MEXICO

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CONCLUSIONS AND RECOMMENDATIONS*

Achieving sustainable development is an economic, social and environmental challenge for Mexico. The country's economic development has to be sufficient to support a population that has grown at a higher rate than GDP over the past 15 years and that now numbers 94 million. A sizable population of rural and urban poor, who suffer disproportionally from public health problems partly caused by environmental degradation, coexists with a modern consumer society in a dual economy. Economic activities have generated intense pressures on the environment, including high levels of pollution and, in a number of instances, unsustainable use of natural resources. Environmental considerations until recently have not played a prominent role in development in Mexico and consequently the environment has suffered severely in certain areas.

Since the late 1980s, Mexico has engaged in wide-ranging structural reform of its economy, signed the North American Free Trade Agreement (NAFTA) and joined the OECD. The resulting changes, including the 1995 recession and a recovery with high economic growth in 1996 and 1997, provide the broad context for concurrent profound reforms in environmental policies and environmental management intended to reduce pollution and foster sustainable use of natural resources. A single ministry overseeing the environment and nature protection as well as the management of water, soil, forest and fishery resources was set up in December 1994 and has already taken many positive initiatives. But most of these are too recent to show results as yet.

For the immediate future, the challenge is to: i) thoroughly implement these new environmental policies, achieving realistic objectives and extending environmental infrastructure; ii) further integrate environmental concerns in economic and social decisions; and iii) meet international environmental commitments.

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

1. Implementing Environmental Policies

Overall, Mexico has taken the measure of the challenge that must be met if it is to reverse the severe environmental degradation confronting it. In the last few years, it has undertaken fundamental environmental reforms and launched new policies and programmes that are going in the right direction and in many ways are exemplary.

However, it will take time as well as considerable and sustained effort for these new measures to be firmly embedded in environmental management practice. Ensuring funding and continuity in the implementation of the reforms at national level will be essential. Putting integrated pollution control into effect will require both a cultural shift on the part of managers, who until now have dealt exclusively with water or air pollution, and an increase in the environmental awareness and know-how of small industry. For decentralisation and devolution to be effective, institutional capacity at state and municipal level needs to be built up progressively, and these lower levels of government must acquire greater financial autonomy for managing their environment. Environmental information and education programmes should be expanded to further buttress these changes.

Environmental reforms

In response to wide-ranging environmental challenges, the Ministry of Environment, Natural Resources and Fisheries (SEMARNAP) has put forward a steady stream of proposals over the past two years to change the way decisions concerning the environment and natural resource management are made in Mexico. There are now many programmes aimed at making development more sustainable. Moreover, the General Law of Ecological Balance and Environmental Protection (LGEEPA) was strengthened in December 1996 with some very significant amendments to encourage major environmental regulatory reform, by: instituting integrated permitting; increasing the economic efficiency of regulation; simplifying administrative procedures; strengthening enforcement procedures; extending

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

mechanisms to improve compliance; furthering decentralisation and devolution; guaranteeing the right to know; and enhancing public participation.

The various environmental plans and programmes are evidence of the serious attempts being made to halt and reverse environmental degradation. Given their great number in many sectors and at all levels of government, however, strengthened evaluation and priority setting may be needed to ensure that they can be implemented effectively and on schedule. In order to promote and assess programme implementation in terms of results, budgets and staffing, it is imperative to put efficient management systems, environmental indicators and monitoring systems into effect.

The historical approach to environmental policy implementation has been one of "command and control"; however, compliance has generally been poor. To remedy that situation, Mexico's environmental enforcement agency (PROFEPA) has promoted voluntary compliance, but also increased efforts to enforce regulations and permits more uniformly and to monitor the major enterprises more closely. While this has resulted in significant progress, there remains a need for the agency to extend its expertise and presence on the ground. Concerning standard setting, regulatory reform has meant turning away from the previous approach of numerous industry-specific effluent and emission limits in favour of a simpler approach, one based on the use and assimilative capacity of the receiving environment. For example, 44 waste water standards were replaced by three standards that set limits based on the downstream use of the receiving water body. PROFEPA has also adopted a new strategy to further improve compliance by strengthening consultation with industry and allowing greater scope for self-regulation. The newly created Pollutant Release and Transfer Register and the System of Indicators of Environmental Law Compliance, which will make emission and compliance data publicly available, can also be expected to improve public awareness and compliance.

Some economic instruments to achieve environmental and resource management objectives have already been adopted. In water management they are well developed, but overall Mexico is trailing other OECD countries. Legal provisions to enable a greater use of economic instruments are in place; there is ample scope to apply such instruments to influence economic choices and provide funding to the central, state and municipal governments for priority tasks. With due regard to equity and poverty issues, appropriate differentiated taxes, air emission charges, deposit-refund systems and/or marketable rights should now be developed. Mexico should use every opportunity to apply the polluter pays and user pays principles, and to finance environment-related public services with the proceeds of fees and charges linked to environmental goods or services. Water resource fees and pollution fees should be collected more consistently.

Mexico makes great use of financial assistance to implement its environmental and natural resource management policies. While this approach mostly conforms with accepted exceptions to the polluter pays principle, it needs to be made clear to enterprises and households that the various forms of financial assistance (e.g. direct subsidies or fiscal incentives) for pollution control are to be eliminated gradually.

Data on public and private environmental expenditure are being collected but will need to be both consolidated and desegregated by level of government and environmental area. In particular, pollution abatement and control expenditure needs to be separated from water supply and natural resource protection expenditure. These weaknesses notwithstanding, pollution abatement and control expenditure can be roughly estimated at 0.8 per cent of GDP.

An increased level of environmental investment will be needed for quite some time to come, together with appropriate mechanisms for priority setting and economic evaluation. Existing water infrastructure must be maintained and rehabilitated; new infrastructure is also needed to support the growing population, particularly for drinking water supply, sewerage and waste water treatment. The collection and treatment of municipal waste and hazardous waste will also require new investment. After years of accumulation and dispersal of contaminants, much clean-up work is needed.

Concerning industry, investments are required to modernise small and medium-sized enterprises and help them deploy cleaner technologies so as to increase the competitiveness and sustainability of the Mexican economy. Meanwhile, however, special programmes have been designed to meet the needs of small and medium-sized firms in environmental protection. In larger firms, voluntary actions to protect the environment are becoming more significant and the use of eco-audits and risk assessments is expanding. A Cleaner Production Centre has been created. R&D on environmental technology is on the rise. Although still small by OECD standards, the environmental sector is

growing and environmental consulting is taking off. Co-operation between government and industry has been weak but has improved lately, partly as a result of the promotion of greater self-regulation of large enterprises.

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

- strengthen the capacity of environmental and educational institutions at national, state and local level to improve environmental information and education;
- develop further environmental quality standards with a view to increasing economic efficiency and enforceability; continue to streamline environmental regulations;
- strengthen enforcement and compliance control by public bodies and carry out these tasks in partnership with enterprises and the users of such natural resources as flora and fauna; continue to promote self-regulation and voluntary compliance;
- expand the use of economic instruments to protect the environment more efficiently and to finance environmental activities;
- continue to promote and closely monitor voluntary agreements with stakeholders (e.g. industry, natural resource users);
- improve collection of and access to environmental data, including on environmental expenditure;
- further develop environmental indicators;
- continue to promote greater public participation in decision making related to the environment, including programme preparation and implementation;
- expand and diversify public, private and international sources of funding for environmental protection; enhance the role of banks in supporting environmental investment, including the provision of soft loans by specialised institutions.

Water

Mexico's natural and socio-economic conditions present water managers with a difficult task in redressing a severe mismatch between water availability and demand, ranging from superabundance in the humid, thinly populated south-east to great scarcity in the arid or semi-arid areas of the populous centre and the cities in the north. In parts of the country, Mexico's water resources are among the most seriously degraded of all OECD countries, particularly in densely populated zones: surface waters and even groundwaters are often contaminated and/or overexploited and water quality in rivers, lakes and aquifers is commonly not fit for many uses. Despite the efforts already made, the contamination of water resources, which particularly affects the health of poor people who do not have access to drinking water of good quality, still poses grave problems.

In response to this challenge, Mexico is engaged in a fundamental reform of its water sector, aiming at achieving sustainable management of its water resources and satisfying the present and future needs of a fast growing population. Impressive progress has been made with the implementation of irrigation management reforms, and independent state and municipal water utilities are being set up to improve the delivery of water services. The regulatory system has been reshaped and now presents a flexible mix of instruments, including resource and pollution fees and progressive water pricing. Real progress is being made towards the targets of the 1995-2000 Water Programme, for example in terms of extending tap water connections, improving drinking water quality, extending access to sanitation and (albeit not yet sufficiently) building waste water treatment plants.

The rehabilitation of the nation's waters will, however, demand a very large, expanded and sustained effort. The new management policies now being put in place constitute a good approach to solving Mexico's water problems, but will yield results only if thoroughly implemented. Much remains to be done to increase the connection rate for sewerage, and less than 14 per cent of municipal and industrial waste water is treated at present. The need for new and upgraded water infrastructure will stretch investment capability for a considerable time to come and priorities for public investments in this area need to be examined in order to maximise social, economic and environmental benefits. Administrative systems are often inadequate for the effective operation of the concession and permitting regulations, and municipal water utilities do not have the capability to invoice all customers. Despite recent improvements, the enforcement of water regulations and permit conditions is still weak; a significant proportion of resource and pollution fees is not collected. The environmental awareness and know-how of small and medium-sized firms needs to be raised considerably, to enable their adoption of water conservation measures and cleaner production processes.

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

- further pursue measures to reduce health risks from contaminated water, particularly in rural areas; extend the existing Agua Limpia programme;
- strengthen the enforcement of water regulations, concessions and permits, as well as the collection of water abstraction and pollution fees;
- complete the management reforms in the areas of irrigation, municipal water services and the devolution of functions to the states;
- strongly pursue measures to improve the efficiency of water use for irrigation and other purposes;
- examine priorities for public investment in water infrastructure and continue setting up public-private partnerships for financing, building and managing municipal water services;
- establish clear performance criteria and accountability mechanisms for all water utilities;
- establish all proposed basin councils and enable them to become strong water resource management agencies (e.g. provide mechanisms to allow them to generate their own financing).

Air

Mexico has taken action to address air pollution challenges with measures including: setting standards and emission limits, increasing and improving enforcement of permit conditions, negotiating agreements with industrial subsectors to reduce emissions beyond the requirements of the law, improving fuel quality, adopting environmental audit procedures, strengthening vehicle standards and emission requirements, and integrating transport and environmental policies. The basis is being laid for a system of emission trading. The four largest metropolitan areas (Mexico City, Guadalajara, Monterrey and Toluca) have adopted air quality improvement programmes that include a comprehensive set of measures on vehicles, fuels and traffic management. The introduction of lead-free gasoline in 1990 has resulted in lower levels of lead in the environment and in residents' blood. In Mexico City, the most noticeable results of the policies adopted to date are the lowering of mean daily peak values, and a decline in the number of days that ambient air quality standards are exceeded for ozone, SO_2, CO and lead. These have been achieved thanks to cleaner motor fuels, the introduction of catalytic converters and enforcement of strict motor vehicle policies. Shifts in fuel use (e.g. from oil to natural gas for power plants and industry in Mexico City) have been achieved through integration of energy and environmental policies.

Nevertheless, in many large urban areas, especially those of Mexico City, Guadalajara and Monterrey, ambient air conditions still pose serious health problems for much of the year. In Mexico City, concentrations of NO_2 continue to rise and the national standard is exceeded nine days out of ten for at least one of the major pollutants. As yet there is no comprehensive nationwide picture of the sources and amounts of pollutant emissions. Many states and municipalities do not have the technical capability and resources to exercise the responsibilities (planning, implementation, enforcement and monitoring) given to them in recent reforms. Most urban centres and industrial corridors need to adopt comprehensive air quality improvement programmes. Despite a welcome move towards self-monitoring and self-reporting, the permitting and inspection system needs to be strengthened and more thoroughly implemented.

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

- continue to strengthen implementation and enforcement of the regulatory system;
- pursue efforts to supplement the regulatory regime with self-reporting, audits and voluntary agreements with specific industrial subsectors (particularly the electricity generation, oil, petrochemical and chemical industries); give special attention to the many "micro" industries in urban areas;
- pursue efforts to prevent and control pollution from mobile sources through national and local programmes; tighten emission limits for new gasoline and diesel vehicles;
- further pursue the introduction and application of economic instruments;
- improve the technical capability of states and municipalities to plan and implement air quality programmes under their jurisdiction, and ensure that the implementation of environmental standards is harmonised across the country;
- identify cost-effective implementation strategies for all states; in major urban and industrial centres, develop integrated air quality improvement plans with clearly defined goals and targets;
- develop a national database of air emissions, including toxic emissions; co-ordinate existing local monitoring systems and develop a national air quality monitoring programme capable of producing

timely and policy-relevant information; pay special attention to risk and exposure assessment and epidemiological aspects of air pollution in metropolitan areas;
- raise public awareness of air pollution issues and implement recently legislated provisions for public access to information, for example by putting the new Pollutant Release and Transfer Register and the System of Indicators of Environmental Law Compliance into effect as quickly as possible.

Biodiversity and natural resource management

Mexico is one of the few countries in the world with mega-biodiversity. It has about 10 per cent of all species known in the world, has the highest number of reptile species, is second in mammalian diversity and ranks fourth for both amphibians and plant species. Mexico has abundant natural resources: forest, soil, water and fish resources. For decades, pressures from economic activities on natural resources have been mounting and most major ecosystems have suffered serious degradation. As a substantial part of the population lives in relative poverty, especially in rural areas close to the country's living resources, Mexico faces the challenge of implementing nature conservation policies while raising the standard of living.

In response to this challenge, Mexico has adopted a comprehensive approach: it has assembled within one ministry the responsibilities for environment, forestry and soil, and fisheries and aquaculture, and has developed new and far-reaching strategies, policies and programmes that are now in the early stages of implementation. After the doubling in the past decade of natural protected areas (now 5.9 per cent of the territory), a new programme aims to further increase the size and representativeness of natural protected areas and improve their management. Some species protection measures are showing positive results (e.g. monarch butterfly, Berrendo antelope, dolphins, sea turtles) and more are being implemented or prepared. Enforcement of area and species protection measures has improved in recent years. New and innovative instruments are in use to reconcile socio-economic pressures and biodiversity conservation; these include marketing of wildlife products and services under certain safeguards, and community sustainable development projects, being drawn up by local people and government organisations, mainly in economically depressed areas with high biodiversity. An important land certification programme specifies tenancy rights for agricultural land and demarcates natural protected areas, thereby helping avoid the negative environmental effects of ambiguous property rights. Several programmes have been developed to combat deforestation and promote sustainable forestry practices. For fisheries, policies and actual fishing practices have been redirected to focus not only on increasing production and modernisation, but also on quality and sustainability. Mexico has ratified most important international agreements on biodiversity and nature protection; it actively promotes international co-operation, especially on the marine environment.

These recent policies are aimed at redressing some critical problems: habitat loss, forest and soil degradation, and threatened species, many of them endemic. Now that most of the needed policies have been adopted, and their implementation has started, a determined and integrated effort is required to obtain the desired results. This will need to include priority setting, appropriate funding and monitoring of progress, as well as strengthening inspection and surveillance of natural resource use and management. The results of previous policies were disappointing because of a lack of implementation and funding, while forestry and fishery practices too often ignored sustainability. The Programme of Natural Protected Areas, while clear, ambitious and better funded, is not yet fully financed. The national biodiversity strategy has to be completed. Ecological physical planning, introduced in 1988, has not been implemented widely and only a few plans have been approved to date. It is not yet certain that the recent clarifications in land tenure and in agriculture and forestry policies are sufficient to reverse continued degradation, especially in tropical areas. For fisheries, further attention must be given to implementing decrees and regulations. Co-ordination or integration of the various bodies dealing with genetic resources has to be reviewed.

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

- pursue the implementation of existing plans and programmes on nature protection, integrated coastal zone management, forestry, soils and fisheries; closely monitor progress achieved; further strengthen institutional capacity for enforcement;
- pursue the implementation of innovative approaches to reconcile biodiversity protection and natural resource use, such as the marketing of specific wildlife products and services and community sustainable development projects;
- ensure more autonomous management of protected areas, involving strengthened relationships with research institutions, NGOs and the public;

- secure sufficient and accessible funding to implement the natural protected area programme and species protection programmes; strengthen priority setting;
- strengthen ecological physical planning; further promote public awareness and participation; continue research on biodiversity and natural resources;
- complete and adopt the national biodiversity strategy;
- implement, with appropriate deadlines, the strategy for sustainable forestry, agriculture and animal husbandry; further strengthen and integrate policies and programmes that combat deforestation (e.g. reforestation programmes), especially in tropical areas; ensure sufficient co-ordination with programmes for rural development and agriculture; integrate biodiversity and forest issues in agriculture policies;
- further pursue the sustainable fisheries approach and continue research into the status and trends of fish stocks.

2. Integrating Environmental Concerns in Economic Decisions*

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

Fostering sustainable development

In a country facing rapid population growth, migration to cities, and poverty that affects one-third to one-half of the population, pursuing sustainable development raises exceptionally difficult economic, social and environmental challenges. Depletion of groundwater supplies, air pollution in metropolitan areas, continuing deforestation and decreasing biodiversity are all symptoms of the stress being placed on the Mexican resource base.

Mexico has adopted a sound strategy to move towards more sustainable development. The creation of SEMARNAP, the adoption of the 1995-2000 National Development Plan and the 1995-2000 Environment Programme, the creation of broad-based consultative councils on sustainable development, the potential of the current decentralisation and devolution process, the new partnerships established with industry, and the support of NGOs, academics and communities are all positive signs that the new strategy might bring considerable success.

Mexico has created a National Consultative Council for Sustainable Development and four regional councils, with participation by all relevant government entities and all economic sectors. Although Mexico has no truly interministerial body aiming at closer integration of environmental and other policies of the government itself, it has several mechanisms to this effect. Such mechanisms should be strengthened and brought to the minister level to deal with environmental protection and land use issues and ensure that all ministries work towards the goal of sustainable development.

Since the creation of SEMARNAP, interministerial co-operation has improved considerably, now involving the ministries of foreign affairs, finance, trade and industry, energy, agriculture and health. Further integration of environmental concerns in fiscal policies should be sought. The integration of environmental concerns in the transport sector and in coastal area management also needs to be broadened and intensified.

Greater focus should be put on “getting the prices right”, with appropriate attention to addressing the special needs of the poor. Internalising externalities, and reducing subsidies and other forms of financial aid that are costly to taxpayers as well as detrimental to the environment, should become important objectives. The use of appropriate pricing (e.g. for water and energy) and economic instruments should help shape more sustainable consumption patterns. Concerning the greening of government operations, the example of SEMARNAP’s “green list” for administrative purchases needs to be followed on a larger scale.

* See also the 1997 OECD economic survey of Mexico and the 1997 OECD review of agricultural policies of Mexico.

Quantitative objectives for public policies are gradually being introduced (e.g. for water, with others in preparation for energy and industry). Such objectives are needed in other important policy areas (e.g. waste) so that progress can be monitored more closely. Reviewing the environmental performance of individual states or overall regions should prove useful. Protecting health and improving the level of education, prerequisites for sustainable development, would help reduce the very large inequalities in the distribution of wealth and improve conditions for the large fraction of the population that lives in extreme poverty.

In the industrial sector, a number of large firms in Mexico meet most national and international environmental standards and many are increasingly aware of their environmental responsibilities, including for risk prevention. But most of the country's vast number of small and medium-sized enterprises do not comply with environmental standards. Facing severe economic difficulties, they continue to use old technologies and find it hard to make a strong effort to protect the environment or prevent risks to workers and the neighbourhood. The role of the banking sector in supporting environmental investments should be enhanced.

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

- enhance institutional mechanisms to encourage better integration of environmental, economic, sectoral and social policies at the interministerial level, and require environmental authorities to be present at decision-making level in relevant federal commissions, committees and councils;
- set qualitative and quantitative environmental objectives as part of the planning process; identify the corresponding means of financing; establish a mechanism to track environmental performance at national and subnational levels;
- reduce subsidies and cross-subsidies with adverse environmental effects; identify current fiscal measures that have detrimental effects on the environment and seek to avoid such measures in the future, with appropriate attention to the specific needs of the poor;
- adopt an environmental policy specifically focused on small and medium-sized enterprises; develop medium-term contracts with trade groups; offer preferential lending rates and ease access to bank credits for such enterprises; accelerate the transfer of clean technology from larger to smaller firms; encourage environmental partnerships between larger and smaller enterprises;
- promote changes in consumption and production patterns by providing appropriate information (eco-labelling, eco-certification) and environmental education and by ensuring that prices fully reflect environmental costs (e.g. for water and energy) while giving attention to the special needs of the poor;
- accelerate the greening of government operations;
- further develop projects aiming at sustainable management of natural resources and income generation in economically depressed areas.

Sectoral integration: energy

Mexico is endowed with considerable reserves of oil and natural gas and significant hydroelectricity resources. These have enabled it to develop very rapidly and to build up a significant industrial sector. In per capita terms, Mexico's energy use and pollutant emissions are much lower than the levels in most other OECD countries. On the other hand, energy intensity (energy use per unit of GDP) is large and growing in Mexico at a time when for the OECD as a whole it is decreasing. CO_2 emissions are growing quite rapidly.

Mexico has created a formal body, including representation from several of the relevant public authorities, to deal with energy and environmental issues and has implemented an effective policy to improve fuel mix and quality so as to reduce pollution from SO_2, CO, particulates, lead, aromatics, olefins and benzene. To reduce air pollution levels in zones designated as critical, fuel oil is being replaced by natural gas and cleaner transport fuels are being put on the market. Much of the change in fuel use and composition is due to PEMEX and CFE (the state hydrocarbon and electricity monopolies). Electricity savings are being promoted through standards and specifications for certain products. Measures so far have led to reductions in pollution emissions from overall energy use. In urban areas, closer co-operation among public authorities has resulted in better integration of environmental concerns in energy and transport policies. Environmental impact assessments, environmental audits and risk assessments are being carried out in the energy sector, and PROFEPA has been inspecting energy facilities and has established agreements with PEMEX and CFE to carry out environmental audits.

Because energy has been inexpensive for years, energy conservation efforts are not very widespread. An increase in energy prices to internalise energy-related externalities, provided that it took social aspects into account, would increase public awareness in this area and lead to energy saving. Avoidance of accidents and reduction of environmental damage will require a continuing effort from the entire energy sector, in association with environmental administrations. Further efforts will be required to reduce air emissions caused by transport and to integrate more closely environmental considerations in overall urban and transport policies.

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

- promote improvements in energy efficiency through energy standards, voluntary programmes and fiscal incentives, giving special attention to measures that are justified economically, regardless of any direct environmental benefits;
- remove subsidies or cross-subsidies on electricity and gas prices, providing instead direct income support if needed for social reasons;
- increase levels and adjust the structure of energy and transport fuel prices by raising energy taxes to internalise energy-related externalities and to provide incentives for energy efficiency, taking into account the specific needs of the poor;
- ensure that PEMEX and CFE act as partners in the development of environmental policies and that their facilities serve as an example to Mexican industry in the area of energy saving;
- increase the use of renewable forms of energy;
- combat air pollution from energy use in urban areas by increasing the penetration of natural gas and reducing emissions from vehicles and filling stations;
- implement the national strategy to progressively reduce the rate of growth in emissions of greenhouse gases, which would strengthen current efforts to improve energy efficiency and conservation.

3. International Co-operation

Achievements

During the 1990s, Mexico has significantly increased its involvement in international environmental co-operation. It has ratified and implemented numerous international conventions and negotiated many new bilateral and multilateral agreements to help fulfil domestic objectives as well as promote international environmental co-operation. In addition, Mexico has adopted a new approach in its international relations and stresses the need for all countries to increase their role in environmental protection, at both domestic and international levels. As a new OECD Member country that is still facing many of the challenges of a developing country, Mexico must implement policies that foster economic development and also protect the local, regional and global environment, according to its means and obligations. Mexico has undertaken to implement all OECD Decisions and Recommendations concerning the environment.

Mexico has considerably strengthened its environmental protection activities along its northern border, which extends over 3 000 kilometres; it is participating in many activities with the United States to prevent transboundary air and water pollution and to better manage hazardous waste. The new Border XXI programme represents considerable progress from past approaches but is in a very early stage of implementation. Its financing is still an open issue, and external funding will probably be required. As a party to the NAFTA environmental side-agreement (the trilateral North American Agreement on Environmental Cooperation), Mexico is improving its environmental policies and benefiting from the experience of Canada and the US, particularly as concerns toxics and ecosystem monitoring. Funds are being released by the North American Development Bank for projects in border areas, and additional financing is available in a new North American environment fund. Mexico is an active partner in many joint activities concerning forestry and biodiversity.

Mexico has established closer links on environmental issues with countries of Central America, the Caribbean and South America. It is providing these countries with its own expertise and helping raise awareness of environmental issues. It is also actively participating in consultations within the Asia-Pacific Economic Cooperation forum.

Mexico has developed and is now using new fishing methods that avoid incidental deaths of dolphins and marine turtles through the strengthening of regulations, the use of turtle exclusion devices, and inspection and surveillance. It has promoted and supported international agreements on this issue and on responsible fishing. It has

also taken up responsibilities beyond its legal obligations under both the Montreal Protocol and the climate change convention, although it formally has developing country status in these two instruments. It has succeeded in considerably reducing its consumption of CFCs and is expected to ban their use in the foreseeable future. Mexico is making inventories of greenhouse gases and drawing up mitigation measures; in both cases, it acted very much in line with other OECD countries, even though it was not obligated to do so.

Mexico has taken steps to protect its marine environment, in particular by developing domestic oil pollution contingency plans in case of oil spills in domestic waters or through joint emergency plans in waters near the United States. It has been active in follow-up to the UN Conference on Environment and Development, especially with the creation of consultative mechanisms to implement Agenda 21, involving the co-operation of all stakeholders and all ministries.

Areas for progress

Given that Mexico's achievements at international level stem mostly from recent decisions, actual results are rather recent or forthcoming. Mexico has only lately adopted quantitative targets and schedules in its international environmental activities. Its funding for international projects has suffered because of financial demands of urgent domestic priorities.

The overall environmental situation along some stretches of the northern border (e.g. as regards water quality, air quality and waste disposal) has continued to deteriorate. In spite of measures taken by Mexican authorities, pressure from rapid economic and demographic growth has led to transboundary pollution. With a more proactive approach in the 1980s, many problems that became particularly acute in the 1990s could have been avoided. Lack of funding and bureaucratic obstacles may delay implementation of the Border XXI programme. The equal financing requirement of new trilateral institutions under NAFTA is likely to put a strain on Mexico.

Concerning climate change, Mexican emissions of CO_2, though fairly small, will continue to grow for quite some time. Measures are being taken to increase energy efficiency and reduce the rate of increase of CO_2 emissions, but they do not seem very significant. Little use is being made of economic instruments to provide incentives for behavioural change and encourage the use of cleaner technologies. Increasing energy prices would help create greater awareness in all sectors of Mexican society of the need to save energy, but a lack of clear targets hinders the development of appropriate policies and instruments. In the area of marine pollution, additional investment will be needed to meet international undertakings, and particularly to avoid pollution of the sea by oil, garbage and waste. In matters of international trade, close scrutiny should be exercised to avoid illegal trade in CFCs.

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

- seek additional resources to make it possible to pursue international co-operation on environmental protection and nature conservation;
- continue to develop a more proactive position, reflecting OECD membership, on global environmental issues;
- further develop institutional capabilities and interministerial co-operation in border areas to solve transboundary environmental problems caused by economic development;
- establish long-term financing plans with state and local authorities to address water management issues arising along the northern border;
- integrate more closely the activities of various ministries concerning marine environmental issues so as to better protect coastal areas and the marine environment while developing economic activities linked to the sea (tourism, fisheries, offshore oil industry, maritime transport);
- invest in port reception facilities so as to be able to ratify the related MARPOL Annex V;
- implement a national strategy to combat climate change, including clear targets, and select effective regulatory and economic measures to reduce growth in CO_2 emissions;
- seek additional international funding to protect the country's rich biodiversity.