



## A New Strategy for the Environment

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### Introduction

Pressures on the environment have been high in the recent past both in OECD countries and globally. While economic, social and technological developments over the next few decades are likely to reduce some of these pressures, others will increase, sometimes significantly. To help OECD countries address this problem, the organisation has produced an *Environmental Outlook* identifying a number of environmental problems that will need to be addressed urgently in the coming decade. Based on this information, OECD Environment Ministers agreed an ambitious *Environmental Strategy for the First Decade of the 21st Century* when they met in Paris on 16 May 2001. Underlying the *Strategy* is a need to further develop environmental policy to help ensure that economic growth does not come at the price of environmental degradation in OECD countries, while also being responsive to non-member countries in their search for sustainable development. ■

### How serious is the problem?

For many years, OECD countries have been trying to tackle environmental problems. There have been major improvements in some areas, such as reducing ozone-depleting chlorofluorocarbon (CFC) emissions. In other cases, such as water quality in lakes and rivers, there has been some progress but not yet enough, while problems such as overfishing and greenhouse gas emissions call for urgent action to reverse negative trends. The OECD has used a “traffic lights” system to identify these three categories of environmental problems.

“*Green light*” environmental issues or pressures are those where OECD countries have experienced some positive trends, but should “proceed

As the 21st century begins, OECD countries are taking stock of their natural resources, the damage that is being done to the environment, and what actions they can take to ensure a clean, healthy and productive environment to pass on to future generations. This Policy Brief draws on the OECD’s *Environmental Outlook* report, which projects the likely environmental changes in OECD regions to 2020, and the *OECD Environmental Strategy for the First Decade of the 21st Century* that has just been adopted by OECD Environment Ministers to address the main environmental problems they face.

with caution". They include reducing emissions of air pollutants such as lead from petrol and emissions of ozone-depleting CFCs, reversal of deforestation trends in OECD regions, and reductions in pollution from industry. "Green" purchasing of environmentally friendly goods and products is gaining ground, and organic agriculture and other environmentally friendly farm practices are spreading rapidly. At the same time, energy and resource efficiency is increasing in many OECD countries.




"Yellow lights" are given to environmental issues or pressures that pose a potential problem or where prospects are uncertain. They include water use in OECD countries, which is expected to continue to rise in total to 2020, despite reductions in use per person. Similarly, while there have been significant improvements in surface water qual-

ity in OECD regions, few OECD countries satisfactorily meet basic water quality objectives. And, although CFC emissions have decreased significantly in recent years, the ozone layer continues to become thinner as past emissions gradually reach the stratosphere. Current data or scientific understanding are also inadequate for many environmental concerns. Thus, effects on human health and ecosystem functions due to toxic emissions from industry are still uncertain and poorly understood. Data on hazardous waste generation in OECD countries have not been reliably collected, so recent trends are difficult to discern, although there are some indications that hazardous waste generation has been increasing. Similarly, with respect to many aspects of modern biotechnology, the potential effects on both human and ecological

health are still poorly understood. While intensive production of renewable resources, such as through both aquaculture and plantation forests, can help to alleviate pressures from increased fish and forest product demand on the natural resource base, both have potentially negative effects on local ecosystem quality.

But of most concern are the "red light" issues signalling major problem areas that need to be addressed urgently. Many of these relate to global issues – the state of environmental resources or the pollution "sinks" (*i.e.* the capacity of the environment to accept and assimilate pollution) of global significance, for which OECD countries are only some of the users or polluters. Overfishing is a clear example of a "red light" issue of global importance: a quarter of the world's

### Signals of the OECD Environmental Outlook

	GREEN LIGHT	YELLOW LIGHT	RED LIGHT
			
PRESSURES ON THE ENVIRONMENT	<ul style="list-style-type: none"> <li>• Industrial point source pollution</li> <li>• Some air pollutants (lead, CFCs, carbon monoxide, sulphur dioxides)</li> </ul>	<ul style="list-style-type: none"> <li>• Water use</li> <li>• Toxic emissions from industry</li> <li>• Hazardous waste generation</li> <li>• Energy production and use</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural pollution</li> <li>• Over-fishing</li> <li>• Greenhouse gas emissions</li> <li>• Motor vehicle and aviation air pollution emissions</li> <li>• Municipal waste generation</li> </ul>
STATE OF THE ENVIRONMENT	<ul style="list-style-type: none"> <li>• Forest coverage in OECD regions</li> </ul>	<ul style="list-style-type: none"> <li>• Surface water quality</li> <li>• Forest quality in OECD regions</li> <li>• Ozone layer integrity</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity</li> <li>• Tropical forest coverage</li> <li>• Fish stocks</li> <li>• Groundwater quality</li> <li>• Urban air quality</li> <li>• Climate change</li> <li>• Chemicals in the environment</li> </ul>
SOCIETAL RESPONSES	<ul style="list-style-type: none"> <li>• "Green" purchasing</li> <li>• "Green" agriculture</li> <li>• Protected areas</li> <li>• Resource efficiency</li> <li>• Energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Biotechnology</li> <li>• Forest plantations</li> <li>• Aquaculture</li> <li>• Energy and transport technologies</li> <li>• Waste management</li> </ul>	

marine fisheries are already exhausted, over-fished, or recovering from overfishing, and a further half are fished to their limit. Global deforestation is another serious problem, as is biodiversity loss. Efforts in OECD countries to improve conditions at home are steps in the right direction, but insufficient to dominate the global trends, with non-OECD regions expected to lose almost a further 10% of their forested area by 2020.

Climate change as a result of greenhouse gas emissions is, arguably, one of the most important “red light” issues faced by OECD countries. Despite commitments to reduce emissions, the release of total greenhouse gases in OECD countries is expected to continue to increase to 2020, with emissions from non-OECD countries also growing rapidly. Under current policies, OECD countries are likely to increase carbon dioxide (CO<sub>2</sub>) emissions by a third to 2020. Stronger policies to tackle this problem are urgently required if the worst effects of climate change are to be averted. Energy use and transportation are the main contributors to greenhouse gas emissions, as well as to various air pollutants that lead to urban air pollution. If current policy patterns continue, the impacts on climate change of these activities are likely to continue in OECD countries and worldwide to 2020, with motor vehicle kilometres travelled in OECD countries expected to increase by 40% from 1997 to 2020, and world passenger air kilometres expected to triple. Meanwhile, energy use in OECD regions is expected to increase by 35% to 2020.

While groundwater pollution has not been a major concern for OECD countries in the past, it is increasingly becoming one now, with agri-

cultural pollution one of the main sources. As human populations will need to draw more and more upon groundwater sources for drinking water and other uses in the future, the build-up of nitrates and other pollutants in these sources will pose a growing problem. Nitrogen loading to waterways from agriculture in OECD countries is expected to increase by more than a quarter, and persistent and toxic chemicals are expected to continue being widespread in the environment over the next 20 years, causing serious effects on human health. ■

## What can be done to improve matters?

What can policy-makers do to tackle these environmental problems? For a start, they need to look at examples where improvements have already taken place or are starting to happen. Improvements have often been linked to pricing incentives or regulatory intervention. Recent reductions in water use have been most pronounced in countries that have removed subsidies for water use and applied charges that better reflect the marginal costs of water supply. Similarly, the main reductions in the energy intensity of OECD economies, while not driven by environmental policy, occurred during the major oil price shocks of the 1970s when energy prices increased rapidly. Government regulations and restrictions have been particularly successful in reducing industrial pollution, cleaning up the worst polluted surface waters, and reducing the levels of some air pollutants, for example the phasing out of the use of CFCs. Direct intervention by governments has also been successful in increasing the size and

number of natural areas in OECD countries that are conserved or where only restricted use is allowed, protecting ecosystems and biodiversity. In other cases, government policies can facilitate environmentally beneficial changes in consumption patterns. This is true for the development of organic agriculture and other environmentally sustainable agricultural practices, the rapid growth of which in OECD countries is partly due to greater consumer demand, and partly to government support. In general, growing public access to environmental information and the policy-making process can help to inform individual consumption choices and increase support for environmental policies.

To some extent, the most tractable environmental problems have already been dealt with. The problems of the future are likely to be more complex, and their resolution will require more difficult trade-offs and greater international co-operation. The OECD's *Environmental Outlook* offers examples of appropriate policy instruments for addressing each “red light” problem, and – where possible – their potential effects are quantitatively assessed. It is often difficult to design a single policy instrument that will successfully provide the right incentives for a total reduction in resource use or in pollution and waste generation. Instead, it will generally be necessary to employ a mix of policy instruments combining a robust regulatory framework with a variety of other instruments. These could include stronger pricing mechanisms to influence the behaviour of consumers and producers, voluntary agreements, tradable permits, eco-labels and other information-based incentives, land use regulation and infrastructure provision.

In particular, the OECD recommends the removal of environmentally harmful subsidies and a more systematic use of environmental taxes, charges and other economic instruments to “get the prices right”. A policy simulation was undertaken for the *Environmental Outlook* to address a number of the “red light” issues identified. The simulation combined the removal of subsidies in place in OECD countries with the application of a tax on energy use (adjusted for the carbon content of the fuels) and a tax on chemical use. The environmental impact of such a policy mix was found to be substantial, with carbon dioxide (CO<sub>2</sub>) emissions projected to be 15% lower in 2020 compared with a business-as-usual scenario, while sulphur oxide (SO<sub>x</sub>) emissions were projected to be 9% lower, methane emissions 3% lower and nitrogen pol-

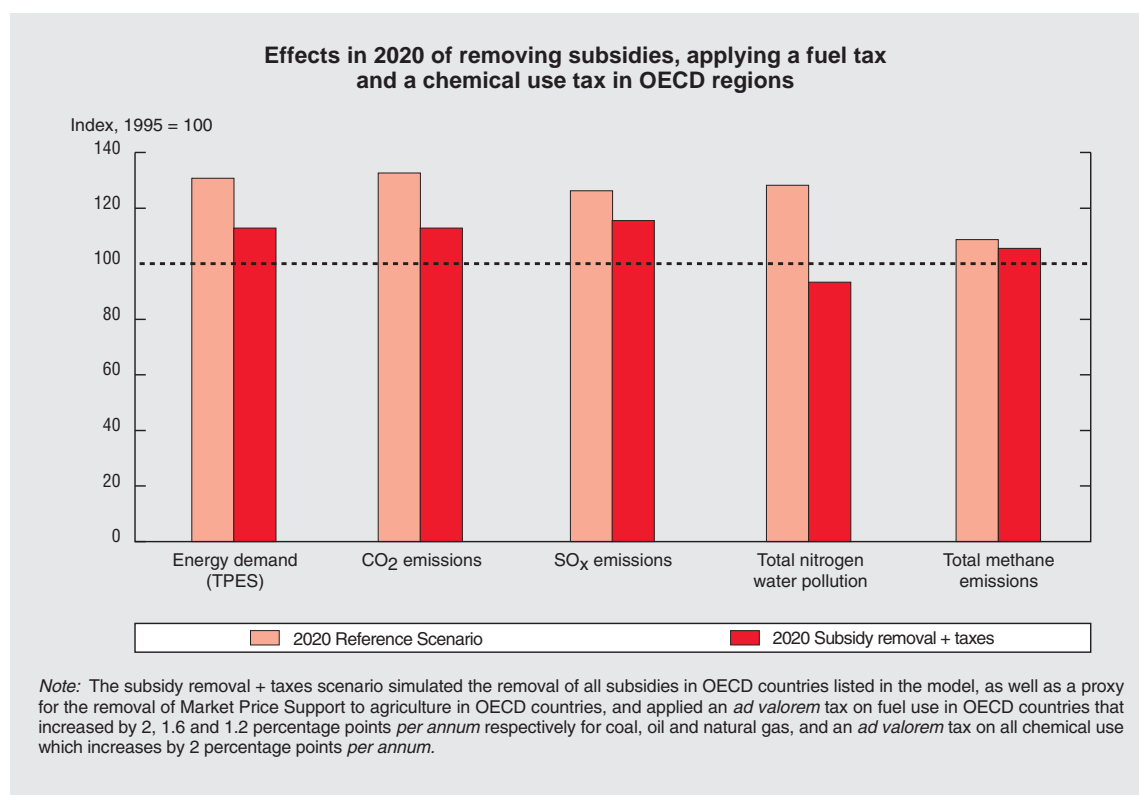
lution to waterways 30% lower. With this policy package, the economic costs of achieving these environmental benefits were estimated to be marginal – resulting in a total GDP level less than 1% lower in OECD regions overall in 2020 than under business-as-usual. Thus, overall GDP in OECD regions was projected to grow by 60% between 1995-2020 with the policy package, compared with a 61% increase under business-as-usual. ■

## What are the key environmental objectives?

The analysis of environmental policies and policy “mixes” undertaken for the *Environmental Outlook* provided the underlying analytical basis

for the national actions identified in the *OECD Environmental Strategy*. Focussing on the most pressing environmental concerns facing OECD Member countries, the *Strategy* identifies five inter-linked objectives to enhance cost-effective and operational environmental policies in the context of sustainable development. They are:

1. Maintaining the integrity of ecosystems through the efficient management of natural resources.
2. De-coupling environmental pressures from economic growth.
3. Improving information for decision-making by using indicators to measure progress.
4. Enhancing the quality of life: The social and environmental interface.



5. Improving governance and co-operation: Global environmental interdependence.

For each of these Objectives, the *OECD Environmental Strategy* identifies the challenges for the next decade, the national actions countries agree to take to address the main environmental problems they face, the indicators that can be used to measure their progress, and the work OECD will undertake to support them. OECD Environment Ministers adopted the *OECD Environmental Strategy for the First Decade of the 21st Century* when they met in Paris on 16 May 2001. Progress by Member countries towards achieving these five objectives will be regularly measured and reviewed by the OECD over the coming years. ■

## How to maintain ecosystems?

Maintaining the integrity of ecosystems through the efficient management of natural resources is a key objective for OECD Member countries for the next decade. Ecosystems are finite and vulnerable, their capacity to act as sinks for pollutants and waste is limited, and efficient use of natural resources should aim for their conservation. Unsustainable production and consumption patterns are increasingly threatening the health of global ecosystems and biological diversity, climate patterns and the global environment. Human pressures on the environment are not expected to ease unless strong policy actions are taken to protect ecosystems and maintain the essential services they provide. OECD countries will need to remove or reform subsidies and other policies that encourage unsustainable use of natural resources and ensure the full costs of

natural resource use are taken into account through market and other policy instruments, reflecting the User Pays Principle and the Polluter Pays Principle. The *OECD Environmental Strategy* sets out national actions for “getting the prices right” for the environment in this way by 2010, beginning with the agriculture, transport and energy sectors. Such policies will need to be developed in close co-operation with other stakeholders, such as business and non-governmental organisations (NGOs), indigenous people and local communities. They should take into account global and regional as well as national and local concerns.

To reduce greenhouse gas emissions and increase carbon dioxide-absorbing sinks, OECD governments will need to meet all their objectives under the UN Framework Convention on Climate Change, and continue to work through international processes to take forward its objectives. As emphasised in the *OECD Environmental Strategy*, for a large majority of OECD countries this means seeking entry into force of the Kyoto Protocol by 2002, with timely ratification processes, and with the broadest support of the international community. OECD countries will need to create incentives for emission reductions through technological and social innovation, giving priority to market-based instruments such as subsidy removal and green tax reform, tradable emission permits, as well as sector policies. They will have to develop and implement effective policies to mitigate greenhouse gas emissions, including from the production and use of energy in electricity generation, energy intensive sectors of the economy, and transport. The *OECD Environmental Strategy* asks the OECD to help

countries to implement domestic policy responses to climate change. It also asks them to facilitate dialogue and support analysis among OECD and non-OECD partners on the economic, environmental, developmental and social connections between sustainability and climate change strategies; and to contribute to the exchange of information on climate change policies.

OECD governments will also need to ensure access for all to safe drinking water and adequate sanitation in the coming decade, while achieving agreed water quality targets. Additional targets and measures will be necessary to ensure that the ecological value of water resources is maintained. The *OECD Environmental Strategy* also stresses the need for governments to take further measures to ensure the maintenance, restoration and enhancement of biodiversity – including landscapes, ecosystems, species and genetic materials. To significantly reduce threats to ecosystems and their species, biodiversity concerns will need to be better integrated into physical planning activities and other policies. The implications of biotechnologies (e.g. genetically modified organisms, GMOs) will need to be assessed and measures taken to prevent the introduction of invasive species to ensure biosafety. ■

## What about de-coupling environmental pressures from economic growth?

De-coupling environmental pressures from economic growth to ensure that continued economic growth is accompanied by enhanced

environmental quality, is urgently needed in OECD countries. OECD countries will need to make sure that the net effect of de-coupling across all economic sectors combines to ensure that the criteria of environmental sustainability are met. This means respecting the regenerative and assimilative capacity of the environment, avoiding irreversible effects on ecosystems, and ensuring that substitution possibilities exist for non-renewable resources.

In *agriculture*, an over-arching challenge is to progressively decrease the negative environmental effects of agricultural production, while ensuring sufficient and safe agricultural production to feed the world's population. The *OECD Environmental Strategy* emphasises that OECD governments should ensure that all costs, including environmental and social, are included in the pricing of resources such as irrigation water, and promote sustainable farming systems and environmentally sound farm management practices, including organic farming. OECD governments have agreed to phase out or reform by 2010 those agricultural policies and subsidies that have environmentally damaging effects.

Insufficient progress has been made towards achieving environmental sustainability of the *transport sector*. It is an urgent priority to substantially reduce the serious health and environmental effects, in particular regarding climate change and air pollution, stemming from high growth in both freight and passenger transport. Again, OECD governments will need to work towards effective and full internalisation of the environmental costs of transportation as well as to develop and use cost-effective demand-side management tools and land use planning to

reduce the need to travel and encourage more sustainable transport methods.

In general, environmental degradation has been increasing at a slightly slower rate than economic growth. However, overall environmental degradation has persisted in most areas as the effects of total increases in production and consumption have outweighed the resource efficiency gains. For example, OECD countries are expected to reduce the energy intensity of their economies by 20% to 2020, while increasing total energy use by 35%. To realise total reductions in the negative environmental impacts of energy use, OECD countries will need to achieve more significant changes in the fuel mix than are currently foreseen, with greater replacement of the more polluting fossil fuels by renewable resources and cleaner fuels. ■

## Can environmental indicators help?

At both national and international level, environmental policies should be based on environmental indicators and data related to pressures and the state of the environment that reflect the interests and needs of citizens and decision makers. The use of indicators is most effective when directly related to nationally or internationally agreed time-bound quantitative targets for the interim and long term. The OECD will continue to assist Member countries through the development of consistent frameworks, methodologies, and in measuring performance, and facilitating the development of time-bound quantifiable targets related to the indicators. Member countries need to have monitoring programmes in

place to ensure the collection of scientifically valid and comparable data to support these indicators. ■

## How to improve the quality of life?

Perhaps some of the most significant effects of environmental degradation from a social and economic perspective are the effects on human health. It is estimated that environment-related effects on health – such as increased asthma and respiratory diseases from urban smog, skin cancer from a thinner ozone layer, and poisoning through chemicals in the environment – may amount to as much as 2-6% of total health-related expenditure in OECD countries per year. Greater efforts are needed to address the social and environmental interface, focused on health and safety, urbanisation and spatial development, environmental equity, environment and employment, participation and environmental education. Providing equitable access to environmental services and natural resources is also important, *e.g.* for poverty alleviation and employment creation and in the context of co-operation with developing countries. The *OECD Environmental Strategy* asks the OECD to support Member countries in examining these issues and developing indicators to assess the social and environmental interface, and policies and instruments to address the problem areas. ■

## What can be done internationally?

Concerted action is needed to better manage the environmental effects of globalisation through

improved national and international environmental governance. Stronger efforts are needed to ratify, implement, and ensure compliance with and enforcement of existing Multilateral Environmental Agreements (MEAs) and instruments. Improved co-operation and coherence between existing MEAs should also be promoted. In addition, the charters, policies and activities of international economic and financial institutions, as well as the agreements they administer, should actively support environmental policies.

With increasing globalisation of production systems, industry can also make an important contribution to improving environmental governance. Through non-binding instruments, such as the OECD Guidelines for Multinational Enterprises, corporations are encouraged to adopt higher standards of performance in many areas of their operations, including environmental performance.

Over time, non-OECD countries will account for an increasing share of environmental pressures at

regional and global levels. Action by OECD countries to combat these pressures will only be effective if accompanied by strengthened environmental performance in non-member countries. OECD countries have an important role to play in helping to build capacity in non-member countries and working with other countries to develop effective and equitable burden-sharing arrangements for addressing global environmental problems, recognising their common but differentiated responsibilities. ■

## For further reading

- OECD Environmental Strategy for the First Decade of the 21st Century, 2001  
Free on Internet: [www.oecd.org/env/min/2001/products/EnvStrategy.pdf](http://www.oecd.org/env/min/2001/products/EnvStrategy.pdf)
- OECD Environmental Outlook, 2001  
ISBN: 9264186158, USD 65, 328p.
- OECD Environmental Outlook for the Chemicals Industry, 2001  
Free on Internet: [www.oecd.org/ehs/ehsmono/RealfinalChemIndustryOutlookwithcovers.pdf](http://www.oecd.org/ehs/ehsmono/RealfinalChemIndustryOutlookwithcovers.pdf)
- Environmental Performance Reviews: Achievements in OECD Countries, 2001  
ISBN: 9264182942, USD 19, 128p.

## Additional Information

- For more information about the work of the OECD Environment Directorate, please consult our Internet site at [www.oecd.org/env/](http://www.oecd.org/env/).

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