding their use, including for pollutants from mobile sources, and examine reductions in transaction costs incurred by regulators and regulated industries;
- consider the use of other economic instruments, particularly energy taxation and road pricing;
- remove environmentally unsound subsidies, such as direct and indirect subsidies to coal-fired power plants and to road construction;
- accelerate the development of standards for air toxics;
- promote the integration of air pollution concerns in relevant sectoral policies, especially energy and transport policies;
- promote activities to improve energy efficiency and clean energy technology.

2. Integrating Environmental Concerns and Economic Decisions

The integration of environmental concerns into economic and sectoral decision making is key to improving environmental performance and moving towards sustainable development. Policy integration is also essential to achieve cost-effectiveness in responses to environmental challenges. This is because economic forces and changes in such major economic sectors as transport, energy, manufacturing, agriculture and forestry strongly influence environmental conditions and trends, and thus can either enhance or counteract the benefits of environmental policies and technical progress.

Strengthening institutional integration

In most cases, the focus of US environmental policies is still on separate issues rather than on comprehensive policies, and on remediating environmental deterioration rather than on preventing such deterioration through actions addressing its underlying causes: urban sprawl, energy use, consumption patterns, etc. Integration should receive increased attention in the United States.

The President's Council on Sustainable Development is exploring this area. EPA's first Five-Year Strategic Plan and its work on environmental goal setting are important new initiatives. Co-operation among various federal departments and agencies in the environmental field is growing, despite the scattered structure of environmental law. In some cases, as for trade and environment, special interagency co-ordination bodies have been set up. Further efforts will be needed to promote government-wide environmental action, involving all relevant federal agencies.

The May 1995 accord between EPA and the states on a National Environmental Performance Partnership System and the March 1995 act concerning "unfunded mandates" will contribute to a new balance between a uniform federally defined, level playing field with respect to environmental regulations and more decentralised and varied environmental policies.

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

- design a process for discussion of the findings of the President's Council on Sustainable Development and invite all citizens to share in responsibility for adopting more sustainable patterns of production and consumption; in particular, assess the consequences on the environment and sustainable development of current patterns of transport, energy use, housing and urban sprawl;
- consider making the national environmental goal-setting programme an interagency responsibility, with appropriate consultation and support of major stakeholders about these goals; continue to ensure co-operation with state governments on the review of their environmental performance;
- develop a complete and reliable environmental information structure to produce more policy- relevant environmental information and indicators (national reports on the state of the environment; national and state environmental indicators relative to selected environmental goals) and to ensure centralised access to environmental data;
- develop more environmentally sensitive local land use planning, taking into account effects of transportation and energy consumption, in order to support sustainable development strategies and the protection of landscape and nature;
- promote environmental management in private companies (through, for instance, independent auditing) and within government operations.

Sectoral integration: transport

Transport plays a key role in the United States, linking social and economic activities in urban areas and over the country's vast territory. The use of cars and trucks, in particular, causes significant air pollution and other environmental problems. Initially, the response focused on the technical regulation of individual vehicles: stringent emission standards requiring cars to use three-way catalytic converters went into effect as early as 1981; fuel efficiency standards on new cars were strengthened by 50 per cent between 1978 and 1985. These measures proved successful in reducing vehicle-related emissions of CO, VOCs and NO_x against a trend of increasing vehicle traffic. Lead emissions were drastically decreased by the growing use of unleaded gasoline and the reduction of the lead content in leaded gasoline. Trains and ships carry a large share of freight transport, particularly large volumes of bulky materials over long distances; investment by rail companies in intermodal transport has been effective in sustaining rail's share of freight transport. In the early 1990s, further measures to reduce emissions of individual vehicles were taken. Emission standards for passenger cars have been tightened since 1994. Inspection/maintenance programmes will reduce emissions from older vehicles. The formulation of gasoline is being changed. A programme to introduce lower-emission vehicles using alternative fuels has been started, but has yet to show results. Greater flexibility in the use of federal funding for public transport planning and projects enables the inclusion of air pollution concerns in funding decisions.

However, the United States has not succeeded in controlling the growth of vehicle traffic. In the absence of more stringent emission standards and/or growth in the clean fuel fleet, total mobile source emissions, now fairly stable, are likely to rise again after 2005 with further increases in vehicle traffic volume. The total number of passengers using mass transit is very limited. Traffic measures such as high-occupancy vehicle lanes and car pooling did not prevent the increase of motor vehicle use. The heavy reliance on the car is encouraged and supported by the very low cost of vehicle use, which does not reflect true costs, including environmental costs; fuel prices in the United States are among the lowest in the OECD and many employees are provided with free parking. The use of off-road vehicles is still largely unchecked and control of their emissions is only beginning to be required. If the United States wishes to avoid incurring ever higher costs of vehicle use, such as pollution and congestion, measures to contain or reduce private vehicle use should be an essential element of long-term environmental and transport strategies.

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

- fully implement measures provided by the Clean Air Act to reduce vehicle emissions, including emission standards, fuel improvement and inspection/maintenance programmes;
- consider economic instruments to reduce vehicle traffic, such as increased fuel taxation and the elimination of free parking for employees;

- strengthen measures to reduce truck emissions and to promote more efficient and less polluting freight transport;
- strengthen efforts to sustain and improve public transport;
- strengthen federal-state-local co-ordination and provide stronger support to metropolitan planning organisations and cities;
- pursue integration of transport policy and land use policy to encourage higher-density development in suburban areas and to link public transport and activities requiring mobility;
- strengthen education and information to increase public understanding of the environmental problems inherent in vehicle use and the necessity of reducing it;
- continue R&D to develop lower-emission and more energy-efficient vehicles.

Sectoral integration: chemical industry

The United States has developed comprehensive approaches to the management of chemicals, comprising regulations for the control of pesticides and new chemicals, broad policies to manage existing chemicals in general and measures to reduce risks from specific chemicals and activities of the chemical industry. It has developed an advanced system to analyse and assess structure-activity relationships, allowing the assessment of new chemicals in the absence of test data. The United States was also one of the first OECD Member countries to develop a significant programme for testing and assessing existing chemicals. The Toxic Release Inventory has proved a useful tool in stimulating the abatement of releases of chemicals to the environment. It is expected that the chemical industry will meet the targets of the 33/50 Program. Concerning specific substances such as asbestos and lead, the United States took vigorous measures to prevent health damage. Thanks to a variety of environmental regulations and the increased responsibility of management for environmental issues, the chemical industry has made major environmental progress.

Despite these achievements, a number of problems remain. The broad definition of new chemicals requiring notification and the absence of test data in most cases have placed a significant burden on EPA for assessment activities. Most chemicals in commerce are existing chemicals, yet the extent of EPA efforts dealing with the testing and assessment of these chemicals pales beside the workload for new chemicals. There are no clear time targets for the existing chemicals programme. The procedures for risk management for such substances as lead and asbestos under the Toxic Substances Control Act are complicated and time consuming. Safety measures for pesticide application are not yet sufficiently accessible to agricultural workers and their application needs to be assured. Co-ordination and integration of the existing chemicals programme with other government programmes, such as those dealing with water and air pollution, need further improvement. The same holds for co-ordination among federal, state and local activities. Industry feels that further improvement of environmental performance can be achieved at reasonable cost only if regulations become more flexible.

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

- simplify the pre-manufacturing notification system for new chemicals by further limiting the number of chemicals involved, and should be further improved by the addition of some test requirements;
- improve the effectiveness of the review programme for existing chemicals by strengthening co-ordination with other environmental programmes and further defining goals to be reached within certain time frames;
- continue federal and state authorities' efforts to ensure that pesticide safety information is fully accessible to, and fully used by, workers in agriculture;
- further improve co-ordination of chemical management activities at the federal, state and local levels;
- develop procedures that give more flexibility in taking action towards environmental goals for certain types of industry.

3. International Co-operation

Since the early 1970s, the United States has been in the forefront of international co-operation to protect the environment. It initiated negotiations on, and has entered into, a very large number of bilateral and trilateral agreements in North America. It also initiated broader multilateral agreements to deal with pressing regional or global issues. US leadership over the years has been demonstrated by, *inter alia*, its promotion of: environmental issues in international forums, the use of EIA in international financial institutions, recognition of environmental and trade issues, and the use of tradable emission rights. The United States has promoted new approaches in international environmental diplomacy based on scientific research and technological innovations, openness in information, public participation and accountability of governments to present and future generations. It has been very active in promoting sound

environmental practices in many countries and in providing technical assistance and aid to developing countries and to central and eastern European countries. Overall the US performance in the area of international environmental co-operation over the past 25 years has been outstanding.

The United States has helped in the adoption at international level of many innovative policies and measures already accepted at domestic level. This approach would become less fruitful to solve new international environmental issues if the measures implemented in the United States were to be less strict than those proposed or already implemented in other countries. If the United States successfully promotes international environmental agreements but does not subsequently ratify them, the United States will have a less influential role in promoting better protection of the global and regional environment through multilateral action. This would also diminish US credibility in future negotiations and could lead other countries to refrain from completing action on mutually agreed conventions.

Achievements in North America

Co-operation between the United States and Canada has a long history. Concerning boundary waters, the US-Canada relationship has been for decades a striking example used by many other countries. Significant progress has been achieved in pollution abatement in the Great Lakes and more progress is expected. A strong programme was recently launched to reduce transboundary air pollution and acid precipitation, with targets to be reached by 2000.

Great progress in co-operation with Mexico has lately been achieved. Many working groups have been established to harmonise approaches and solve co-operatively the acute problems in border areas. An Integrated Border Environmental Plan has been launched and its first phase implemented. The United States has made major investments for water sanitation. Improvements in environmental quality in border areas will take several years to be visible.

In the framework of the North American Free Trade Agreement, the United States, Mexico and Canada have entered into a trilateral agreement on environmental co-operation that should help better protect the environment of all three countries. The new institutions under this agreement have the potential to play a very significant role.

Other international achievements

The United States has been very active in promoting protection of the ozone layer and has introduced domestically innovative instruments to meet internationally agreed targets. It adopted a commitment to return emissions of greenhouse gases to their 1990 level by 2000 and a major action plan to cope with climate change issues and improve energy savings.

The country has been very active in promoting protection of the marine environment in the framework of IMO and UNEP. It directly inspired a number of international conventions in this area. New initiatives are being launched concerning the Gulf of Mexico and the Caribbean.

The United States was the first country to promote environmental impact assessment to evaluate the effects that federal activities carried out on its territory had on the global commons and on the environment in countries not participating in the activities. It has promoted a similar approach in multilateral financial institutions and in assessing the effects of trade agreements on the US environment.

Its leading position in the area of international environmental co-operation should have important consequences for its financial involvement to solve international environmental issues. The principle of common but differentiated responsibility means the United States has to maintain a significant level of efforts both at home and internationally to protect the environment. As the United States is the source of a large amount of transboundary or global pollution, costly activities have to be financed to reduce these. The concept of joint responsibility of all OECD countries concerning the solution of global environmental problems cannot be taken seriously if disparities among the burdens supported by the OECD countries are too great.

Areas for progress

Despite the considerable progress so far in co-operative activities with Canada and Mexico on issues arising in border regions, many tasks remain uncompleted, e.g. virtual elimination of discharges of persistent toxic substances in the Great Lakes, further reduction of acid precipitation in north-eastern states and better air and water pollution control

in regions bordering Mexico. It is not clear whether economic development in the Mexican border area similar to what has taken place in the last ten years can be sustained into the future. Further federal and state funding may be required; increased use of economic instruments should help shift more of the financial burden to polluters; the polluter pays principle, endorsed by all three countries, should be further developed and applied in border areas, bearing in mind, where necessary, differences in national ambient standards and levels of development.

The United States has a very important international role to play by reducing its own emissions of greenhouse gases, especially CO₂: its progress or lack of progress in this area is likely to have a strong influence on progress in other OECD countries. Reliance on voluntary measures may not be sufficient to significantly modify long-established production and consumption patterns, based on abundant and cheap energy, and to stabilise CO₂ emissions at the 1990 level.

The United States has used a series of trade measures to foster greater environmental protection in other countries. More caution may be needed in the future to ensure that such measures are not inconsistent with international trade agreements and are in line with decisions taken in the context of international agreements.

In many areas, such as environmental aid, US expenditure is higher than that of most OECD countries for environmental protection in developing countries; but in relative terms the US effort may be seen as much less significant. This is not always the case, however; along the Mexican border, the US financial effort has been particularly large. The United States should consider whether a further reduction in its financial commitments for aid to developing countries as well as for environmental activities, as currently discussed, would not undermine its position as a leader on environmental issues in these countries.

Many reports have been prepared to describe the United States's international activities, but few analyse actual results and there are few indicators of achievements or measures of success. Financial support for international environmental activities might be enhanced if there were better indications that the funds spent so far have led to significant results.

Recommendations on international co-operation

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

- ratify and implement recent international agreements on environmental protection that have been adopted by most Member countries (Annex III) and, in some cases, have been signed or promoted by the United States, particularly the UN Convention on Biological Diversity and the UN-ECE conventions on environmental impact assessment and industrial accidents;

Regional issues

- give more attention to achieving the goal of virtual elimination of persistent toxic substances in the Great Lakes, taking into account releases in air and water;
- assess whether a further reduction of acid precipitation in north-eastern states is needed, bearing in mind health effects linked to small particulate matter;
- review the achievements of the two-year Integrated Border Environmental Plan for the US-Mexican border area and identify remaining needs to help in the move towards sustainable development; prepare a five-year plan for this area with goals and targets, an outline of project costs, an analysis of expected benefits and an indication of financing sources;
- give particular attention to activities aimed at protecting the Gulf of Mexico and the Caribbean;

Other international issues

- promote new international agreements for protection of the marine environment, including control of pollution from land-based sources and ships, and protection of coral reefs;
- closely monitor activities aimed at reducing domestic emissions of greenhouse gases, show leadership in reducing energy wastage and take further steps, as need be, to reach domestically and internationally agreed targets on greenhouse gas emissions;

- contribute to the further development of conditions under which trade measures can be used to protect the environment in the framework of international agreements or organisations;
- strengthen bilateral and multilateral aid programmes for solving global environmental issues;
- promote wider public support in the United States for activities aimed at solving regional or global environmental issues.

