

## CONCLUSIONS AND RECOMMENDATIONS\*

The Netherlands, which has a very open economy, experienced rapid expansion during the last ten years. It is the world's sixth largest exporting country, and its gross domestic product (GDP) is the world's 14<sup>th</sup> highest. The Netherlands has become a hub of international commerce, with a transport infrastructure centred on the port of Rotterdam (the busiest port in the world) and Amsterdam-Schiphol airport.

Very high densities of both population and economic activities have led to very intense pressures on the country's environment. Together with the delicate geographical balance between land and water, these pressures have made environmental protection a matter of serious public concern. Environmental issues have a strong international dimension in the Netherlands, reflecting regional environmental interdependencies (e.g. transboundary air and water pollution, North Sea pollution), regional economic interdependencies (EU membership, the country's role as a gateway to Europe) and global environmental issues (e.g. vulnerability to climate change and sea level rise, the importance of trade and environmental aid).

Since the early 1990s, the Netherlands has made considerable progress in decoupling a number of environmental pressures from economic growth and meeting several of its ambitious environmental targets. This progress reflects the reshaping of the Dutch economy and the strengthening of environmental policies, including in the EU context. Today priority environmental issues include: loss of biodiversity, climate change, over-exploitation of natural resources, threats to human health and external safety, damage to the quality of life, and possible unmanageable risks. Several of these issues reflect pressures on the environment deriving from the Netherlands' development choices, such as intensive agriculture and transport.

It will be necessary for the Netherlands to: i) improve the cost-effectiveness of its environmental policies; ii) further integrate environmental concerns into economic and social decisions; and iii) reinforce its international environmental co-operation on environmental issues. This report examines progress made by the Netherlands since the previous OECD Environmental Performance Review in 1995, and the extent to which the country's domestic objectives and international commitments are being met. It also reviews progress in the context of the OECD Environmental Strategy.\*\* Some 52 recommendations are made that could help strengthen the Netherlands' environmental performance in the context of sustainable development.

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\* Conclusions and Recommendations reviewed and approved by the Working Party on Environmental Performance at its January 2003 meeting.

\*\* The Objectives of the "OECD Environmental Strategy for the First Decade of the 21<sup>st</sup> Century" are covered in the following sections of these Conclusions and Recommendations: maintaining the integrity of ecosystems (Section 1), decoupling of environmental pressures from economic growth (Sections 2.1 and 2.3), integration of social and environmental concerns (Section 2.2) and global environmental interdependence (Section 3).

## 1. Environmental Management

### 1.1 *Implementing cost-effective environmental policies*

In the last ten years the Netherlands has met or come close to meeting a number of its domestic objectives (e.g. concerning SO<sub>2</sub> emissions, toxic air contaminants, groundwater depletion, flood protection, phosphorus concentrations in water, expansion of the ecological network) and international commitments (e.g. transboundary air pollution and North Sea targets). The Environmental Management Act (EMA) provides a framework for co-ordinating environmental legislation, though water, soil and nature management are subject to specific legislation. New regulations establish corporate financial liability for environmental damage. At the central level enforcement staff recently increased by 10%, following regrouping of the environmental, spatial planning and housing inspectorates; the number of inspections has also increased and penal sanctions have been applied. To maintain their incentive function, fine levels have been made proportionate to the size of the company. As a result, compliance levels have increased. Inspection and prosecution pay particular attention to the movement of dangerous goods. Environmental taxes (e.g. on groundwater, landfill) and a regulatory energy tax have been introduced and other taxes are under discussion. Charges apply to point and diffuse water pollution, and producer responsibility has been extended to a range of waste streams. Overall, economic and fiscal instruments are used widely in the Netherlands. A new spatial planning policy to control urban development and protect landscape areas was issued in 2000. Overall, industry has been responsive and often proactive in improving its environmental performance, particularly through environmental agreements (e.g. covenants) and environmental management and auditing; there are also environmental reporting obligations for companies. The customised licensing system introduced in 1995 reflects a shift from regulatory approaches to monitored self-regulation. Environmental agreements, which are more or less binding substitutes for regulation, have been successful in a number of areas in the Netherlands; long-term environmental objectives have been agreed with industry in a series of branch agreements, and the contributions expected from individual companies have been included in their operating permits. Flexibility in meeting objectives, and a stable investment context, have made these schemes attractive to firms. The characteristic policy mix of regulation/licensing plus economic instruments plus environmental agreements continues to be productive. The gradual move to de-emphasise environmental agreements and regulation (arising from economic liberalisation and greater European and international integration) and to place more emphasis on economic instruments has merit, especially as it takes advantage of the government's strength in establishing frameworks rather than micro-managing.

However, despite this positive picture the Netherlands has not met several of its commitments or is not on the way to meeting them (e.g. for CO<sub>2</sub>, NH<sub>3</sub>, NO<sub>x</sub> and VOC emissions, nitrogen inputs to water, nature protection, green space in urban areas). Many of the previous NEPP targets for emission reductions and for environmental quality have been postponed or revised. Water management and nature conservation objectives are being addressed separately, reflecting the institutional setting. As a result, integration of nature and water management initiatives in central and local land use planning (e.g. water areas for flood prevention, green areas for nature conservation) has been weak. Licensing of groundwater abstraction and waste water discharge is not covered by the EMA and has remained separate from integrated air, noise and waste licensing. There is a somewhat unclear split of enforcement and licensing responsibilities among the central, provincial and municipal levels in this relatively small country, though administrative agreements have been signed to enhance co-operation among enforcement partners. Customised licensing (based on overall pollution reduction targets) applying to the 100 top companies (mostly multinational) conflicts with the IPPC logic that requires BAT standards for each individual production process. Fines are too low to prevent illegal traffic linked to international trade (e.g. CITES, Basel Convention). There has been a

tendency to focus on fiscal rather than economic instruments, with no air emission charges, user charge levels with little effect on water consumption, and flat rates applied to municipal waste collection charges. Implementation of environmental agreements should be accompanied more systematically by transparency mechanisms and the threat of penalties, such as levying of an energy tax, in cases of non-compliance with targets. The move towards market-based instruments may be difficult to make in all areas. Increased emphasis on market based instruments should not come at the expense of experimentation with other approaches such as labelling and support for eco-design.

It is recommended to:

- retain and refine quantitative policy targets for reducing environmental pressures, and strengthen efforts to see that they are attained without slippage;
- enhance the role of provinces as a key level of policy integration, including environmental policy planning, land use planning and water management planning;
- improve the split of enforcement and licensing, especially at local level, and clarify the responsibilities of the central, provincial and local levels; possibly broaden the scope of inspection and enforcement by the VROM Inspectorate to include IPPC companies;
- take steps toward implementing the IPPC Directive for large companies, in such a way that emission trading can be applied in the best possible way;
- reinforce integration of nature and water management objectives in central and local land use planning; establish periodicity in the preparation of land use plans;
- extend the use of economic instruments (e.g. waste, water and transport management) and their incentive effects, in line with the user and polluter pays principles.

## 1.2 Air

The Netherlands has successfully decoupled emissions of most traditional air pollutants from economic growth, improving urban air quality and reducing the Dutch contribution to transboundary air pollution. For most of the 50 priority air pollutants, emissions have been reduced to (or even below) targets set domestically and internationally to protect human health and the environment. This has been accomplished with a mix of instruments. Substantial reductions in emissions of toxic chemicals have also been achieved. Taxes on energy and transport have played a role, as well as active participation by the industrial sector in environmental agreements on reducing air pollutant emissions and improving energy efficiency. Air pollutant emission trading schemes are being developed. Ammonia emissions from agriculture were reduced by 15% between 1996 and 2002, partly due to the introduction of standards for manure storage facilities and manure spreading techniques. The proposed NO<sub>x</sub> emission trading scheme should be implemented.

However, greenhouse gas emissions have not yet been decoupled from economic growth. Ozone, NO<sub>x</sub> and fine particles still contribute to regional problems of photochemical pollution and acidification of ecosystems. Environmental agreements have not succeeded in meeting industry targets for NO<sub>x</sub>. New policy measures will be needed to address these concerns, particularly in the energy, transport and agricultural sectors. Despite some improvements in recent years, final energy consumption per unit of GDP in the Netherlands remains above the OECD Europe average. Measures taken have not been effective enough to increase the use of renewable energy sources. Limited progress in reducing air pollutant emissions has been made by small and medium-sized firms. There has been too little progress in the transport sector. N<sub>2</sub>O (nitrous oxide) emissions from agriculture have not been reduced.

It is recommended to:

- continue efforts to reduce emissions of NO<sub>x</sub>, particulate matter and NMVOCs (e.g. from transport, energy and industry) in light of persistent problems with concentrations of NO<sub>2</sub>, PM<sub>10</sub> and ozone in some areas; implement the proposed NO<sub>x</sub> emission trading scheme;
- pursue efforts to reduce ammonia emissions from agriculture;
- provide small businesses with appropriate enforcement mechanisms to address long-term emission objectives, particularly for ozone precursors and priority substances;
- continue to work towards increased energy efficiency;
- expand the use of renewable energy sources (e.g. in municipalities and large firms).

### 1.3 Water

The Netherlands has a large delta area at the estuary of several main European rivers. This clearly increases pressure on water pollution and flood management. The Netherlands' performance in reducing pressures on its water environment in the last ten years has been very good. In general, it has more than met the deadlines in the EU Urban Waste Water Treatment Directive for connections to the sewerage system and secondary treatment of waste water; 98% of the Dutch population is served by sewerage networks, all of which are connected to waste water treatment. The rate of removal of oxygen-demanding substances at public waste water treatment installations increased from 92 to 96% during the 1990s. Phosphorus and nitrogen removal is widespread. These achievements have required sustained financial efforts, particularly from households. The Netherlands has met North Sea targets for phosphorus and for most micropollutants and heavy metals. The 50% national reduction target for pesticide use has almost been met (47%). The Netherlands had the best overall performance among OECD countries with respect to decoupling pressures on the water environment from economic development and population growth. Strengthening of flood protection along major rivers, which repeatedly threatened to overflow their banks in the mid-1990s, is almost complete. Substantial progress has been made regarding most of the recommendations of the 1995 OECD Environmental Performance Review.

Yet the Netherlands' performance in reducing environmental pressures has still not been adequate to sustain the positive water quality trends of the 1980s and early 1990s. This partly reflects the high intensity of pressures on the water environment, which are often several times above the OECD average. These pressures in turn reflect the high intensity and density of economic activities such as agriculture and transport. Improvement of water quality stagnated during the latter part of the decade, mainly due to difficulties in tackling diffuse sources of pollution. Few surface or groundwater bodies meet basic water quality standards for several pollutants. The Netherlands did not quite meet the North Sea reduction targets for nitrogen. The impact of diffuse discharges, such as nutrients and pesticides from agriculture, emergency overflows from combined sewage systems and run-off from paved areas, remains severe. Nitrate standards for shallow groundwater are exceeded throughout the higher parts of the country. Implementation of measures to remedy groundwater depletion, which affects one-seventh of the total land area, has fallen short of targets. Further reduction of pressures cannot be achieved without a transition towards sustainable production processes, especially in agriculture. To achieve this transition, inter-sectoral economic efficiency should be given greater attention than in the past. If nothing more is done, sediments in watercourses contaminated by micropollutants and heavy metals will affect water quality for many decades to come. Safety issues remain paramount: expected rises in sea level, increasing discharges and continued land subsidence mean that the struggle to protect a population of which a large proportion lives below sea level can never be won once and for all.

It is recommended to:

- strongly pursue implementation of policies to allocate “more space for water”, establish ecological networks and better protect areas at risk (e.g. from floods); in particular, integrate water management, nature management and spatial planning;
- reinforce actions to combat groundwater depletion; complete and implement comprehensive provincial groundwater plans;
- further reduce nitrogen loads from intensive agriculture (livestock and crop production) in line with related international commitments (EU Nitrates Directive, North Sea action programme);
- strengthen efforts to achieve further progress in dealing with emergency overflows from combined sewers;
- continue efforts to safely dispose of and/or treat contaminated dredging spoil;
- continue to modernise the institutional framework for water management in line with the EU Water Framework Directive;
- give more attention to economic analysis of water management measures in different sectors (e.g. municipal, industrial, agricultural);
- strengthen inspection and enforcement relating to illegal discharges into the sewage system.

#### **1.4 Biodiversity, nature and landscape conservation**

Nature management is subject to comprehensive national policy planning (Nature Policy Plan) under the Ministry of Agriculture, Nature Management and Fisheries (LNV). The National Ecological Network (EHS) being established will include fragmented protected areas throughout the Netherlands, corridors to connect them, and large bodies of water such as North Sea coastal waters, the Wadden Sea, the IJssel Lake and the Delta. The annual rate of realisation of the EHS is increasing, but it remains below the target set by LNV to meet the objective of completion by 2018. Failure to meet the LNV target was mainly due to land scarcity and high land prices, as the network was largely created through land purchase and restoration by LNV. The emphasis is now moving from land acquisition to the signing of management contracts with landowners. Fourteen national parks have been established, and 50 000 additional hectares were given protected status in the 1990s. This, too, is below target. National protected areas are managed by the Dutch Forest Service (200 000 hectares) and NGOs (160 000 hectares). Forested areas increased by 23 000 hectares over the last decade. Phosphorous concentrations in surface water have decreased and are now in line with the NEPP target, mainly as a result of industry efforts. Biodiversity loss has been halted in some ecosystems, such as breeding habitats for migrating birds on farmland and woodland. Volunteers, often highly specialised, actively contribute to biodiversity monitoring. Open landscapes (polders in the west, cultivated grassland on peat soil in the north and west) are still relatively intact, but they are experiencing increasing pressure from urbanisation. Targets have recently been established to protect these areas. Awareness of nature conservation has grown over the decade, especially regarding demand for green areas in and around cities and for recreation in protected areas. The Netherlands has signed and ratified international agreements relating to nature and biodiversity.

However, these efforts are not always commensurate with the intense pressures on biodiversity, nature and landscapes from economic activities; in some cases they do not appear to lead to results consistent with national targets. This may require reviewing and possibly revising the institutional setting for biodiversity, nature and landscape conservation. Many species are still threatened, and biodiversity conservation has continued to deteriorate in ecosystems subject to eutrophic deposition and eutrophication (e.g. open dunes, heaths and coastal waters). Nitrogen deposition (the main component of eutrophic deposition) is still far above NEPP targets, reflecting high emissions of NO<sub>x</sub> from transport and ammonia

from agriculture. Acid deposition has been reduced but is still above the NEPP target. Overall, only 10% of Dutch natural areas are fully protected against acidification and eutrophication compared with a 2010 NEPP target of 20 to 30%. Desiccation due to agricultural drainage still affects 500 000 hectares, and restoration activities have been limited and are below target. Biodiversity is also under strong pressure from pollution by toxic substances: intensity of pesticide use remains largely above the OECD average; ambitious reduction targets were set recently. Water pollution by heavy metals and by hormone disruptors, as well as a lack of connections between water systems, affect aquatic life. In coastal areas little has been done to protect nature effectively; despite the 1995 OECD recommendation, there are no established marine reserves (plans are in discussion). Mud fishing (bottom trawling) is still practised in the North Sea, which has an impact on sea floor habitats. Residential areas have continued to be developed at the expense of natural areas, leading to the adoption of additional spatial planning regulations. It is unclear whether the objective of devoting one-third of the inland EHS entirely to nature conservation will be met. Further efforts are needed to fully implement the EU Birds and Habitats Directives. Amendment of the Nature Conservation Act to fully transpose the Birds and Habitats Directives was submitted to Parliament. Nature management has been integrated into agricultural policy with mixed results. While they fall under the same parent ministry, EU farm subsidies targeted at supporting agricultural production are much larger than public expenditure on nature protection. Agri-environmental measures have focused more on controlling diffuse water pollution than on converting farmland to wildlife habitats (mainly meadows), though payments to farmers are being increased to meet the conversion target of 110 000 hectares by 2020.

It is recommended to:

- complete establishment of the national ecological network according to targets, taking account of requirements of the EU Birds and Habitats Directives;
- achieve the target of 20 to 30% of natural areas fully protected against acidification and eutrophication, particularly by reducing pressures from agriculture and the waste water industry;
- reinforce implementation of nature conservation objectives in agricultural policy, particularly by meeting reduction targets for pesticide use, ammonia emissions and desiccation, speeding up farmland conversion in natural areas, and tackling diffuse water pollution by nitrogen compounds;
- reinforce implementation of nature conservation objectives in water policy, particularly by reducing water pollution by toxic substances, developing connections among water systems and setting ecological quality objectives for water bodies;
- enhance nature protection in coastal areas, particularly through better control of mud fishing and establishment of marine reserves, in the framework of the OSPAR Convention;
- strengthen efforts to integrate biodiversity, nature and landscape conservation among themselves and with spatial planning.

## **2. Towards Sustainable Development**

### **2.1 *Integration of environmental concerns in economic decisions***

Dutch performance in terms of reducing emissions and environmental pressures over the last decade has been strong. This performance should be seen in the context of sustained GDP growth of 35%, and of liberalisation and greater European and international integration of the country's economy. Overall, pollution abatement and control expenditure has been growing, from 1.9% of GDP in 1990 to 2.6% in 2000. This share, which is expected to remain stable during the next three years based on existing and proposed policy measures, is large by OECD standards and reflects a high level of environmental pressure and readiness to commit resources to mitigation. There is no evidence that this expenditure has affected the

competitiveness of the Dutch economy. Concerning institutional integration, there has been good progress with respect to integration of sustainability into the thinking and activities of a range of government and private sector actors (as demonstrated, for example, in the 1997 policy document on Environment and Economy). Considerable reliance is now being placed on some high-level guiding principles set out in the fourth National Environmental Policy Plan (NEPP4), some high-level sustainable development principles, and the concept of “transition management” and “transition processes” within a sustainable development goal-setting and backcasting framework. The characteristically Dutch “polder model” approach of dialogue between the government and stakeholders to develop environmental policy has been successful. There is recognition of the need to address areas in which progress remains to be made, as shown in environmental and sustainable development planning documents. Concerning market-based integration, the Netherlands has expanded its use of economic and fiscal instruments and, overall, is implementing the polluter pays and user pays principles despite the exemption of many companies from environmental taxes (e.g. energy taxes) in an attempt to preserve competitiveness. The recent ecological tax reform represents significant progress, with a shift from taxation of labour and income. The various environmentally related Dutch fiscal instruments now account for 14% of total tax revenue.

However, decoupling environmental pressures from economic growth has proven elusive, particularly for CO<sub>2</sub> emissions, municipal waste and the impacts of urban sprawl, including continuing pressures on biodiversity. Among other residual problems are the levels of particulate matter and ozone, the backlog of contaminated sites, groundwater quality and noise. Also of concern is the review or postponement of some targets that have been hard to meet (e.g. for NO<sub>x</sub> and ammonia), as well as the risk that some more difficult targets (e.g. for groundwater) may not be met. The Dutch Central Economic Planning Agency has noted that goals with respect to the country’s manure problem were not met due to a reluctance to implement policy forcefully enough. The general planning approach used in the Netherlands requires a very high degree of co-ordination among national ministries. Environmental plans must be co-ordinated with a number of national sectoral plans, the more so as the Ministry of Housing, Spatial Planning and the Environment (VROM) is responsible for only some environmental policy areas. Integration of environmental policies into other national policies is laid down in the NEPPs. However, policy integration has not yet been reflected in markedly better environmental performance in key sectors such as agriculture and transport. The high levels of production and consumption of the Netherlands continue to lead to large environmental effects outside of the Netherlands. Overall, the government’s goal of reaching sustainability by 2010 (i.e. within one generation at the time this goal was set) appears increasingly difficult to achieve, particularly for the agriculture and transport sectors. Strong and continuing political determination and support by the public will be indispensable in this respect.

It is recommended to:

- implement environmental plans and objectives with determination;
- strengthen institutional integration, particularly to ensure that a sustainable development framework is firmly embedded in central, provincial and local government and across key sectors, notably energy, agriculture and transport;
- refine the market based instruments and extend the environmental tax system, having regard to simplicity, effectiveness, transaction costs and carrying out cost-benefit analysis;
- couple the regulatory energy tax with pollutant emissions (carbon tax) and consider its extension to large companies in the case of non-compliance with environmental targets;
- undertake environmental assessment earlier in the decision-making process to influence choices concerning plans, policies and programmes;
- extend the use of spatial planning and regulation to serve pollution abatement, nature, biodiversity and landscape conservation as well as risk prevention;
- maintain investment and efforts in environmental research and development.

## 2.2 *Integration of environmental and social concerns*

The Netherlands is making strong efforts to inform and educate the public about environmental protection. The quality of environmental information is high, and reporting activities and access to this information are well established. The public also has good access to the courts concerning environmental matters. Public debate and public participation in decision-making are quite well developed. Dutch environmental research and development are influential at the national and international levels, with respect to both technical matters and policy issues. A tradition of openness and transparency in policy-making and goal setting is maintained for the benefit of civil society. Key documents like the National Strategy for Sustainable Development, the National Environmental Policy Plans (NEPPs) and the annual “balance” reports present environmental issues using a forward looking approach.

However, environmental employment represents only 1.3% of total employment, a figure which could be higher if there were a more active environmental employment policy. Local Agenda 21 initiatives have produced mixed results. Low-income groups experience above average severe noise nuisance and local air pollution, while their neighbourhoods often do not have as much green space as more prosperous areas. The number of large-scale accidents has increased in recent years; thus so have threats to external safety. People living near airports and large chemical installations are particularly exposed to risks of accidents. Health risks related to air pollutants have decreased but still remain a problem; 2.5% of the population is exposed to levels of NO<sub>2</sub> above the limit value (4% for fine particles PM<sub>10</sub>). Noise nuisance has remained a health concern in the Netherlands. Natural habitats and valuable landscapes have been lost to urban development, reducing public access to natural resources, recreation and silence.

It is recommended to:

- strengthen measures to improve external safety in relation to transport (e.g. air traffic, railways, transport of hazardous substances) and chemical installations;
- strengthen efforts to improve the quality of the living environment with respect to noise nuisance, air pollution and access to green areas for recreation, especially in the case of low-income groups;
- further maintain a high-quality environmental information base and ensure continuity in environmental reporting activities;
- make further efforts to increase environmental awareness and sustainable behaviour, particularly regarding car and energy use;
- continue to promote public participation in decision-making and goal-setting processes (e.g. at an early stage), both at national and local levels;
- ensure that national environmental policy links up with relevant local sustainable development initiatives;
- encourage sustainable development initiatives in the framework of Local Agenda 21, particularly in relation to mainstream local activities (e.g. housing, infrastructure, etc.).

## 2.3 *Integration of environmental concerns in transport decisions*

Until recently, the level of integration of environmental, transport and spatial planning in the Netherlands has been commendable. Environmental concerns have been incorporated into transport policies. Regarding vehicles and fuels, air emissions have been reduced in line with EU Directives. The Netherlands has introduced fuel efficiency labelling. In 2002 purchase tax discounts were granted for the most fuel-efficient (lowest CO<sub>2</sub> emitting) cars. Introduction of more environmentally friendly fuels and

other technological innovations have contributed to the reduction of some harmful emissions (e.g. lead, SO<sub>2</sub> and NO<sub>x</sub>). Despite a significant increase in traffic volume, emission reductions have been notable. With respect to traffic management, car-restricted and bicycle- and pedestrian-friendly town centres have a long tradition and are still favoured in local land use planning. In some cases only delivery vehicles and buses are allowed to enter urban zones. Speed limit enforcement has been stepped up considerably, for safety and pollution reasons. Eco-driving (fuel-efficient driving) has been encouraged through training of drivers and incentives to buy vehicles equipped with devices to enhance fuel efficiency. Innovative parking policy is based on pricing and regulations (e.g. a limited number of parking spaces for employees). The level of service provided by the Dutch public transport system could serve as a model for a number of other OECD countries. Fuel taxation has been reviewed and revised, and fiscal advantages for those commuting by car have been eliminated. Concerning infrastructure, EIA is used with extended consultation.

However, the Netherlands is not yet moving towards sustainable transport. Integration of environmental concerns, land use planning and sustainable development in transport policy and planning is not commensurate with the country's ambitious transport development plans and efforts to maintain the Dutch share in international transport. Compared with the early 1990s, there are currently fewer environmental targets, and most are less ambitious; some targets have been abolished (e.g. for CO<sub>2</sub> emissions) or postponed (e.g. noise), and others have been extended (e.g. NO<sub>x</sub>) or strengthened (e.g. VOCs). Implementation and enforcement of environmentally beneficial transport policies and measures have not always been coherent and resolute. CO<sub>2</sub> emissions from road traffic have increased dramatically, despite the wide range of economic instruments adopted to discourage private car use. Urban and transport development strategies have not succeeded in reducing traffic volumes for passenger cars. To reduce transport emissions, the Netherlands mainly relies on technological innovations by non-Dutch vehicle and airplane manufacturers. Noise emissions from road vehicles, rail and aviation are spreading. The 1998 agreement on lowering the speed limit in the Randstad area has not been implemented. There is no political consensus on road pricing nor on a per-kilometre tax. Attempts to develop instruments to better control emissions from inland and ocean shipping and aviation have had marginal results while awaiting common or technology-related standards and effective agreements at international level (e.g. on taxation of aviation and bunker fuels, emission standards for heavy-duty diesel engines used in locomotives and ships).

It is recommended to:

- strengthen or revive efforts to integrate environmental and sustainable development concerns into transport policy;
- further internalise externalities into transport operation and pricing: strengthen the use of existing economic instruments and introduce new ones, such as the suggested per-kilometre tax on lorries and cars (with differentiated rates according to time, place and the environmental impact of each vehicle) or other relevant instruments;
- work towards eliminating domestic and international distortions in competition among transport modes (e.g. subsidisation, taxation, standards), including within the EU, IMO and ICAO;
- pursue efforts to reduce noise emissions from road, rail and air traffic (e.g. emission reduction at source);
- urgently define and implement a package of measures to reduce CO<sub>2</sub> emissions from freight and passenger transport;
- continue to improve accident prevention and preparedness in the transport of hazardous substances.

### 3. International Co-operation

The Netherlands has continued to play a leading, proactive role in the development and implementation of international environmental laws reflecting the regional and global interdependencies of its environment and economy. These efforts have been carried out in the interest of the international community, as well as in the Netherlands' own interest. Concerning climate change, the Netherlands was very active in helping to achieve progress towards the entry into force of the Kyoto Protocol. It succeeded in bringing about a relative decoupling of its CO<sub>2</sub> emissions from GDP growth, largely due to a 14% decrease in the energy intensity of the Dutch economy between 1990 and 2000. By significantly reducing emissions of NO<sub>x</sub>, SO<sub>x</sub> and NMVOCs, the Netherlands has more than met its reduction targets under the Oslo, Sofia and Geneva Protocols to the LRTAP Convention. It continues active enforcement of marine agreements. It carries out regular surveillance and enforcement in its Exclusive Economic Zone (EEZ) against illegal dumping or discharges from ships. At least 25% of foreign ships calling at Dutch ports are consistently inspected for compliance with MARPOL standards. The Netherlands reduced point source discharges of nitrogen and phosphorous to the North Sea to the extent of being on track to meet its North Sea Conference targets. Partly due to a successful environmental agreement with offshore oil and gas producers, the frequency and magnitude of oil spills and flaring have been reduced; fugitive methane emissions have been limited and compliance with OSPAR limits on oil in effluents has improved. Based on its experience with a prior informed consent (PIC) system to regulate exports of dangerous chemicals to developing countries, the Netherlands played a key role in developing the 1998 Rotterdam PIC Convention. It is one of the few countries that consistently meet UN targets for official development assistance; it also meets its own national commitment regarding the environmental component of its ODA.

Despite these impressive achievements, the Netherlands could improve its performance in meeting several international environmental commitments. It failed to meet its national target for stabilising CO<sub>2</sub> emissions at their 1990 level by 2000. The ancillary benefits of domestic climate protection measures were not taken into account when preliminary targets were established for realising 50% of the country's Kyoto commitment through domestic measures. The polluter pays principle (PPP) has not been integrated into early plans to use the Kyoto mechanisms. New reduction targets concerning transboundary air pollutants under the Gothenburg Protocol and the EU National Emission Ceilings (NEC) Directive will require implementation of additional domestic control measures. Stricter standards established in 2000 under MARPOL Annex VI are likely to necessitate tighter control of atmospheric SO<sub>x</sub> emissions in the offshore zone. To comply with the EU Nitrates Directive, the Netherlands will need to strengthen control of nitrogen emissions from agriculture. It should accelerate efforts to designate marine protected areas, so as to implement the Habitats Directive fully in its 200-mile EEZ. In line with FAO recommendations, it has attempted to implement vessel decommissioning schemes to reduce fishing capacity but with little success thus far. Shared and straddling marine fish stocks in the North and Wadden Seas need to be restored: many of these stocks are classified as "outside biologically sustainable limits." Progress towards Objective 2000 of the International Tropical Timber Organisation (ensuring that all imported hardwood comes from sustainably managed forests) appears to have lost momentum. While development assistance projects are expected to comply with host country requirements concerning the application of environmental impact assessment, the Dutch government does not require systematic application of EIA for these projects.

It is recommended to:

- take into account ancillary benefits of reducing SO<sub>x</sub> and VOC emissions when assessing the cost-effectiveness of potential greenhouse gas (GHG) reduction measures, and develop means to implement the polluter pays principle through the Kyoto mechanisms;
- take steps to ensure full implementation and enforcement of new international commitments concerning port reception and ship-generated wastes and cargo residues;
- continue to work in international fora to promote management of shared and straddling marine stocks in the North Sea following an ecosystem management approach;
- put an end to illegal trade in ozone depleting substances;
- co-operate internationally to develop means of ensuring that timber and wood products imported to the Netherlands originate from sustainably managed tropical and boreal forests;
- strengthen and generalise requirements concerning environmental impact assessment, to apply to all major projects financed through international assistance (ODA and non-ODA);
- ratify and implement recent international environmental agreements.