

1

CONCLUSIONS AND RECOMMENDATIONS*

Since 1996, New Zealand's GDP has grown by 30% while the population has increased by 9%. Real per capita GDP is nonetheless 11% below the OECD average. The country is dependent on international trade, with exports contributing 29% of GDP and natural resource-based exports (from agriculture, forestry, fishing and aquaculture) accounting for a large share. Services generate 66% of the value added in the economy, industry 24% and primary production 10%.

With relatively low population density, natural resource management-related issues continued to dominate the environmental policy agenda during the review period. A broad reform of environmental management institutions, which was catalysed by the 1991 Resource Management Act (RMA), overhauled the institutional framework for environmental planning and management, and continued the devolution of most policy implementation responsibilities to regional and territorial authorities (collectively known as local authorities). Concurrently, a major reform of local government consolidated the number of subnational authorities from 800 to 90. The full effects of these reforms on environmental management began to be felt only in the late 1990s, as their implementation took years.

Major sources of environmental pressure, including agriculture, transport, tourism and energy production and consumption, expanded during the review period. Energy intensity is now about equal to the OECD average, having fallen by 18% during the review period. While the intensity of water, fertiliser and pesticide use remains on the low side for OECD countries, the review period saw significant increases, with consequent growth in pressures on the environment.

To face these environmental management challenges, it will be necessary for New Zealand to i) strengthen national policy guidance, in the form of policy statements and national environmental standards, in the interest of promoting a level national playing field and improving regulatory efficiency; ii) further integrate environmental concerns into economic and sectoral decisions, particularly by using economic instruments to internalise environmental costs of economic activities; and iii) further develop international environmental co-operation.

This report examines progress made by New Zealand since the previous OECD Environmental Performance Review (1996) relative to its established domestic objectives and international commitments regarding the environment. It also reviews progress in the context of the OECD Environmental Strategy,**

* Conclusions and Recommendations endorsed and approved by the OECD Working Party on Environmental Performance at its meeting on 27 September 2006.

** The following objectives of the OECD Environmental Strategy for the First Decade of the 21st Century are covered in the Conclusions and Recommendations: maintaining the integrity of ecosystems (Section 1), decoupling of environmental pressures from economic growth (Section 2) and global environmental interdependence (Section 3).

and compared to the recommendations of the 1996 OECD review. Progress has stemmed from environmental and economic decisions and actions by central, regional and territorial authorities, as well as by enterprises, households and non-governmental organisations (NGOs). Thirty-eight recommendations are made that could contribute to further environmental progress in New Zealand.

1. Environmental Management

1.1 Strengthening implementation of environmental policies

During the review period, local authorities largely assumed the additional environmental management responsibilities devolved to them under the RMA. No operational regional policy statements or regional coastal plans existed at the time of the 1996 OECD review, but by 2006 all regional authorities had issued policy statements, and all but four had coastal plans in place. Overall, local authorities have used the RMA-based resource consent system to manage point sources of pollution effectively. Investment in water supply and sewerage has led to better sanitation. Local councils increasingly apply user charges for landfilling and resource consent processing. A first set of national environmental standards (concerning air quality) was issued in 2004; it includes five standards for ambient (outdoor) air quality, and seven standards banning activities that discharge toxics into the air. Additional government funding since July 2002 and development of a robust case management system have improved the functioning of the Environment Court and halved the backlog of cases from the 2001 level. Since 2000, the central government has issued several national strategies to help guide local government in implementing the RMA, and has worked to improve public understanding of RMA processes. After the first national state of the environment report was published in 1997, a project helped define several sets of national environmental indicators. The Parliamentary Commissioner for the Environment has provided independent, cross-sectoral analysis that has helped focus environmental sustainability efforts. Environmental expenditure (for pollution abatement and control as well as water supply and nature conservation) has increased in recent years, although it remains rather low (less than 1% of GDP).

Notwithstanding these achievements, there remains room for improvement in New Zealand's environmental management. The central government has so far provided little statutory guidance in the form of national standards and policy statements to local authorities regarding implementation of the RMA and monitoring of environmental conditions. Recent success in issuing national strategies concerning elements of environmental management is tempered by their non-binding nature, which makes their implementation vulnerable to changes in government. The Environment 2010 Strategy, adopted in 1995, was set aside a few years later. Differences in technical capacity, knowledge, skills and issues among local authorities translate into differences in environmental management, and businesses complain that the regulatory playing field within the country is not level. The policy mix remains focused on regulatory and voluntary approaches, with economic instruments underused. National-level aggregates of data and indicators on the state of the environment and environmental pressures are scarce, thus impeding efforts to strengthen outcome-oriented environmental policy-making. Despite recent progress, the polluter pays principle is not yet fully integrated into markets for environmental goods and services.

Recommendations:

- accelerate the establishment of national environmental standards (e.g. for freshwater, waste and contaminated land) and national policy statements (e.g. on coastal waters and freshwater);
- review systems for charging users for waste and waste water services, identifying opportunities to strengthen economic incentives for resource conservation and efficiency;
- reinforce the commitment to outcome-oriented environmental policies, ensuring that information and data needed to assess policy effectiveness and efficiency are regularly collected and analysed;
- strengthen monitoring of air and water quality, and waste generation and treatment, assuring baseline consistency of methods used at local level to facilitate data aggregation and periodic reporting of key environmental indicators at national level;
- assure the effectiveness of voluntary agreements, requiring clear environmental performance targets, regular reporting and third-party auditing.

1.2 Water

The framework for water resource management was strengthened during the review period, with all but two regional councils issuing water management plans. The portion of the population served by public water supply that fully complies with drinking water guidelines increased from 50% in 1994 to 83% in 2004. The portion of the population served by public waste water treatment is high (80%), and of that the majority (91%) is connected to secondary or tertiary treatment. National drinking water quality guidelines are aligned with those of the World Health Organization. A 2003 voluntary agreement (the Dairying and Clean Streams Accord) reached among the dairy industry and central and regional governments has stimulated investment by farmers in fencing and culverts; restrictions on access of dairy stock to waterways is expected to reduce diffuse nutrient loading of streams. Pollution of surface waters by point sources decreased over the review period due to improved treatment capacity and regulation through resource consents. Implementation of coastal management plans has helped reduce pollutant loading to coastal waters and thus improved coastal bathing water quality. Since 1995, six rivers have been designated outstanding water resources via national water conservation orders, bringing to 14 the number of rivers and lakes for which certain natural values are protected.

However, there is still considerable need for progress in water management and related outcomes. The absence of a national policy statement and legally binding national environmental standards for ambient waters has made it difficult for regional authorities to design regulatory or economic measures to limit diffuse pollution of surface waters. Over 15% of the population is supplied drinking water that does not meet national drinking water guidelines, and the Ministry of Health has declared that it has reached the limits of what it can do with non-regulatory approaches. Water quality in rivers and lakes has declined in regions dominated by pastoral farming, where high nutrient inputs and microbiological contamination destabilise natural ecosystems and pose risks to human health. In lowland areas, surface waters regularly exceed national water quality guidelines, and consequent damage to aquatic ecosystems is widespread, mainly due to run-off and leaching from pastoral farming and rural septic tanks. With increased demand for water for irrigation and domestic water consumption, the first-come, first-served approach to water allocation needs refinement. Particularly in water-stressed regions, there is a need to improve understanding of sustainable yield levels of key aquifers, and to rationalise allocation of water as an economic commodity. For farmers and households alike, incentives to conserve water are weak, as pricing is generally not linked to volume abstracted or consumed.

Recommendations:

- issue a national policy statement on freshwater quality, establish national environmental standards for drinking water sources, and strengthen national approaches for protecting receiving water quality;
- introduce market-based instruments to internalise the environmental costs of non-point source discharges from agriculture (e.g. run-off of fertilisers, urine from grazing stock);
- strengthen and expand the use of water demand management measures (e.g. volumetric metering, pricing for full recovery of water management costs, water efficiency standards);
- further expand the knowledge base concerning sustainable abstraction levels of key aquifers, and strengthen regulatory control of total allowable abstraction;
- consider introducing cap-and-trade systems and other regulatory and market-based instruments to rationalise the allocation of water abstraction rights in water-stressed regions.

1.3 Waste

Waste management rose on the environmental agenda during the review period. Publication in 2002 of the national Waste Strategy gave needed focus and clarity, as well as national objectives and targets, to a waste management framework otherwise fragmented in its legislation and institutions. In some areas, enhanced co-operation among local councils has facilitated the closing of small substandard landfills and the opening of larger landfills with better environmental performance. During the review period, a range of technical guidelines for landfills was established, and the portion of landfills having modern pollution control systems increased (e.g. leachate collection systems at 13% of landfills in 1995, 47% in 2002). Since the Waste Strategy set the objective of assuring full cost recovery for waste disposal, local councils have begun to apply waste levies on waste entering landfills. Recycling of municipal waste has expanded, with 75% of local councils providing kerbside collection of recyclable materials in 2004, up from 20% in 1996. A voluntary agreement (the Packaging Accord) based on the extended producer responsibility principle has contributed to increased recovery rates for packaging waste. Remediation of contaminated land has progressed at priority sites, although further progress on pre-1991 sites is dogged by unresolved financial liability issues.

Despite these recent improvements, New Zealand still faces waste management challenges. The rate of municipal waste generation continued to increase during the review period, with little sign of decoupling from GDP. The fragmented legislative and institutional framework for waste management has stymied efforts to take a cradle-to-grave approach to materials management. Related legislation mostly deals with the disposal end of the waste hierarchy, with recycling, recovery and minimisation dealt with solely on a voluntary basis. The absence of national environmental standards for disposal facilities has created an uneven playing field for landfill operators, and thus stunted the development of a market for waste management services. The economic viability of recycling of a range of materials is limited by distance from larger markets, and this constraint makes even established recycling activities (e.g. for glass) vulnerable to collapse. Information on waste management is still not aggregated at regional or national levels, hampering strategic planning. Implementation of legislation on hazardous waste management relies largely on local authorities that may lack necessary technical capacity. As tracking of volumes and movements of hazardous waste is in its infancy, it is very difficult to manage associated environmental risks as called for in the Hazardous Substances and New Organisms Act.

Recommendations:

- develop national regulations specifically concerning the management of hazardous waste and introduce mandatory and comprehensive systems for tracking its transport, treatment and disposal;
- expand and upgrade waste treatment and disposal facilities (e.g. landfills, hazardous waste platforms, waste water treatment plants), promoting co-operation among territorial authorities where this will lead to economies of scale, and applying the polluter pays principle;
- increase regulatory support for recovery or recycling (including deposit-refund systems) of priority waste, such as end-of-life vehicles and electronic goods, building on the extended producer responsibility principle;
- clarify liability arrangements for the remediation of contaminated sites, and develop financing mechanisms that apply the polluter pays principle as fully as possible.

1.4 Nature and biodiversity

In a global context, New Zealand has a special responsibility for biodiversity conservation, since a high percentage of its 90 000 native species are endemic and unique. New Zealand increased the priority given to nature and biodiversity conservation in the review period through expanded funding and policy measures. The security of 200 threatened species has improved through effective species recovery programmes, and there were no known species extinctions during the review period. Natural processes provide essential “ecosystem services” and form the base for important economic activities (e.g. tourism, forestry, fisheries, agriculture). Protected areas have been expanded to cover 32% of the country’s land area and 7.5% of its territorial sea, significantly higher than in most OECD countries. A substantial increase in the area of private land protected under covenant agreements has extended the reach of efforts to protect indigenous biodiversity in remnant areas, although not always in accordance with national conservation priorities. Since 1998, review of land tenure arrangements in the high-country of the South Island has added 105 km² to public conservation lands and waters, and boosted the representation of tussock grasslands in protected areas. The Biodiversity Strategy (2000) and Biosecurity Strategy (2003), as well as two general policies issued in 2005, gave needed guidance to environmental managers. Maori tribes are increasingly taking responsibility for the management of their customary fishing rights.

Nevertheless, nature and biodiversity conservation still faces major challenges in New Zealand. Despite sizable decreases in the numbers of certain pests (e.g. rats, possums, rabbits) in some areas, invasive species continue to pose serious risks to indigenous ecosystems and species and inflict high economic damage overall. Land use change analysis shows a net loss of nearly 175 km² of indigenous habitat between 1996 and 2002. The central government recently decided not to proceed with a national policy statement on biodiversity, a draft of which was presented for consultation in 2001, but instead to pursue biodiversity objectives through a non-statutory approach. In the absence of data on ecosystem conditions and trends, conservation objectives continue to be defined in terms of agency output rather than performance outcomes. Efforts to put ecosystem survey and monitoring techniques into use have been slow and sporadic. Conservation of freshwater and wetland ecosystems has trailed that of other biotopes, even as pressures on them from diffuse pollution and water abstraction have grown. The rapid and prolonged increase in numbers of tourists to a few places in national parks and conservation areas has led to deficits in waste and waste water capacity and damage to habitats. Although New Zealand’s marine environment is very vulnerable to alien species, control of risks from ballast water and vessel hull fouling is in its infancy.

Recommendations:

- issue national policy guidance concerning conservation of biodiversity on private land, and ensure that nature conservation objectives are fully reflected in spatial and coastal plans;
- reinforce protection of wetlands and freshwater ecosystems and consider introducing economic or fiscal instruments to curb pressures from agriculture and urbanisation;
- strengthen and harmonise monitoring of major pressures on biodiversity and ecosystems, both within and outside protected areas;
- further develop partnership approaches to conserving biodiversity on private land, prioritising conservation of ecosystems that are under-represented in public conservation lands and waters;
- develop and implement measures to mitigate environmental pressures associated with increasing tourist numbers and tourism concessions on conservation lands and waters.

2. Towards Sustainable Development

2.1 *Integration of environmental concerns into economic decisions*

Integration of environmental concerns into economic planning and development progressed during the review period. New Zealand has weakly decoupled its emissions of major air pollutants (SO_x, NO_x, NMVOCs) from its economic growth, and has lowered the energy intensity of its economy by 18% since 1996. Cross-subsidisation of electricity has been eliminated and higher end-user prices have strengthened incentives for conservation. Renewable energy sources constitute 30% of the energy supply, higher than in most OECD countries. Standards for motor vehicle fuel quality, issued in 1988, were recently revised. Environmentally harmful subsidies in the agriculture and fishery sectors are among the lowest in the OECD. The management of fisheries through a system of individual transferable quotas has helped avoid stock collapses and served as an example for other OECD countries. The 2003 Sustainable Development Programme of Action defined a national approach to sustainable development and set out overarching principles and goals, thus giving needed guidance to territorial authorities. Supporting objectives were formulated in several national strategies (e.g. on biodiversity, waste, energy efficiency) issued since 2001. Codes of practice established by business associations in several sectors (e.g. tourism, fisheries, forestry) are facilitating best-practice sharing.

Despite this progress, New Zealand faces a number of challenges in integrating environmental concerns into economic activities. No strong decoupling of environmental pressures from GDP growth has been observed. Air emissions from power plants and mobile sources increased significantly during the review period. The use of nitrogenous fertiliser has outstripped GDP growth since 1996, with consequent increases in run-off to surface waters. The rate of car ownership has grown very rapidly, and is now one of the highest among OECD countries; little has been done to manage demand for private road transport in favour of less polluting modes. Although still good overall, air quality has deteriorated in some urban areas, due mostly to emissions from motor vehicles, home heating and industry. Economic and fiscal instruments (e.g. taxes, charges, deposit-refund programmes) are little used to internalise the external environmental costs of sectoral activities, although the country's commitment to using market-based solutions is deep rooted. Sustained growth in demand for electricity has led to increased use of fossil fuels for power generation, with consequent increases in greenhouse gas (GHG) emissions.

Recommendations:

- strengthen and extend measures to decouple environmental pressures from economic growth, where possible using market-based approaches to ensure that environmental costs are reflected in prices;
- further develop economic and regulatory measures to reduce diffuse water and air pollution from agriculture, tourism and transport;
- further strengthen measures to promote energy efficiency in the transport, energy and industrial sectors (e.g. energy taxation and pricing, product standards, building codes);
- augment measures to encourage improved emission performance of motor vehicles and to internalise the environmental costs of road transport (e.g. fuel taxes, fuel quality standards, inspection of in-use motor vehicles, road user charges);
- ensure that national sustainable development objectives are reflected in territorial development plans and resource consents.

2.2 *Agriculture, forestry and the environment*

Considerable progress was made during the review period in integrating environmental concerns into the daily management of agriculture and forestry operations. The removal of agricultural subsidies in the late 1980s catalysed the conversion of marginal pastoral land to plantation forests or back to native bush. Environmental risks posed by accumulation of unwanted, old or obsolete agrochemicals on farms have been reduced through collection and disposal campaigns by regional councils and the Ministry for the Environment (MfE). Some 320 km² of highly erosion-prone pastureland has been reforested since 1992 through the East Coast Forestry Project, advancing nature conservation and erosion control objectives. Conservation of indigenous forests has been strengthened through the progressive uptake of sustainable forest management practices by private forestry operators, and the permanent conservation of 1 300 km² of state-owned indigenous forests on the West Coast. Forestry and horticulture operations have increasingly adopted environmental management systems, some to assure access to markets. The area of land used for organic farming more than tripled during the review period, and an official organic assurance system was introduced. The Dairying and Clean Streams Accord has helped restrict run-off of urine from dairy stock to surface waters. The process of land tenure review in the South Island has helped reduce the impact of grazing on fragile high-country ecosystems.

Despite these advances, the agriculture and forestry sectors still face challenges with respect to better integration of environmental concerns. In contrast to many OECD countries, GHG emissions from agriculture (e.g. methane and nitrous oxide) account for some 50% of the national total, and are rising. Changes in agricultural production have led to increased intensity of inputs, including fertiliser and irrigation water, with consequent increases in environmental pressures. There is considerable potential to internalise related external costs through use of market-based instruments (e.g. taxes, charges, trading). The use of on-farm nutrient budgeting is still the exception rather than the rule, though it is growing. Diffuse pollution from agriculture is associated with elevated levels of pathogens and nitrates in lowland water bodies. Farmer compliance with resource consents for the disposal of dairy shed effluent is highly variable, with some farmers still spreading manure close to waterways. The scale of environmental pressures generated by intensification of agriculture during the review period, particularly as evidenced by the deterioration of surface water quality in lowland areas, warrants consideration of economic or fiscal instruments aimed at rationalising the use of agricultural inputs and encouraging sustainable land management practices. Land use change imagery has confirmed that clearing of native forests continues, in some instances without required resource consents.

Recommendations:

- further apply sustainable land and forest management approaches (e.g. environmental farm planning, nutrient budgeting, application of sustainable forest management practices) and assess their effectiveness in reducing pressures on the environment;
- strengthen compliance with the environmental conditions set in resource consents and permits (e.g. concerning disposal of dairy effluents, timber harvest in private indigenous forests) through increased inspection and enforcement;
- define and implement measures to reduce net GHG emissions from the agriculture and forestry sectors, prioritising those that also meet other environmental objectives (e.g. flood protection, nature conservation) so as to capture “win-win” opportunities;
- assure independent evaluation of the effectiveness of voluntary agreements and covenants in reducing environmental pressures from agriculture and forestry activities.

2.3 *Integration of environmental and social decisions*

Within a well-developed institutional framework for sustainable development, New Zealand has made considerable progress towards integrating and balancing environmental and social concerns. Greater public participation and consultation under the RMA has increased stakeholder input to environmental management and policy formulation. Maori have become more involved in environmental management through expanded natural resource rights and greater representation on regional and territorial councils. Access to judicial processes has significantly improved with the operation of the Environment Court since 1996, and a boost in its funding since 2002 that helped accelerate treatment of cases. Access to justice has been further facilitated through the Environmental Legal Assistance Fund, which provides funding to stakeholders wishing to bring environmental cases to court. Public awareness of environmental issues has increased and environmental education has been reinvigorated through the national Strategy for Environmental Education and its implementing guidelines for teachers.

Despite these gains, areas for improvement remain. Consistent environmental indicators and trend data that can be aggregated at national level are scarce, and the sole national state of the environment report was published in 1997. Although public consultation as part of RMA processes is extensive, it could be rendered more efficient in certain cases. Indeed, NGOs, Maori, businesses and other stakeholders complain of “consultation fatigue” and report that they must sometimes drop out of lengthy consultation processes when they become too costly. There is increasing public concern that New Zealand’s “clean and green” image is waning; nevertheless, surveys show that this concern is not matched by a willingness to take personal action or accept the costs of measures to improve the environment. Poor indoor air quality and drinking water that does not comply with guidelines entail health risks, with socio-economically disadvantaged and Maori households disproportionately affected. New Zealand has a high rate of waterborne disease compared to other OECD countries. Ambient air quality in large urban areas has deteriorated, posing health risks. In agricultural areas, exposure to pesticides from spray drift is a public concern.

Recommendations:

- expand availability of quantitative indicators and time series data related to environmental quality, assuring policy relevance and public access;
- develop and implement a national environmental health plan (as called for in the national Health Strategy), setting quantified targets for reducing related public health costs and for minimising differences in exposure among various population groups;
- expand measures to reduce health risks associated with poor indoor air quality, substandard housing and unsafe heating;
- strengthen measures to prevent human exposure to harmful levels of pesticides through pesticide spray drift, residues in food and improper disposal;
- continue to promote the integration of environmental education in school curricula and in occupational training.

3. International Co-operation

New Zealand continues to give high priority to international co-operation for environmental protection, both to reduce pressures on shared natural resources and to maintain a level playing field in the context of expanding international economic integration and competition. Since 1996, New Zealand has ratified and begun implementing a number of international conventions related to marine issues, as recommended in the previous OECD review. It has also worked actively to promote international co-operation for the conservation of biodiversity and seabirds. A range of measures has been introduced to comply with the UN Fish Stocks Agreement regarding flag state control of fishing vessels on the high seas, and the industry has initiated negotiations with the central government to ban destructive fishing practices in one-third of New Zealand's offshore waters. The country has met all of its port state control requirements under the Tokyo Memorandum of Understanding. Concerning ozone-depleting substances, New Zealand has complied fully, and often before international deadlines, with phase-out timetables established under the Vienna Convention's protocols. Surveillance at the borders for illegally transported CITES-protected items is strong, although fines and sanctions are sometimes too low to be dissuasive. Within the South Pacific region, New Zealand has provided technical assistance on trade and environment and marine conservation issues. Environmental considerations are systematically taken into account in official development assistance projects. Concerning the Antarctic, New Zealand produced the first state of the environment report of the Ross Sea Region and worked with the United States to establish the first Antarctic Specially Managed Area. Regulatory requirements for seabird scaring devices on fishing boats have helped reduce seabird mortality, although more than 5 000 seabirds per year are still killed as by-catch in New Zealand waters.

Despite these achievements, there is a need for further progress on several fronts. The GHG intensity of the New Zealand economy is the fourth highest in the OECD, and GHG emissions continued to grow during the review period. A domestic target for 2000, concerning reduction of CO₂ emissions, was not met. Carbon sequestration in forests, a key factor in New Zealand's GHG accounting since 1990, is likely to diminish over time as planted forests reach maturity, and government retention of forestry carbon sink credits may have contributed to the weakening of incentives to expand plantations. The suspension of the climate change policy package in 2005 (including its planned carbon tax) has created great uncertainty about how New Zealand will meet its Kyoto target. The country has acquired relatively little experience using Kyoto flexible mechanisms, although their use will likely be required to meet the Protocol target. The energy intensity of the industrial sector is high, and the carbon intensity of the electricity supply, although still low, is increasing. Low taxation of motor vehicle fuels (or nonexistent in the case of diesel) translates into relatively low prices at the pump, giving little incentive for fuel conservation. To meet the phytosanitary requirements of importing countries, New Zealand still depends heavily on methyl bromide

(a strong ozone-depleting substance) for the fumigation of export forest products and strawberries. Development of a national ocean policy has been slow, and the management of some high seas fish stocks remains challenging. Consideration should be given to increasing domestic or international protection of certain endemic insect species which are heavily affected by international trade.

Recommendations:

- adopt and implement a clear and comprehensive package of climate change policy measures (e.g. economic instruments, flexible mechanisms) to meet New Zealand's international commitments, giving consideration to setting sectoral targets; develop strategies for future climate protection commitments in line with guidelines of the Intergovernmental Panel on Climate Change;
- give consideration to allocating carbon sink credits and liabilities to forest owners, and ensure that the agriculture sector reduces its GHG emissions through low-cost practice changes and efficiency gains (e.g. energy efficiency improvements, increased biogas recovery);
- review and adjust fines and sanctions for smuggling of CITES-protected species or derived products, to ensure that they are dissuasive relative to the potential gains from smuggling;
- finalise and implement the ocean policy and pursue the further expansion of marine reserves and the strengthening of regional co-operation for the management of high seas fish stocks;
- increase levels of official development assistance and continue to mainstream environmental concerns into ODA.