

Highlights of OECD Work on the Environment



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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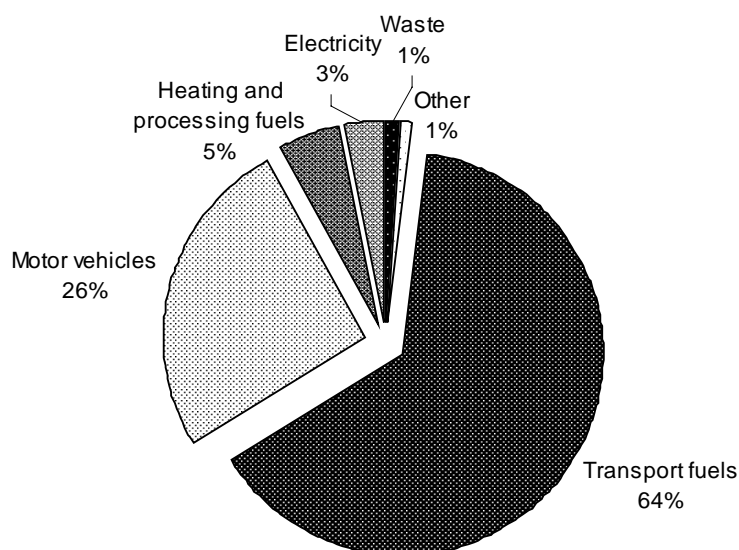
ENVIRONMENTALLY RELATED TAXATION IN OECD COUNTRIES

The revenue from environmentally related taxes averages roughly 2% of GDP in OECD countries.

Over the last couple of decades, economic instruments have been playing a growing role in environmental policies of OECD countries. A distinctive feature is the increasing use of environmentally related taxes, defined as any taxes levied on environmentally relevant tax-bases, such as emissions to air or water, energy sources, motor vehicles, waste, etc.

The revenue from environmentally related taxes averages roughly 2% of GDP in OECD Member countries. Taxes on the purchase or use of motor vehicles and fuels, including taxes on petrol and diesel, generate most of the revenues. In some countries taxes are also used to address a broad spectrum of other environmental problems. Nevertheless, there is scope for expanding the use of environmentally related taxes in most OECD countries.

**Share of different tax-bases in total revenue raised by environmentally related taxes
21 OECD Member countries, 1995**



Green Tax Reform

An increasing number of countries are implementing comprehensive green tax reforms, and others are contemplating doing so. Green tax reforms can include restructuring existing taxes to reflect the polluting characteristics of the different products or activities, the introduction of new taxes – e.g. on water use, water pollution, waste, certain chemicals – and the removal of environmentally harmful tax exemptions and subsidies. Due notice should, however, be given to the non-environmental – e.g. social or economic – objectives these provisions were meant to serve.

The tax revenues can alleviate a budget deficit, contribute to a budget surplus, or finance discretionary increases in government expenditures. The revenues can also provide room for reductions in other taxes to reduce market distortions, address competitiveness concerns, or to increase the public acceptance of environmental taxes.

There is growing evidence of the environmental effectiveness of green tax reform.

In the context of the Joint Meetings of Tax and Environment Experts, OECD fiscal and environment experts have prepared a report on *Environmentally Related Taxation in OECD Countries: Issues and Strategies* (2001). The report documents the growing evidence of the environmental effectiveness of environmentally related taxes. The responsiveness of demand to changes in prices, for example of energy, is often significantly higher in the long run than in the short run, implying that a consistent long-term implementation of environmentally related taxes could reduce energy consumption and improve the environment.

Perceived impacts on sectoral competitiveness and on low-income households are important obstacles to implementation...

The report also addresses a number of obstacles to the implementation of environmentally related taxes, such as the perceived competitiveness implications for the most affected – and generally most polluting – industrial sectors, possible negative impacts on low-income households and fears that administrative costs could be significant.

...but measures can be taken to address these concerns.

Several complementary options to build acceptance for policy reform exist, including identifying, simply and clearly, the objectives behind an environmentally related tax, disseminating information about the need to address the environmental problems, and allowing sufficient time for public hearings or other forms of consultation. This could include the creation of “green tax commissions” and inter-ministerial working parties.

Industries are granted a large number of exemptions and rebates to environmental taxes...

Some environmentally related taxes can impact more on low-income households than on others, or can increase regional income disparities. However, a complete assessment of the distributional effects of a tax should include the secondary impact of any compensation payments, reductions in other taxes, and the induced employment effects. It should also take into account the distribution of environmental benefits resulting from the tax. While exemptions and rate reductions that defeat the environmental purpose of the taxes should be avoided, where there are significant negative distribution impacts of a tax reform, these can generally be avoided through proper design of compensatory measures and revenue recycling schemes.

... which reduce their environmental effectiveness.

To date, environmentally related taxes have not been identified as causing significant reductions in the competitiveness of any sector. This is consistent with OECD and other research on economic performance that shows that it is largely skills and investments that determine sectoral competitiveness. The finding is also not surprising given the numerous forms of exemptions and rebates currently granted to business. Indeed, the OECD/EU database on environmentally related taxes indicates that such taxes are levied almost exclusively on households and the transport sector (for further information see <http://www.oecd.org/env/policies/taxes/index.htm>).

When addressing sectoral competitiveness concerns, countries can allow desirable structural change to take place, but gradually, ...

Blanket exemptions for polluting products along with rebates for heavy polluting industries can significantly reduce the effectiveness of the taxes in curbing pollution and reduce incentives for developing and introducing new environmentally friendly technologies.

The report suggests ways to better address sectoral competitiveness concerns. Countries would benefit from better integration of environmentally motivated reforms with broader fiscal reforms. Possible negative impacts on the competitiveness of some sectors from the environmentally related part of a broader reform might thus be reduced. It should also be kept in mind that while some sectors may face a net loss in competitiveness due to an environmentally motivated tax reform, other – often more environmentally benign sectors – could generally improve their competitiveness. Countries may wish to allow such desirable structural changes to gradually take place.

...pre-announce phase-outs of tax exemptions, and recycle part of the revenues back to industry, while maintaining the environmental incentives.

In general, such restructuring would be facilitated if the introduction of new taxes and tax rate increases is announced well in advance, and if existing rebates and exemptions are phased-out gradually. Where exemptions and rebates are currently given, countries could remove these and channel part of the revenues back to the industries in question – but in such a way that the environmental incentives are maintained at the margin.

The negative environmental effects of exemptions and rate reductions can also be limited by ensuring that firms that are currently exempted or benefit from reduced tax rates sign up to stringent mitigation measures. In some countries, there is also scope for improving the design of tax provisions to ensure that any remaining exemptions and refund mechanisms are properly targeted to achieve their stated objectives.

International co-operation can facilitate concerted policies that reduce unwanted competitiveness impacts.

Countries concerned with competitiveness implications of adjusting taxes on a unilateral basis could also consider possible concerted policy options and changes, decided and implemented at the national level, but within a framework which provides for a multilateral dialogue. The OECD provides a unique forum to facilitate such policy discussions, and the competitiveness issue figures prominently in the recently renewed mandate of the Joint Meetings of Tax and Environment Experts.

DOMESTIC TRADABLE PERMITS FOR ENVIRONMENTAL PROTECTION

Tradable permits can be effective policy instruments for environmental management.

In response to the growing interest in tradable/transferable permits (TPs) as a policy instrument for environmental protection, OECD hosted a workshop on issues and challenges related to the use of domestic tradable permits systems for environmental management in September 1998. It led to the conclusion that TPs can be cost-effective tools for both pollution control and natural resources management. Recognising that further work on the enabling conditions for the introduction and implementation of TP schemes was needed, an OECD report on *Domestic Transferable Permit Systems for Environmental Management: Design and Use* was prepared, and is being published in 2001. It was used as the basis for the development of *Strategic Guidelines for the Design and Implementation of Domestic Transferable Permits*.

Four Main Families of Tradable Permits

1. *Quotas* (cap and trade or minimum limits and trade): a quantified ceiling or floor assigned to agents for a given period.
2. *Emission reduction credits*: acknowledgement at the end of the period of the achievement of an emission or abstraction level below the one which had been authorised for a given agent.
3. *Averaging*: the competent authority sets average limit values for an entire range of similar products manufactured by firms within the same industrial branch.
4. *Transferable usage rights*: formally regulates access to resources that are freely available, organising the regulation of the use of resources whose ownership is shared, or in the case of building and construction rights, alleviating the private property restrictions from the standpoint of environmental objectives.

They have advantages over some other policy instruments, including effectiveness, flexibility, efficiency, and better control of distributive effects.

One important lesson learned from this work is that, under the right conditions, TPs can be environmentally effective, flexible, economically efficient, and designed so as to limit unwanted distributive effects. They are environmentally effective because they are based on the setting of specific physical goals or quantified emission or extraction limits, guaranteeing the environmental quality of limits specified.

TP systems can also be economically efficient, in that they minimise the overall cost of compliance by encouraging those regulated agents that can abate pollution and/or conserve resources at the least cost to do so first, while allowing those with higher costs to opt for buying additional permits or allowances instead. They also provide greater flexibility for regulated agents in their choice of means for achieving the environmental objectives.

Finally, depending on how the TP scheme is designed, they can also ensure better control over the distributive effects of the policies, achieving desired income distribution or transfers among different groups through different methods of initial permit allocation.

Some Examples of TP Programmes in OECD Member Countries

<u>Country/Area/Agents</u>	<u>Programme</u>	<u>Period</u>	<u>Commodity</u>	<u>Effects</u>	<u>Savings</u>
US/refineries	EPA lead in gasoline	1983-87	Lead additives	Elimination of lead emissions	US\$226 m.
US/Los Angeles	RECLAIM	since 1994	NOx & SO ₂ allowances	8.3% & 6.8% NOx and SO ₂ reductions annually	over US\$40 m.
Switzerland/Basle	VOC control	since 1993	VOCs	Very few trades	...
US and Australia	Tradable water abstraction rights	since 19 th century	M ³ /year	Stability of water use	...
Australia	Inter-state salinity trading	since 1992	Salt credits	Reduced salinity	...
France/Alps	Landscape preservation	since 1997	Tradable development rights	Reduced urban sprawl	...
Canada	Fisheries, 14 species		Individual transferable quotas	Conservation, efficiency, rent capture	...

Policy-makers need to consider certain issues and constraints before implementing TP systems.

While in the right circumstances and with careful design TP schemes can have these positive qualities, there are a number of issues that policy makers should keep in mind when deciding whether to use a TP scheme or another policy instrument, notably:

- Generally, TPs are less likely to have a negative impact on economic competitiveness compared with regulatory approaches, but each case needs to be examined carefully with respect to the initial permit allocation and the fiscal redeployment to gauge the full effects on competitiveness and market power.
- The compatibility of the proposed TP system with existing legal and institutional frameworks, regulatory regimes, and other instruments that are already in place such as taxes and duties or negotiated voluntary agreements.
- The distributive effects arising from the implicit sharing of property rights over the environment among the government, firms responsible for pollution and/or resource extraction, and citizens or residents of the concerned community.

Political and social acceptability of the controversial concept of the "right to pollute" for firms that are allocated TPs under the scheme.

Finally, the process of designing and launching a TP system can require regulatory and institutional reform.

In reality, only a few countries have functioning TP schemes in place. Many countries have considered proposals for TP programmes, and have often reached advanced stages in the public decision-making process, stopping just short of a final decision to adopt them for implementation. The process of designing and successfully launching a TP system requires political will, awareness by all the actors involved, and often improving — or even overhauling — the existing regulatory and institutional framework.

Key Elements in Regulatory and Institutional Reform Required to Facilitate Introduction of a TP system

- A shift from regulations specifying particular technology choices to the formulation of physical constraints, such as ambient air/water quality standards, that are more in-line with environmental objectives and offer greater flexibility in the choice of means to achieve compliance.
- A shift from environmental standards expressed in terms of unit and concentration values to those expressed as absolute/mass values (e.g. ceiling or quotas by period).
- Assignment of responsibility for verifying policy implementation to independent administrative authorities whose long-term mission would be to ensure compliance with regulations and to develop transfer activity and fair transactions.

What next for OECD work on tradable permits?

The next phase of OECD work on tradable permits for environmental protection will focus on reviewing trends in greenhouse gas emission trading, exploring new and emerging areas for application of TPs (e.g. renewable energy, transport, solid waste management, and water resources management), and appraising methodologies for *ex post* evaluations of TP schemes.

ENVIRONMENTALLY SUSTAINABLE TRANSPORT

Achieving environmentally sustainable transport is one of the greatest challenges of the 21st century.

OECD Environment Ministers take action towards a new transport vision: EST!

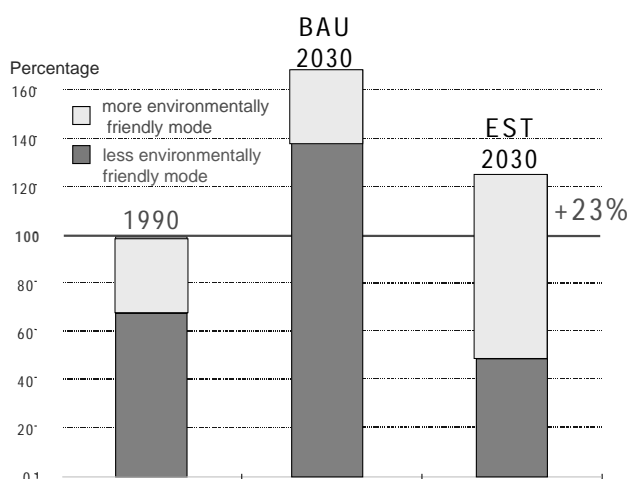
EST doesn't mean less transport than we have today, but it certainly means different transport.

Moving people and freight in an environmentally sustainable manner will be one of the biggest challenges of the 21st century. Numerous initiatives have been undertaken or proposed to reduce the negative environmental and health impacts of current transport systems. Overall, however, insufficient progress has been made towards achieving environmental sustainability for the transport sector.

A new target-oriented approach is needed that places environment and health at the top of the policy agenda for transport and related sectors, at international, national, and local levels. The OECD's Working Group on Transport recently concluded a five-year work programme with the development of Guidelines for Environmentally Sustainable Transport and a supporting analytical report. The EST Guidelines are part of OECD's commitments to contribute to the implementation of major international conventions and other commitments, and were endorsed by the OECD Conference on Environmentally Sustainable Transport – EST Futures, Strategies and Best Practices in October 2000 in Vienna. They will be presented for endorsement by OECD Environment Ministers at their meeting in Paris on 16th May 2001.

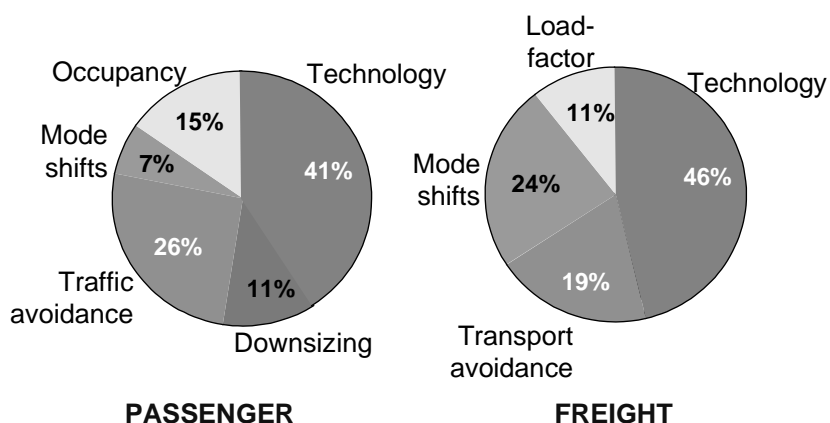
The EST initiative involved some 25 countries across the world in a search for a new approach to help solve today's transport problems. It concluded that there exists a new way towards a sustainable transport future. This involves defining what is meant by environmentally sustainable transport, developing a vision, and then working out how to realise it. It also implies an assessment of the economic and social implications of EST.

Environmentally sustainable transport doesn't mean less transport than we have today, but it certainly means different transport. The Figure below shows the modal split of transport activity in 1990, and in 2030 for the projected business-as-usual (BAU) trends and for EST. Following the EST scenario will lead to considerably lower external costs of transport compared to the BAU trends.



The structure of transport under EST in the future would also be different than it would be under BAU. The analysis found that less than half of the effort towards achieving EST would come from technological advancements for cars and lorries, fuels and infrastructure; the other half from making transport 'smarter' through mobility management, innovative mobility services and freight logistics.

Technological advancements would have to provide less than half of the effort to realise EST.



Achieving EST in 2030 would require innovative mobility services and information technologies and logistics to improve the efficiency of passenger and freight transport.

If EST is to be achieved over the next three decades, transport in 2030 might be characterised by:

- A significant change in the type of passenger transport provided. Many passenger vehicles would be running much more fuel efficient conventional engines, hybrid-electric engines, or electric engines (e.g. powered by fuel cells). There would be much greater use of non-motorised means for short distance trips, together with supporting infrastructure.
- Public transport, including new forms of integrated public and individual transport such as "public cars", would increasingly provide integrated mobility services.
- Significantly more efficient longer distance freight movements by road due to increasing load factors, better logistics and increased use of rail-based modes. Hydrogen would be used as a fuel both directly and in fuel cells.
- Almost all rail transport would be electric, with increases in high speed modes, efficiency and capacity, especially for freight transport.
- More efficient and less polluting inland and coastal shipping vessels would be used; hydrogen may also be used as a fuel.
- Long-distance air travel for business purposes would be largely obsolete, with information technology used for communication instead. Multi-modal freight logistics would be used for air cargo, and aircrafts would be more fuel-efficient.

Future work will focus on regional implementation strategies for EST.

The EST Guidelines have been elaborated to assist governments at all levels in the development and implementation of strategies towards EST. Their effective implementation requires strategies that accommodate the particular geographic and socio-economic conditions of countries or regions and involve all parties concerned. In the next stage of work, the OECD Working Group on Transport will focus on developing implementation strategies and best practices for EST in specific OECD regions.

The detailed results and conclusions of the EST initiative have been published and are available on the internet (<http://www.oecd.org/env/ccst/est/index.htm>)

ENVIRONMENT IN THE TRANSITION TO A MARKET ECONOMY

The EAP recommends new environmental policies to reinforce the efficiency gains resulting from economic reform...

The Environmental Action Programme for Central and Eastern Europe (EAP) was endorsed by Environment Ministers from across Europe at the Environment for Europe Ministerial Conference in 1993 in Lucerne, Switzerland. The EAP emphasised that in the transition to market-based democratic societies, economic reforms could generate efficiency gains that would reduce industrial pollution and other pressures on the environment. It also underlined that countries in the region needed to build on these gains by establishing effective environmental policies, and recommended actions that they should take in this regard.

...with experience showing that economic, political and environmental reforms can be mutually reinforcing.

Ministers established two bodies to facilitate implementation of the EAP — the EAP Task Force (Secretariat at OECD) was mandated to promote policy and institutional reform; and the PPC or Project Preparation Committee (Secretariat at EBRD) was charged to accelerate environmental investments. Experience gained over the last decade in these bodies and elsewhere shows that economic, political and environmental reforms have been mutually supportive and reinforcing. Progress in economic and political reform has stimulated environmental improvements, and effective environmental policy measures have supported the broader reform process. The 1999 OECD publication on *Environment in the Transition to a Market Economy* provides an overview of environmental trends in Central and Eastern European countries (CEEC) and the New Independent States (NIS) over the last decade.

Economic reforms have helped “de-couple” pollution levels from economic output in some countries...

As a result of the shift towards more efficient production methods, economic reforms have helped:

- Generate resources for investment in cleaner, more efficient technologies.
- Reduced the share of pollution-intensive heavy industries in economic activity.
- Helped curb pollution and waste generation.

These factors have led to a “de-coupling” of emissions of key air pollutants from economic output, particularly in countries advanced in reform (e.g. the Czech Republic, Hungary, Poland and the Baltic States) (see Figure).

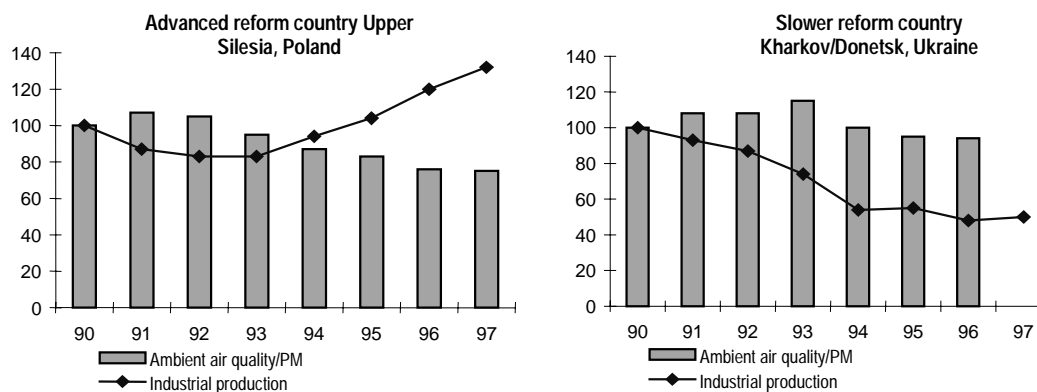
...whereas slow economic reform in others have impeded environmental improvement.

In countries where reform has been slower (e.g. most of the NIS, Bulgaria, Romania), the reverse is the case. Lack of incentives for efficient operation of enterprises and municipal services, as well as opportunities to profit from distortionary fiscal and monetary policies, have hindered implementation of “win-win” strategies (that have both environment and economic benefits) such as energy efficiency and cleaner production. Since many environmental strategies, including the EAP, rely on “win-win” strategies, these policy failures are important obstacles to achieving environmental objectives.

Even where reform is advanced, resource use and pollution per unit of GDP are several times higher than in OECD countries.

Even in the advanced reform countries, the pollution and resource intensities of their economies, and of most sectors, are still several times higher than in OECD countries. Depending on the pace of restructuring, it may take the countries acceding to the EU twenty years or more to meet all current EU environmental requirements; and even then, their pattern of development is likely to be far from sustainable. Prospects in south-eastern Europe and in the NIS are even more daunting.

**Particulate concentrations and industrial output indices
in an advanced reform country and a slower reform country
1990 to 1997**



Source: Electrowatt (1998).

Economic reform is a necessary but not sufficient condition for environmental protection; effective environmental policies and institutions are also needed.

While economic reform has been a necessary condition for environmental improvement, it has not been sufficient. The development of a new range of environmental policies and institutions, adapted to democratic, market-based societies, has also been essential to improve the environmental performance of transition economies. Both the importance and the difficulty of establishing effective (environmental) institutions were underestimated at the beginning of the transition period. In many transition countries, there remains a need to streamline, make more realistic and better enforce policy instruments. Excessive discretion and arbitrary decision-making by public officials, which perpetuate "administered" economic relations and encourage corruption, remain a problem in the less advanced reform countries.

Although environment has fallen on political agendas in CEEC/NIS, some Environment Ministries have recorded important achievements.

Faced with competing economic and social priorities, environment's place on the political agenda in most CEEC/NIS has fallen since the early 1990s. However despite their weak position, environment ministries have recorded important achievements. They were often among the first to reform policies and to attract external support. In the most advanced transition countries, a major part of environmental decision-making has been decentralised to the regional or local level. From a transition perspective, arguably their most significant contribution has been to support the emergence of civil society by promoting more open, participatory decision-making. This is reflected in the adoption of the *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters* at the Aarhus "Environment for Europe" Ministerial Conference in June 1998.

EU enlargement and the Stability Pact are spurring environmental improvement in CEEC but there is no equivalent driver in the NIS.

Compared to the early 1990s, the divergence in environmental and economic conditions between CEE countries and the NIS has increased. Progress in 10 CEE countries has enabled them to begin the process of accession to the European Union (EU). The development of a Regional Environmental Reconstruction Programme, integrated into the Stability Pact, will provide important support for environmental improvement in south-eastern Europe. There are no equivalent driving forces for environmental improvement in the NIS. Lower levels of economic development, a slower pace of economic reform, weaker systems of governance and the tentative emergence of civil society have resulted in weaker demand for environmental improvement. A deepening and strengthening of co-operation with the NIS is now a pressing priority. This is currently the main objective of the EAP Task Force and the PPC.

ALMATY MINISTERIAL CONSULTATION ON WATER MANAGEMENT AND INVESTMENTS IN NIS

Economic/Finance and Environment Ministers discussed the critical situation of the urban water sector in the NIS.

Urban water services are in a critical condition in many new independent states of the former Soviet Union (NIS) and, without urgent action, may collapse. This would have serious consequences for the health of the people of the NIS, for their environment, and for economic activity. Economic/Finance and Environment Ministers from the NIS discussed these problems and how to address them at a meeting in Almaty, Kazakhstan in October 2000. The meeting was held under the auspices of the EAP Task Force and also involved Ministers from several OECD countries, senior representatives from international financial institutions and international organisations active in the region, non-governmental organisations (NGOs) and the private sector.

They adopted Guiding Principles for reform of the sector...

The Ministers endorsed a set of Guiding Principles for Reform of the Urban Water Supply and Sanitation Sector in the NIS, and urged all stakeholders to actively support their implementation. The Guiding Principles recommend the type of policy and institutional framework which is urgently needed in the NIS to facilitate and support appropriate investments, and to place the management of water supply and sanitation services on a stronger basis. A project-based approach can support but not substitute for such a framework. Some of the key elements of the Guiding Principles include:

- Decentralising responsibility for water service provision from national to local level and strengthening the related capacity of local authorities, in particular locally elected governments.
- Transforming vodokanals (water utilities) into autonomous, commercially run institutions under strict supervision by public authorities.
- Promoting a more balanced development of urban waste water treatment relative to water supply, particularly in small and medium-sized towns.
- Engaging the public directly in the reform process and making adequate provision for consumer protection.
- Establishing the sector on a financially sustainable basis, while addressing the needs of poor and vulnerable households.
- Creating incentives to substantially increase efficiency in the use of water by consumers and in the operation of vodokanals.
- Creating conditions for private sector participation within an appropriate regulatory framework.

...and identified ways to better integrate economic and environmental decision-making in the NIS.

Integrating Economic and Environmental Decision-Making

Addressing the crisis in the urban water sector, and environmental problems more generally, requires a better integration of economic and environmental decision-making. New methods for project and programme appraisal need to be more widely employed in the NIS so that the costs and benefits of improved water supply and sanitation can be assessed against other projects competing for public finance. To this end, NIS governments, with donor support, need to strengthen the information base, train policy advisors and reform decision-making procedures. The EAP Task Force, supported by the World Bank, is developing a framework for the adaptation of valuation methodologies to the specific circumstances in the NIS.

In one example, the use of valuation methodologies saved significant investment in unnecessary expansion of hospital facilities. Because of particularly high incidences of

hospitalisations due to gastro-intestinal diseases in the Orlovsky District, Russia, authorities there were considering investing US\$2.2 million to increase the number of beds available and upgrade hospital facilities. However, analysis of the increased incidence of the diseases showed that unsatisfactory water quality was the main cause. A chlorinating station to disinfect the water was built in 1999 instead, for a cost of US\$ 220 000. In a few months, the frequency of acute gastro-intestinal disorders drastically diminished, and there was no longer a need to expand hospital capacity.

User charges are the most feasible source of finance for operation and maintenance...

The development of finance strategies in several NIS shows that continuation of the current combination of ambitious targets for the level and quality of water services and financing arrangements, which involve low user charges and limited access to funds for capital repairs, is not sustainable. A continuation of these trends would result in further deterioration of the level and quality of services. User charges are the only feasible long-term source of finance for operation and maintenance expenditure. At the same time, Ministers recognised that increases in user charges must take full account of what people can afford. Existing subsidy schemes should be replaced by targeted support for poor and vulnerable groups, as part of a strategy developed through a participatory process.

...while scarce public funds must be concentrated in priority capital investments.

National and local budgets have an essential role in the short and medium term in financing rehabilitation and capital investments, in providing social protection and in facilitating access to credit. Scarce public funds and donor grants need to be concentrated on a few projects to ensure that urgently needed rehabilitation is carried out, and that the deterioration of water networks is arrested. Preparation and implementation of financial arrangements should be conducted transparently in order to enhance efficiency and effectiveness. International financial institution (IFI) projects will continue to have an important demonstration and catalytic function, but their numbers and size will be limited by countries' borrowing capacity. The EAP Task Force, with Danish support, developed a methodology for conducting environmental finance strategies to assist in identifying the options for financing essential investments.

Finance Strategy for Water Supply and Sanitation Services in Georgia

About 95% of urban and 35% of the rural population in Georgia is supplied by centralised water service; 78% is connected to sewerage. Although the systems coverage compares well with countries of similar income, its performance is low. This is due to the poor quality of the distribution network, lack of maintenance and financial constraints. Available sources of financing cover only about 27% of operation and maintenance costs.

The Finance Strategy developed by the EAP Task Force indicates that even maintenance of currently operated infrastructure is going to be a challenging task for Georgia in the future. Financial resources in the public budget will not be sufficient to support all rehabilitation projects, which implies that difficult choices will need to be made.

User charges were identified as the most important source of revenue for the rehabilitation of urban water services. Even an increase in such charges to only 2% of average household income would generate more revenue than all other sources together. In the dialogue between the Environment, Finance/Economic Ministers and other relevant stakeholders a set of realistic investment and financing scenarios was identified. Implementation of these scenarios would make it possible to ensure the current levels and quality of water and sanitation services. However, this would take 20 years, and involve continued deterioration of most parts of the system in the short to medium term.

Currently, opportunities for private sector participation are limited, but could improve as reform measures are implemented.

The private sector can provide finance — and introduce more efficient management and technologies — to vodokanals, but all forms of private sector participation require a strong role for government to protect public interests and rights, and to guarantee the level and quality of service provision. Currently there are very few initiatives involving the private sector in the NIS. Nevertheless, as reform of the water sector proceeds, private sector involvement may provide an increasingly attractive option for providing water services. Ministers called upon the EAP Task Force to help facilitate dialogue between NIS governments, the private sector, and other stakeholders, to monitor progress, and to disseminate the results of successful initiatives.

Public and consumer involvement is vital for successful reform.

The public must be actively engaged in the process of reforming the urban water system, including possible private sector participation, from the very start. The provision of timely information and opportunities for participation in decision-making can help to ensure that the rights of citizens to a healthy environment and consumers' rights to clean and affordable water are respected. NGOs can play a role in drafting, implementing and monitoring water reform plans at all levels; and they can disseminate information about water sector reforms underway and promote dialogue between governmental bodies, local authorities, vodokanals and the public.

The EAP Task Force was requested to promote the implementation of the Almaty Conclusions and report to the Kiev Conference in 2003.

In response to requests by the Ministers at the Almaty Conference, the EAP Task Force will use the Guiding Principles as a framework for elaborating a focused programme of work to support the NIS in reforming their urban water and sanitation sectors. They will monitor progress in water sector reform, including implementation of investment projects, and submit a report on this subject to the Kiev "Environment for Europe" Ministerial Conference in 2003. Ministers invited the Kiev Conference to commission the preparation of an objective assessment of progress in stopping and reversing the deterioration in the urban water services in the NIS, to be discussed at a conference of stakeholders no later than 2005.

ECONOMIC ASPECTS OF BIODIVERSITY

Biodiversity is one of the best examples of the "global commons".

Biodiversity is a clear example of the "global commons", as actions taken in one region or country affect others beyond their geographical limits. Species and ecosystems do not often recognise international boundaries, but even when they do, their link with the well-being of the planet precludes local decisions from having only local impacts. For example, forest clearing through slash and burn aggravates the effects of climate change. Species extinction may diminish the welfare of present and future generations. Species homogenisation potentially prevents future generations from enjoying the benefits (e.g. medical, agricultural) of valuable genetic material.

Both the CBD and the OECD recognise the importance of policies to promote conservation and sustainable use of biodiversity...

Recognising the global commons aspect of biodiversity, approximately 180 countries have ratified the *Convention on Biological Diversity* (CBD). The overarching objectives of the CBD are "the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources". Because of the large range of public goods and externalities associated with biodiversity, market signals seldom reflect its full value. Instead, incentive measures are required to internalise the full costs of biodiversity loss in the activities that lead to this loss, and to provide the necessary information, support, and inducement to sustainably use or conserve biological diversity. The CBD recognises the importance of incentive measures and encourages all Contracting Parties to "adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity" (Article 11). The Conference of Parties to the CBD called on the OECD to help the Contracting Parties in this effort.

... including incentive measures to help to correct market failures.

As part of this effort, the OECD produced a *Handbook of Incentive Measures for Biodiversity* (1999), accompanied by 22 country case studies. It identifies a broad range of incentive measures, and analyses their individual strengths and weaknesses. These include economic incentives (fees, charges, and environmental taxes; market creation and the assignment of well-defined property rights; reform or removal of adverse subsidies); regulations and funds (standards, regulations and access restrictions; environment funds and public financing); and framework building incentives (information provision and scientific and technical capacity building; economic valuation; institution building and stakeholder involvement). Because of the uncertainties surrounding biodiversity and the complex inter-relationships that contribute to its maintenance or loss, a "bundle" of incentive measures, or "policy mix", is generally required to achieve success in conservation and sustainable use. Examples of policy mixes include:

OECD produced a practical Handbook on the design of incentive measures for biodiversity, along with over 20 country case studies.

- The creation of a revolving fund for nature in Australia to purchase lands of conservation interest, establish a legal covenant specifying their allowable and prohibited uses, resell them with the covenant attached, and use the funds to purchase and place under covenant other lands of ecological importance.
- The use of a combination of noise and light regulations, access restrictions, visitor fees and awareness raising to protect the nesting area of sea turtles in Laganas Bay, Greece.
- The provision of income tax exemptions on green investment funds in the Netherlands to encourage investment in environmental projects.
- The use of a tradable hunting permit scheme, combined with regulations, stakeholder involvement and capacity building, to ensure sustainable use of the Mexican long-horned sheep.

Under the right conditions, markets can play a major role in supporting the sustainable use and conservation of biodiversity.

The OECD, in partnership with the World Bank Institute (WBI), is also examining novel ways to address market failures related to biodiversity. While the lack of markets is part of the problem, creating markets may also be part of the solution — by efficiently promoting the sustainable use and conservation of biodiversity. An international workshop on this topic was held at OECD headquarters on 25-26 January 2001. Several case studies were reviewed at this meeting covering topics as diverse as organic agriculture, sustainable forestry, ecotourism, information instruments for market development, regulatory instruments using markets, financial markets and global market initiatives, and community-based market involvement. A conceptual framework indicating where markets can best work was also discussed.

Creating markets for biodiversity

Production of shade coffee: Shade coffee production uses the existing forest canopy to shield coffee plants from rain and direct sun. The trees keep the humidity high, and leaves serve as natural fertilisers. Besides preserving original forest and maintaining wildlife corridors, shade trees provide other valuable products such as fruits, wood fuel, building materials and habitat for flora and fauna. Because of its direct link with biodiversity, environmental organisations such as Conservation International have developed specific labels for shade coffee production. CI's objective is to transmit and market the biodiversity benefits of these products to consumers based on a general increased demand for organic coffee. Local communities gain from higher prices for their product, technical assistance, and sales contracts, while supporting the conservation of the rainforest. Large coffee retailers, including Starbucks Coffee Company, have purchase contracts with communities, market the shade coffee brands, and donate a percentage of their profits to conservation activities. Shade coffee is mainly produced in Mexico and Central America.

Conservation by the private sector: The core business of Earth Sanctuaries Ltd. (ESL) is to preserve Australian endangered wildlife through setting up conservation reserves that host endangered wildlife and regenerate ecosystems. The company has developed several income generating services, such as eco-tourism, accommodation, consulting services, and donations. The company manages 90 000 ha. across four sanctuaries. ESL was listed in the Australian Stock Exchange in 1994, and has paid a dividend to investors ever since.

Valuation plays a key role in the design of incentives and informing policy-making.

The OECD will also complete a *Handbook on the Applied Valuation of Biological Diversity* and a compendium of valuation studies in 2001. This work reviews key methods for valuing biodiversity, and provides guidance to policy makers on how to use these values in the design of incentive measures. Examples of the application of different valuation techniques in OECD Member countries will be collected, and the experiences and lessons learned used to illustrate the *Handbook*.

Revealing the economic value of biodiversity

Assessments of the economic valuation of biodiversity can help to raise public awareness of the importance of biodiversity, and to inform cost-benefit decisions regarding land use and other activities that might affect the environment. Estimating economic values for biodiversity and the services ecosystems provide is not easy. Without such estimates, however, the market value for biodiversity is often assumed to be zero or infinite by default. To correct this, efforts are being made to establish reliable and agreed methods for calculating biodiversity value.

OECD PERSPECTIVES ON CLIMATE CHANGE POLICIES

Climate change will have wide-ranging long-term consequences for social, political, and economic systems globally.

Climate change will alter natural ecosystems and impact on social, political and economic systems. Limiting climate change requires global co-operation to effect wide-ranging changes across diverse economic activities, sectors and stakeholders. It also requires government policies to influence business practices and industrial operations; to modify unsustainable farm, forestry and other land use practices; and to shape human behaviour towards new patterns of consumption over the long term. Climate policies aim to reduce emissions and to enhance emission uptake through sinks. It will also be increasingly important to facilitate cost-effective measures to adapt to a changing climate, such as protecting human settlements from rising sea levels and more frequent storms.

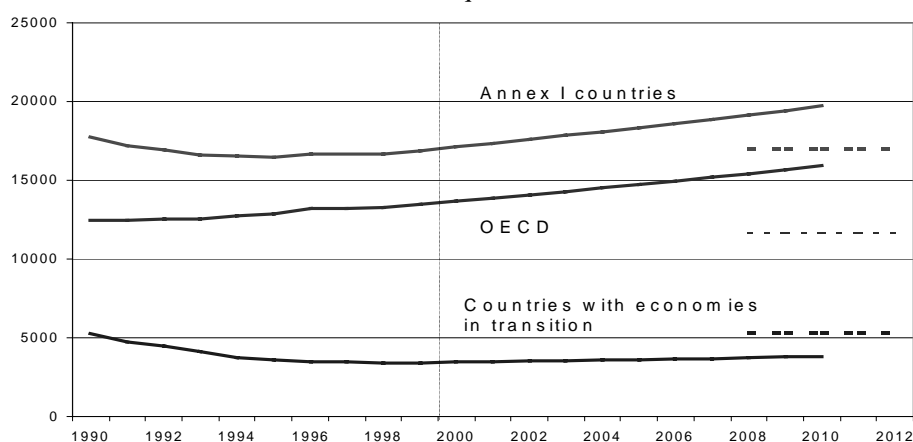
The OECD is analysing policy options to help to address it.

OECD analyses focus on the economics of alternative climate change strategies. Questions of relevance include: How to design policies that provide incentives for behavioural changes and technical and industrial innovation to limit greenhouse gas (GHG) emissions? How to capture the synergies between climate and other policy objectives? What are the trade-offs in the long-term of various forms of burden-sharing arrangements? OECD also works with Member countries to engage different parts of government in the design of climate policy solutions. The OECD's multilateral peer reviews of national policies and programmes help to further "good practice" in areas of relevance to climate change, such as environmentally-sustainable economic growth, agriculture, environment, transport and energy.

Emissions in most OECD countries have continued to rise since 1990...

The Kyoto Protocol will establish specific GHG emission reduction targets for industrialised countries (those listed in Annex I), for the 2008-2012 time frame compared to 1990 levels. Compared with "business as usual", the targets imply emission reductions of 20-30% for most OECD countries, should countries tackle the targets unilaterally. However, recent OECD analysis indicates that the overall gap may be a more modest 18%, if all Annex I countries work together to achieve the targets.

GHG emission trends for Annex I countries compared to Kyoto targets
million tonnes CO₂ equivalent, 1990-2010



Source: based on UNFCCC 2000 inventory data for historical figures, and OECD GREEN estimates for projections

...although some progress has been made in the implementation of policies to mitigate emissions.

Despite rising emissions, some encouraging technology and policy trends are evident among OECD countries, including recent tax and domestic emission trading initiatives. For instance, a number of countries have introduced carbon-related taxes, or increased taxes on energy use. Expanding markets for renewable energy sources are also apparent in many countries, in part reflecting environmental policies to liberalise energy markets. In the agricultural sector, better management of manure and crop residues, more efficient fertiliser use and livestock feed management are improving economic performance while also limiting greenhouse gas emissions. Nevertheless, the effectiveness and efficiency of climate policies are often limited by counter-acting measures, such as large tax exemptions or subsidies to energy-intensive industries.

Recent OECD analysis shows that mitigation across all greenhouse gases (not just CO₂ alone) combined with emissions trading can reduce the costs of implementing the Kyoto Protocol by a third.

The Kyoto Protocol will offer opportunities for Annex I countries to lower mitigation costs in two ways: through flexibility to mitigate across a basket of six greenhouse gases; and through the use of the "flexibility mechanisms" — Joint Implementation (JI) and emissions trading — to concentrate abatement in those Annex I countries where mitigation costs are lower. The Clean Development Mechanism (CDM) allows co-operation between industrialised and developing countries to implement emission reduction projects, which will also lower overall costs. *A Multi-gas Assessment of the Kyoto Protocol* (2000) shows that the inclusion of methane and nitrous oxide emission reductions would reduce estimated economic costs of implementing the Kyoto Protocol by approximately one-third, compared with earlier estimates focused on CO₂ alone. Multiple gas mitigation, when combined with full use of the Kyoto mechanisms, and with flexible adjustment in labour, product and capital markets, could limit the annual real income loss across Annex I countries to a fraction of one per cent. Analysis also indicates, however, that adjustment costs in the near term, linked to rigidity in labour and capital markets, could raise these costs several fold. Specific policies are thus needed to facilitate market adjustment in order to help reduce transition costs.

The OECD and the IEA are assisting Member countries and economies in transition through information sharing, capacity building, ...

Institutional innovation will be central to effective implementation of the flexibility mechanisms. This includes establishing internationally harmonised emission monitoring and tracking systems, credible methods for determining emission baselines for JI and CDM projects (for example, as in the recent publication on *Emission Baselines: Estimating the Unknown*), transparent reporting and review, strong national monitoring and enforcement systems, and a compliance system that facilitates good performance while penalising non-compliance. The OECD and the IEA are assisting industrialised countries, including the countries with economies in transition, to share information, and to better understand and implement the changes in institutions required to support the flexibility mechanisms.

...and analysis of national policies to guide the transition to a stable climate.

Well-crafted national policies can ease the cost of a long-term transition to a low carbon economy. Subsidy and tax reform, eco-taxes and emission trading schemes (both international and domestic) are the essential policy instruments. Applying these policies across all sectors and gases will improve their economic efficiency by equalising the marginal costs of abating GHG emissions. Similarly, policies that encourage both energy and materials substitution to reduce emissions will help to meet Kyoto targets in a cost-effective way. The available policy options are described in *National Climate Policies and the Kyoto Protocol* (1999).

Sectoral policies are also critical, to capture the ancillary benefits of GHG mitigation...

Sectoral policies are also essential to overcome barriers to investment in energy efficiency and to other cost-effective actions to limit emissions. These policies should aim to capture the full range of benefits available from greenhouse gas mitigation in the agriculture, manufacturing, transport and energy production sectors. A recent OECD publication, *Ancillary Benefits and Costs of Greenhouse Gas Mitigation - Proceedings of an Expert Workshop* (2000), highlights the close connections between greenhouse gas limitation and other policy objectives, such as protection of human health and of natural ecosystems. The "ancillary benefits" of GHG mitigation may compensate for a third or more of the estimated costs of mitigation. Such benefits include avoiding loss of human life or illness due to air pollution and other ecosystem benefits, such as avoiding water pollution from nitrogen run-off.

...and to provide incentives for development of emerging technology in the near term.

Near term policies will also be essential to help bring forward technology solutions (such as hydrogen fuel cells) that can break the link in the longer term between the growing demand for power and transport services and CO₂ emissions. When well-designed and administered, policies can accelerate the development of emerging technologies by providing incentives for private R&D and by providing support for demonstration projects, while avoiding the creation of market distortions and trade barriers.

Long term climate stabilisation requires active global participation, with OECD countries assuming a key leadership role.

Long term climate stabilisation will require active participation across the world, although OECD countries have a key leadership role to play in identifying and implementing long term solutions — through government and businesses, knowledge sharing, and socially and environmentally responsible investment at home and abroad. OECD countries also have a critical role to play through their development co-operation policies. The OECD is working to assist its Member countries, and the wider international community, to implement Kyoto commitments and to make long term, cost-effective, solutions a reality.

STRATEGIC WASTE PREVENTION

There is a need to reduce waste in the aggregate, not just per unit of output.

The concept of waste prevention has been embraced by all OECD countries as a key element of environmental sustainability. Despite this, aggregate waste amounts have increased substantially throughout the OECD area in the last 20 years. Noteworthy trends include:

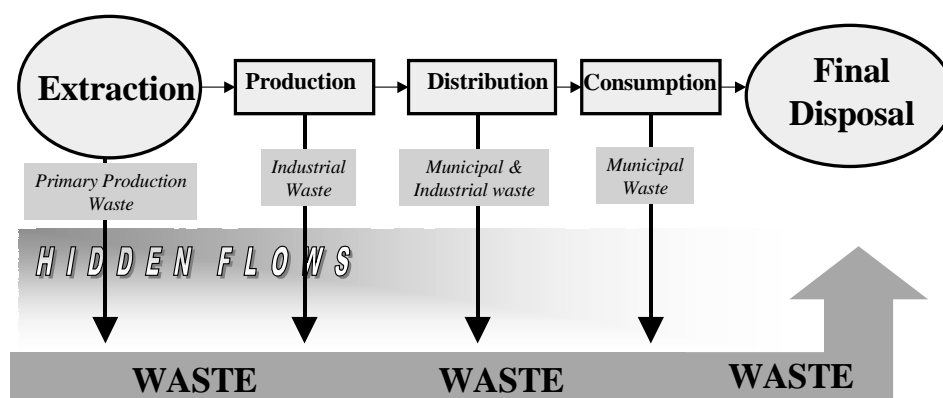
- The growing quantities of chemically complex residues generated during the production, distribution and consumption of various products.
- The increasing quantities of municipal solid waste (expected to nearly double by 2020 compared to 1980 levels).
- The continued need for significant investments simply to *manage* wastes.
- The fact that the majority of wastes (approximately two-thirds) continue to go to landfills.

Although recycling is often pointed to as a solution to the waste crises, it will not by itself be sufficient to reduce overall waste volumes. Similarly, continued efforts toward facility and product-level 'efficiency improvements' (i.e. less waste per unit of output) will be necessary, but not sufficient, to achieve this goal.

OECD has developed a decision-support tool for realising effective and efficient waste prevention policies...

The multi-faceted and often poorly understood nature of waste prevention underscores the need for guidance to assist governments with the development and assessment of policies that are at once practical, environmentally effective and economically efficient. The *OECD Reference Manual on Strategic Waste Prevention* is a decision support tool developed in response to the challenges outlined above. As an aid to planning for a reduced-waste future, the Manual takes a life cycle approach to waste prevention, profiles the operational aspects of waste prevention (strict avoidance, reduction at source, product re-use), combines a product-oriented perspective, and explores waste prevention policy links to economy-wide material flows.

Waste prevention opportunity chain



Waste prevention policy programmes can potentially focus on diminishing three types of threats (waste amounts, inherent hazards, and ultimate risks/impacts), within the context of both material inputs and outputs. Traditionally, however, methodical consideration of material inputs has been largely missing in the waste and environmental policies of most countries.

Overall, four different 'classes' of materials can be considered during the design, delivery and assessment of waste prevention policy programmes: small volume flows with high

unit impacts, medium volume flows with lower unit mass impact, large volume flows with very low unit mass impact but significant allied environmental effects (essentially 'hidden flows'), and hard-to-recover dissipative flows that typically derive from product use.

...that address the full cycle of waste prevention policy programmes:

A central theme of the *OECD Reference Manual* is that governments will experience difficulties in achieving a significant and efficient de-coupling of the growth of waste generation from the growth in GDP unless rigorous attention is directed to three core activities: quantitative target setting, instrument choice and implementation, and performance evaluation.

Core activities for de-coupling waste generation from economic growth

...from quantitative target setting, ...

- *Quantitative target setting:* to clearly identify a desired level of waste prevention achievement according to an explicit schedule, possibly graduated according to short-, middle- and long-term targets. Choices for consideration include the waste stream to reduce, the measurement criteria, and the basis for the goals. Fundamental to target setting is an appraisal of, *inter alia*, the social and environmental benefits and costs of proposed waste prevention targets.

...to the choice and application of appropriate instruments, ...

- *Choosing and implementing policy instruments:* to achieve the agreed waste prevention target(s), appropriate policy instruments — economic, regulatory, suasive — need to be designed and implemented. Essential criteria for evaluating instruments include environmental effectiveness, economic efficiency, innovative effects, political acceptability, and ease of administration. Approximately two dozen instruments are profiled in the *Manual* according to their 'waste prevention potential', a concept encompassing both their 'scope' (geographic/organisational coverage), and their potential 'strength' (directness of the instrument's environmental effects).

...to the evaluation of performance.

- *Evaluating performance:* to assess the extent to which waste prevention objectives and targets have been attained. Evaluations might be undertaken for specific policy programmes, or to assess the combined performance of all programmes. The efficacy of waste prevention evaluations can be improved by addressing traditional weaknesses of such evaluations, including a) restricted consideration of the system-wide environmental benefits of waste prevention, and b) insufficient incorporation of the social and economic dimensions. Ultimately, the availability and quality of waste prevention data, and the capacity to analyse it, will be a key consideration.

Careful attention to these three activities will help assure that waste prevention policy programmes evolve with changes in population, GDP, consumption patterns, and technological development. Clearly, they need to be put into the broader context of establishing and operating a strategic waste prevention policy programme, the steps for which are detailed in the *Reference Manual*.

As a synthesis of the latest thinking, the *Reference Manual* provides governments with the basis for a new level of action on waste prevention. It can also be used to assist with fulfilling agency, Parliamentary, or other mandates for waste prevention policy and programme reviews; to help satisfy the expectations of external stakeholders that governmental institutions track the effectiveness and efficiency of their waste prevention activities; to support the development of national, regional or local agency guidelines for best practice in waste prevention; and to be the basis for training in the design and assessment of waste prevention programmes.

EXTENDED PRODUCER RESPONSIBILITY

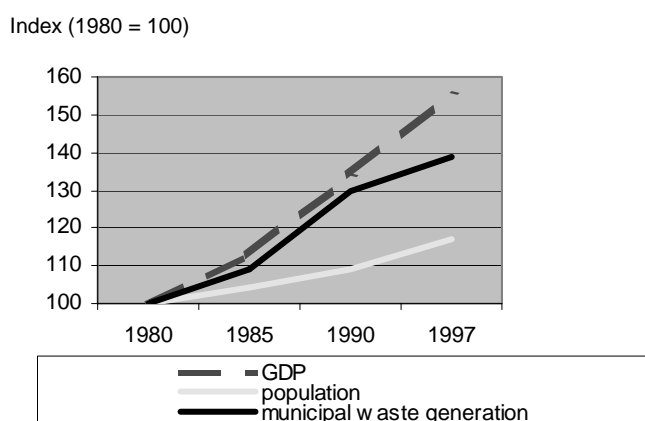
The generation of municipal waste continues to grow...

...and new environmental instruments are needed to address this problem, including extended producer responsibility (EPR).

Over the last few decades, OECD Member countries have actively implemented policies and programmes to reduce pollution and waste generation. While major progress has been made in many cases to lessen the per capita generation of air and water pollution, the generation of municipal waste continues to grow in both per capita and absolute terms.

Faced with increasing waste generation, many governments have reviewed available policy options and concluded that there is a need to apply new instruments to address this problem. Extended producer responsibility (EPR) is a policy approach in which producers accept significant responsibility (financial and/or physical) for the treatment or disposal of post-consumer products. The OECD *EPR Guidance Manual* provides governments with information about the general considerations, and the potential benefits and costs associated with extended producer responsibility. It draws on experience to date to provide general guiding principles to help policy makers in their decisions about EPR, providing a conceptual foundation for whatever EPR approach may be deemed most useful in specific circumstances.

OECD municipal waste generation trends, compared to population and GDP



EPR seeks to integrate signals related to the environmental characteristics of products and production processes throughout the product chain. The two main (related) features of EPR policy are:

EPR shifts responsibility for post-consumer products to the producer...

- The shifting of responsibility (physically and/or economically; fully or partially) upstream to the producer and away from municipalities.
- The provision of incentives to producers to incorporate environmental considerations in the design of their products.

Through EPR policies, producers are encouraged to re-evaluate decisions concerning materials (and chemical) selection, production processes, design, packaging, and marketing strategies. While EPR began as an approach to address the large volume of packaging entering the waste stream, there is a trend toward the extension of EPR to new products, product groups and waste streams - such as electrical appliances and electronics.

The German Green Dot System

There are many EPR programmes in operation today. The most widely known is the German Green Dot System (Duales Systeme Deutschland), which makes producers and distributors of packaging responsible for establishing and managing a system to take back the wastes associated with their products. Between 1991 and 1998, the amount of packaging consumed in Germany was reduced from 95 kilograms to 82 kilograms per capita, a 13.4% decrease.

...who is defined as the brand owner, manufacturer or importer.

Allocating responsibility and determining who is the producer are perhaps the most important policy design issues. In the context of the *OECD EPR Guidance Manual*, the producer is defined as the brand owner or importer. In situations where the brand owner cannot be clearly identified, the manufacturer (or importer) is considered the producer. Sharing of responsibilities is a significant aspect of EPR, and retailers, distributors, consumers and other actors in the product chain play a vital role in the successful operation of an EPR programme.

The environmental benefits of EPR come from both the responsible treatment of post-consumer products and the changes in product design.

The important implications and changes associated with EPR come from both the treatment of products at their post-consumer phase and addressing the upstream activities of materials selection and product design. In principle, EPR programmes can provide the appropriate signals to producers to internalise a substantial portion of the environmental externalities associated with the final disposal of the product. With this in mind, EPR can help promote some of the common environmental goals shared by OECD governments: namely, waste prevention and reduction, increased use of recycled materials in production, and increased resource efficiency. The potential benefits of EPR also include reducing or eliminating potentially hazardous chemicals in products, and promoting cleaner production and more environmentally benign products.

Issues still remain, however, about the economic efficiency and environmental effectiveness of EPR as it is applied to a range of different products and waste streams. Future OECD work in this area will focus on the costs and environmental effectiveness of EPR.

TRADE AND ENVIRONMENT

OECD work on trade and environment aims at promoting compatibility between trade and environment policies.

Experts from OECD countries on trade and environment issues have met regularly over the past ten years in the OECD Joint Working Party on Trade and Environment (JWPTE). The objective of the JWPTE is to foster the compatibility of trade and environment policies, and to thereby promote sustainable development. The JWPTE has undertaken analysis on a range of topics that integrate trade and environment issues and policies. The OECD Procedural Guidelines on Trade and Environment provide guidance to Member countries on ways of increasing the integration and mutual reinforcement of trade/ environment activities and policies. These Guidelines encourage:

- Transparency and consultation with civil society in developing policies and solving trade or environmental disputes.
- The review of trade policies and agreements from the perspective of the environment, and environmental policies and agreements from the trade perspective.
- International co-operation in environmental action.

Trade measures are used in a number of MEAs...

Since 1996, the Joint Working Party has undertaken case studies examining the use of trade measures in three separate multilateral environmental agreements (MEAs): the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Montreal Protocol on Substances that Deplete the Ozone Layer, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The studies have recently been published as *Trade Measures in Multilateral Environmental Agreements* (1999). A synthesis report summarises the main issues raised in the case studies and draws out key lessons to assist policy-makers in deciding whether, and if so, how, it may be appropriate to include trade measures in future MEAs.

Transparency and Consultations with Civil Society

The JWPTE is currently undertaking case studies in OECD countries to document existing mechanisms and practices in relation to transparency and consultation with civil society in relation with trade and environment, and to elicit feedback from civil society organisations on the operation of these mechanisms. Case studies have been developed for 12 of the 30 OECD Member countries, as well as the European Commission. Transparency mechanisms and practices in multilateral organisations dealing with trade and environment issues (CEC, UNCTAD, UNEP, WTO and OECD) have also been studied. Future work will build on the outcomes of these case studies, focussing on the difficulties encountered and the approaches which work best, drawing lessons for good practices.

...and sustainable product policies can also impact on trade.

Sustainable product policies aim to reduce the negative effects of consumption on the environment. These policies operate in a number of ways — for example, by providing information for consumers on the production process and composition of the product (eco-labelling), by shifting responsibility for products at the end of their useful life to the producer (extended producer responsibility), or by targeting the purchasing activities of government as a major consumer (greener public purchasing). Product policies tend to

take a life-cycle approach, and can have particular trade concerns when they reach into the production phase of a product's life cycle, because of the greater likelihood that these (both national and sub-national) policies will affect trade with foreign producers. As such, transparency is critically needed when developing and applying such policies. A number of recent JWPTTE studies have analysed these policies and their potential effects on trade.

The environmental effects of trade liberalisation

Work on the environmental effects of trade liberalisation has deepened in recent years, moving from identifying broad effects on the economy generally, to analysing effects in specific market sectors. In general, OECD analysis indicates that trade liberalisation can be a positive agent for the environment — by improving resource allocation, promoting economic growth and increasing general welfare — provided effective environmental policies are in place. The sectors in which trade liberalisation has been studied include the environmental goods and services sector which, because of the nature of the products involved, could be expected to lead to positive environmental effects. In another sector studied — the freight transport sector — the environmental outcome was found to depend more on the timing and sequencing of the structural reform in the sector. Work on the environmental effects of fossil fuel liberalisation is currently underway.

The JWPTTE supports the assessment of trade and environmental policies, including through the development of assessment methodologies.

The JWPTTE continues to play an important role in the area of environmental and trade assessments. It provides a forum for governments to share experiences and lessons learned from these assessments, to highlight areas of interest for future negotiations and to draw attention to potential areas of conflict as well as potential win-win situations. In October 1999, a workshop was held to discuss methodologies for environmental assessments of trade agreements, including the 1994 OECD methodologies. Currently, these methodologies are being expanded to assess the environmental effects of services liberalisation as well.

INVESTMENT, MULTI-NATIONAL ENTERPRISES AND THE ENVIRONMENT

Globalisation has been accompanied by significant increases in foreign investment.

One of the main features of globalisation has been the phenomenal growth in flows of capital, both private and public, around the world. Private flows of capital, including foreign direct investment (FDI), have increased significantly in recent years: in 1985 FDI flows to non-OECD countries totalled US\$ 19 billion; by 1998 this had grown to about US\$ 118 billion. It is now widely recognised that this massive outflow of foreign capital has significantly contributed to economic and social development in many world regions.

Attention has focussed on whether FDI leads to pollution havens...

The assessment of the environmental impacts of FDI have been the subject of much debate, with views sometimes highly polarised. Some commentators have suggested that there is a "race to the bottom" in environmental standards resulting from competition between countries, or among regions within a country, to attract FDI. The so-called "pollution havens" hypothesis implies that competitive forces "push" FDI away from countries with high environmental standards, or "pull" it towards those with low environmental standards.

...or pollution halos...

Conversely, the theory of "pollution halos" suggests that the large corporations most frequently involved in FDI generally promote the establishment of higher environmental standards through technology transfer or via their management practices.

...with the conclusion that further analysis of the environmental impacts of FDI is clearly needed.

Evidence for and against these hypotheses was examined in an OECD conference hosted by the Dutch government in the Hague in January 1999. The overall conclusion was that there does not appear to be strong evidence corroborating either the pollution havens or the pollution halos hypothesis. Differences in environmental standards and/or abatement costs do not seem to have made a large difference to firm location decisions. Equally, the environmental performance of foreign firms is not consistently better than that of domestic firms. There are some examples of serious environmental degradation through FDI, but others where foreign firms have brought with them higher standards and better management practices, as well as cleaner technology.

General principles for integrating environmental and investment policy objectives from the OECD Conference on FDI and the Environment (the Hague, January 1999)

- Public access to information on investment proposals.
- Public participation in all stages of investment and environmental assessment processes.
- Strengthening legal systems and ensuring access to courts to settle disputes.
- Transparency, accountability and predictability in the design and implementation of investment and environmental policies and regulation.
- Establishment and enforcement of appropriate environmental standards.
- No derogations from statutory environmental requirements in order to attract investment.

Source country governments can:

- Set appropriate environmental standards in order to guide investor actions in both their domestic and overseas operations.
- Strengthen environmental procedures and practices that are used by government agencies providing investment assistance (e.g. export credit agencies).

International organisations can:

- Provide resources to help host countries develop strategic planning to integrate investment, environmental and social policy objectives.
- Mainstream environmental considerations into existing and new multilateral trade and investment arrangements, as well as bilateral agreements and codes of conduct.

Examination of the FDI-environment linkages is continuing, with a focus on two specific sectors – forestry and mining.

Following the conference, OECD released a publication on *Foreign Direct Investment and the Environment*, which provides a state-of-the-art assessment of current debates on FDI and the environment. A second conference on FDI and the environment is planned for early 2002. This would take the discussion one step further, examining the impacts of FDI on the environment with respect to two specific sectors – forestry and mining.

The impacts of portfolio flows of investment are also of interest, and common approaches for OECD countries to integrate environmental concerns into Export Credit Agency activities are currently being developed. An OECD Decision on this topic is anticipated by mid-2001.

There is potentially a strong role for voluntary commitments...

Where environmental governance in host countries is weak, voluntary initiatives by business can provide a means of mitigating the potentially negative environmental impacts of FDI. The most progressive voluntary initiatives pay attention to benchmarking, stakeholder participation, establishing monitoring and reporting mechanisms with external verification, as well as setting quantifiable environmental targets and moving beyond compliance with domestic environmental standards. The attitude of public and environmental groups towards voluntary approaches has generally remained critical however, mainly due to the absence of procedures for monitoring the implementation in some codes.

... for which the OECD Guidelines for Multi-National Enterprises can provide an agreed framework.

NGO or government-led frameworks could contribute to improve the credibility of firms' voluntary efforts for environmental protection. The OECD Guidelines for Multinational Enterprises, first issued in 1976, help to establish such an internationally agreed framework for these initiatives. The Guidelines comprise recommendations from 33 governments (all OECD Members plus Argentina, Chile and Brazil) to multinational corporations covering issues from the respect of human rights, labour and consumer rights, to environmental protection wherever companies operate.

The MNE Guidelines now reflect the objectives contained in the Rio Declaration...

In the review of the Guidelines, completed in 2000, important innovations were introduced with respect to the environment. Thus, they now reflect the principles and objectives contained in the Rio Declaration on Environment and Development and underscore the importance of sound environmental management for sustainable development.

...and encourage MNEs to raise their environmental performance.

The Guidelines also encourage enterprises to raise the level of their environmental performance, to train and educate their employees on environmental matters and to report on their activities in order to improve transparency and build confidence with the public. They also stress the desirability of companies adopting a precautionary approach in their operations, with a view to avoiding potential risks to the environment.

The revision process involved consultations with stakeholders and public input through the Internet.

During the revision process, the OECD consulted with the business community, labour representatives, non-governmental organisations and non-member governments. In addition, draft revisions were posted on the Internet for public comment. These sources all provided essential input to the development of the revised text and procedures to enhance implementation. This process of consultation was crucially important to building momentum for the review's success.

ENVIRONMENTAL INFORMATION IN OECD COUNTRIES: PROGRESS AND CHALLENGES

Environmental information is essential to support decision making and to inform the public.

Further to the Recommendation on Environmental Information adopted by OECD Environment Ministers and the OECD Council in February 1998, the OECD has conducted a systematic survey of how its Member countries practically implement this commitment. Environmental information is recognised as a fundamental tool to:

- Carry out more responsive and cost-effective environmental policies at international, national and sub-national levels.
- Contribute to environmental democracy (i.e. informing the public, supporting public participation). Access to environmental information has become a right of citizens in OECD countries.

The right of access to environmental information...

Results from the OECD Athens seminar¹ show that, in the 1990s, OECD countries have made great progress in providing environmental information to the public. First, the principles of right of access to environmental information and right of appeal for the public have been embodied in many administrative procedures, in national laws and regulations and in international acts, including the Aarhus Convention, the OECD Council Recommendation on Environmental Information, the Environmental Side-Agreement to the North American Free Trade Agreement and the European Union Directive on freedom of access to information on the environment.

... is in place in all OECD countries, with environment ministries playing an active role.

Furthermore, progress has been made in implementing these instruments at central, regional and local levels, and at present the right to environmental information can be regarded as an individual right in force in nearly all OECD countries. Information collected by environment ministries is generally easy to access. In many OECD countries, environment ministries and agencies play an active role in answering requests for environmental information, in providing advice on how to obtain the information, and in preparing reports and databases that can be accessed by the public. A few countries have opened public information centres on the environment; others have developed education and training programmes which have resulted in greater awareness of environmental problems. In the area of accident prevention and preparedness, public authorities and enterprises are co-operating to better inform citizens of the risks and of measures to take in case of an emergency.

Significant progress has been made in producing environmental data...

Significant strides have also been taken in environmental reporting by governments. Provision of environmental data, indicators, state of the environment reports and other types of reports as well as electronic access to information often occurs on a routine basis, and increasingly responds to demands from outside the environment community. Experience shows continued improvements in the number of Member countries carrying out data collection and dissemination work; the thematic scope of the data produced; the body of knowledge about data definitions and limits; and international harmonisation of the data. Recent Members of the OECD are progressing rapidly. A considerable amount of new environmental information has thus become available, and the quality and comparability of environmental data has improved.

¹ OECD Athens seminar "Public Access to Environmental Information-Proceedings", Paris, 2000 (<http://www.oecd.org/env/data/EINFO-procf.pdf>)

...and indicators as well as in environmental reporting.

Environmental information has also become more responsive to policy needs and public information. Much progress has been made in the field of environmental indicators. Progress is also reflected in the range of reporting products and tools. Depending on the audiences to be reached, a number of countries publish, in addition to general reports, numerous thematic reports and brochures as well as environmental outlooks and action plans. More attention is being given to compact, user-friendly products targeted at a wider audience, and to publications on CD-ROM and on Internet. In countries with a federal or highly decentralised structure, environmental reports are increasingly produced at sub-national level.

These achievements need to be consolidated to continue providing the right information for the right purpose.

However, ensuring that environmental information systems keep pace with changing demands and policies, while maintaining continuity and regularity in core activities is a challenge in all OECD countries.

Practical difficulties remain in providing and obtaining environmental information (e.g. need to respect commercial confidentiality, costs of inquiry, delay in obtaining answers, information scattered in various ministries and local offices), and great variability remains in both the quality and coverage of reporting activities across countries. Continued efforts are thus needed to further consolidate and enhance the progress that has been made. Providing the right information for the right purpose remains central.

This implies further improving the quality of environmental data, setting priorities, strengthening the institutional capacity, ...

Continued efforts are needed to further improve the quality and timeliness of core environmental data; to fill remaining data gaps with regard to specific environmental problems such as biological diversity, marine issues or toxic contamination, and the economic and territorial dimensions of environmental performance. Efforts to adapt and upgrade environmental information systems need to be pursued and reinforced, supported by regular reviews to detect possible inefficiencies. Information management priorities have to be set and resources have to be allocated accordingly. Countries' institutional capacity to respond to environmental information requests need to be strengthened and responsibilities clarified, in particular with respect to non-environmental administrations and semi-public bodies.

... widening the use of modern information technologies, ...

Better and wider use should be made of new technologies and modern communication tools (in particular the Internet) so as to make environmental information available to a wide range of citizens, to facilitate the transmission of large amounts of information, to reduce costs and to move towards a more interactive way of reporting.

There is a general need to strike a balance between the right to know of the public and the right to protect industrial and commercial secrecy. When conflicts arise, a facilitator or mediator can be useful to create links between relevant public authorities and to avoid time consuming and costly judicial and non-judicial procedures to obtain data. Further progress can also be foreseen with the full implementation of legal acts on integrated pollution control.

...and raising awareness about information rights.

More could also be done to raise citizens' awareness of their information rights, to help the users of environmental information to identify the most appropriate information sources for their purposes, and to enable the public to obtain information within a short time period.

ENVIRONMENTAL PERFORMANCE REVIEWS: ACHIEVEMENTS IN OECD COUNTRIES

With the completion of the first cycle of OECD environmental performance reviews...

Following a decision of the Environment Policy Committee, at its 1991 meeting at ministerial level, the OECD launched a programme of Environmental Performance Reviews. Since then, the environmental performance of Member countries* has been reviewed and a second cycle of reviews has recently been started**. Three non-member countries*** have also been reviewed in co-operation with the UN-ECE.

Despite the wide diversity of economic, social, environmental and political conditions among Member countries, a number of broad conclusions can be drawn concerning progress in environmental management and the steps towards sustainable development made in OECD countries in the 1990s.

... major lessons can be drawn on the achievements and challenges of OECD countries with respect to their environmental policies.

In most Member countries, the environmental progress made in the 1980s was consolidated and further enhanced during the 1990s:

- Emissions of acidifying substances to air, particularly those of sulphur oxides have been reduced significantly.
- Emissions and concentrations of a few major air pollutants such as SO₂, CO and lead have declined because of strengthened standards and enforcement applied to major stationary sources and vehicles.
- Economic restructuring (dematerialisation) and changes in the energy mix have further contributed to decoupling releases of air pollutants from economic growth.
- The most pressing pollution problems arising in regard to surface waters have been tackled, mainly through construction of waste water treatment facilities, regulation of discharges from large point sources, better implementation of existing legislation, water taxation and integrated water management.
- Progress has been made on the issues of hazardous waste and municipal waste, with a number of innovative programmes being established for prevention, collection and reuse/recycling of waste.
- In the area of nature conservation, most Member countries have made progress in protecting threatened species by establishing protected habitats, encouraging beneficial changes in land use practices, and adopting new legislation to protect biodiversity.

Despite efforts made during the 1990s, problems remain in areas such as eutrophication of surface water and groundwater pollution by nitrates and pesticides. Other problematic areas include emissions of NO_x and small particulates and ground-level ozone concentration. The potential gains in pollution reduction from regulating large point sources of air and water pollution are, or will soon be (with some exceptions), practically exhausted. A change of approach is needed to deal effectively with small-scale and diffuse sources (e.g. small businesses, service industries, transportation, agriculture,

* Australia, Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.

** Germany, Iceland, Portugal, Norway, Japan, Slovakia reviews.

*** Belarus, Bulgaria and the Russian Federation.

households/ consumers, end of life products). Increased generation of waste combined with the NIMBY (*Not in My Back Yard*) syndrome is a source of difficulties. Management of biodiversity, particularly outside protected areas and for all species (not just those that are threatened), has not proven an easy task. Adopting an ecosystem approach to nature conservation remains a challenge.

There is a need to better integrate environmental concerns in sectoral policies...

A number of countries have adopted national plans for environmental management, or more broadly for promoting sustainable development. Because of economic pressure or lack of sufficient societal and policy support, however, progress in implementing them has been limited. Over the last 20 years, the manufacturing industry as a whole, and the chemical industry in particular, have shown that integration of environmental and industrial policies can be carried out successfully without endangering competitiveness or employment. Other economic sectors have also begun taking greater account of environmental requirements, but not yet to the extent of significantly modifying their overall impacts on the environment. As a result, little progress has been made in areas where effective implementation depends on significant changes or reforms in economic or sectoral policies. The sectors with the greatest environmental impact at present are energy, transport, agriculture and, in some countries, industry. The experience of several countries, in particular those which joined the OECD relatively recently, proves that environmental convergence can be achieved without jeopardising economic development and social cohesion.

... and to strengthen international co-operation.

In terms of international co-operation, important progress has been made by giving effect to a range of international agreements -global, regional and bilateral- and to other commitments made, for example, through ministerial declarations. Notable achievements include reductions in emissions of ozone-depleting substances, abatement of SO_x emissions, severe restrictions on the dumping of waste at sea, and protection of some species (e.g. cetaceans, migratory birds). Transboundary movements of hazardous waste are strictly controlled, and the abuses of the past in this regard have been eliminated. Emissions of pollutants to regional seas, such as the North Sea and the Baltic, have been reduced and emissions of toxic substances, especially to many international lakes and rivers, greatly restricted. International co-operation at the bilateral level has progressed considerably, and regional co-operation has grown under a variety of new agreements. However, substantial efforts are still needed to achieve full implementation of the numerous commitments made at international level, such as concerning air pollution or climate change- and not all environment related problems have proven equally amenable to international solutions.

OECD Environmental Performance Reviews: 29 Examples of Special Issues

Australia	Ozone depleting substances
Austria	Controlling CO ₂ emissions
Belgium	Pricing drinking water
Canada	Greening of government
Czech Republic	Environmental transition
Denmark	Environmental aid to developing countries and countries in transition
Finland	Eco-certification of sustainable forest management
France	Green taxation
Germany	Environmental progress in the new Länder
Greece	Towards environmentally sustainable tourism
Hungary	Environmental convergence with the EU
Iceland	Transferable fishing quotas
Ireland	Environmental information centre
Italy	Energy pricing and intensity
Japan	Decoupling air emissions from GDP
Korea	Integrating environmental concerns in transport policies
Luxembourg	Recovery and recycling of problem waste
Mexico	Environmental reform
Netherlands	Partnership with industry
New Zealand	Protection of environmental values of the indigenous population
Norway	Combating acid rain
Poland	Pollution charges and fines
Portugal	Environmental convergence within the EU
Spain	Managing protected areas
Sweden	Air pollution taxes and charges
Switzerland	Agri-environmental payments
Turkey	National environmental planning
United Kingdom	Protecting the national heritage
United States	SO ₂ emissions trading

Environmental policies carried out in the 1990s have clearly contributed to improving the state of the environment in OECD Countries. Moreover, these policies have not in themselves posed significant economic costs in Member countries, implying total expenditures in the order of only 1-2% of GDP. Furthermore, they have not created significant distortions in international trade or had detrimental effects on employment. On the contrary, environmental policies have often provided positive incentives for economic restructuring and technological innovation.

To meet national and international environmental commitments, however, it will be necessary to strengthen the integration of environmental, economic and social concerns in policy design and implementation in the near future, especially in the energy, transport and agriculture sectors, and to provide price signals that reflect social and environmental costs and are not biased by environmentally damaging subsidies. Environmental policies will need increased emphasis on implementation and enforcement. Openness, accountability and access to information will need to be improved, and stakeholder participation further encouraged. In addition, international co-operation will need to be increased even further.

HIGH PRODUCTION VOLUME CHEMICALS

The chemicals industry makes products with many beneficial uses...

Chemicals are used to make virtually every manufactured product — paints and plastics, medicines and pesticides, detergents and solvents, toys, computers and automobiles, to name only a few — and play an important role in the everyday life of people around the world. Although chemicals are indispensable and improve living standards immeasurably, they can also pose risks to human health and the environment. Since the early 1970s, OECD countries have been working together to address the issue of chemicals safety. Initially the focus was on the safety testing and assessment of newly developed chemicals, before they were put on the market. About 15 years ago an OECD Council Decision called for the Organisation to spearhead a systematic effort to investigate those chemicals which were already in use, some of them for a long time, and whose safety had not yet been evaluated. The assessment is based on a small battery of tests agreed by Member countries, which study the inherent characteristics of a chemical and its toxicity to man and the environment — the Screening Information Data Set (SIDS).

...but the safety to humans and the environment of a great many chemicals has not yet been evaluated.

The immense task of investigating chemicals on the market is being shared among OECD countries...

Given that estimates of the number of chemicals on the market — the existing chemicals — range from 70 000 to 100 000, and that approximately 80% of them are produced in OECD countries, it was clear that the immense task of investigating them needed to be shared among countries and that priorities needed to be set. Assuming that the greatest exposure of humans and the environment is potentially to those chemicals which are available in the highest volumes, countries agreed to focus their co-operation on High Production Volume (HPV) chemicals, defined as those produced in volumes of at least 1 000 tonnes per year in at least one Member country or the European Union. In OECD this comprises over 5 000 chemicals.

...with the voluntary assistance of the chemicals industry to co-operatively test and assess HPV chemicals.

The systematic investigation of existing chemicals involves several steps: selection, information gathering, testing if necessary and assessment. The success of this work has always depended on the voluntary co-operation of the chemicals industry to provide data to Member countries and undertake necessary testing. Recent efforts by the industry through the International Council of Chemicals Associations (ICCA) promise to internationalise and increase this co-operation many-fold. ICCA has committed to gather information, test as necessary and provide initial hazard assessments of 1 000 HPV chemicals by the end of 2004. Working closely with Member countries to ensure that the data and assessments are of sufficient quality to provide the basis for OECD-wide agreement, ICCA provided its first batch of SIDS Initial Assessment Reports in January 2001 for co-operative assessment by a standing group of technical experts representing Member countries, non-member countries, industry, trade unions and environmental citizens organisations (SIDS Initial Assessment Meeting). It is expected that the increased input of the industry will substantially increase the output and efficiency of the HPV Chemicals Programme.

After assessment, the potential hazard of an investigated chemical and the recommendations regarding the need for further work are endorsed by the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology. The internationally-agreed assessments are OECD's contribution to meeting the mandate set by the United National Conference on Environment and Development in Chapter 19 of its *Agenda 21* — to increase substantially the number of international assessments on existing chemicals.

200 chemicals have been investigated to date in OECD, and 400 more are currently under investigation...

Since 1990, when the co-operative investigation of HPV chemicals began in practice in OECD, approximately 800 new tests have been undertaken under the auspices of one of the 21 countries taking an active part in the work. About 20% of these tests have been of the more complicated (and expensive) types, like those for reproductive toxicity. Approximately 600 HPV chemicals have been or are currently being subjected to a systematic investigation of their potential effects on human health and/or the environment. Many other HPV chemicals will be dealt with in the near future. All countries face the task of addressing the safety of existing chemicals. Through this process of sharing the burden to investigate the safety of HPV chemicals, an immense international challenge — which could never have been addressed in its totality by one country alone — has become a manageable goal.

Sharing the Burden

The OECD HPV Chemicals Programme is based on the tenet of sharing the burden of the work of investigating existing chemicals, both among governments and between governments and the chemical industry. Many advantages result from working together in OECD to generate internationally agreed hazard assessments on a large number of HPV chemicals. It can help countries to meet their commitments made in 1992 at the Rio Earth Summit to significantly increase the number of international assessments available world wide. Industry can save resources by avoiding duplicative testing since all new data are developed under the requirements of the OECD system for the Mutual Acceptance of Data, and thus is acceptable to all countries. Finally, by sharing the burden of testing and assessing the large number of chemicals on the market, each of the 30 Member countries only carries out a proportion of the work and can use the results of those carried out by the 29 other countries for national/regional decision-making.

...benefiting Member countries, industry and non-member countries.

The advantages to the industry are obvious. Since only one of the companies producing a given chemical has to carry out an agreed test package, testing costs for the industry as a whole are reduced considerably. Because unnecessary duplicative testing is avoided, the use of animals in testing is reduced, with the corollary benefit of improving the industry's public image. Furthermore, by participating directly and indirectly in the discussions, industry can provide input to the planning of realistic systematic investigations.

Non-member countries benefit too, because more and more transparent data on chemical safety and assessment reports are becoming available world-wide. There are wider macro-economic effects as well. International harmonisation through working together in the same way will eventually reduce trade barriers and therefore encourage trade and economic efficiency.

SAFETY IN BIOTECHNOLOGY

OECD has a long history of work on biotechnology issues.

Biosafety issues are not new for the OECD. A 1982 OECD report "Biotechnology: International Trends and Perspectives" highlighted the issue of the safety of products of modern biotechnology. Since that time, Member countries have worked to develop principles for the safe regulation of modern biotechnology products as well as "technical tools" that can assist in science-based safety assessments. Given the increased public concerns for the safety of GMOs, this work is as important as ever.

A major achievement was the preparation of two reports on biotechnology and other aspects of food safety for the July 2000 Summit of the G8 Heads of State and Government.

As part of a broader engagement of the OECD on the issue, work in the Environment Programme is undertaken under the auspices of two groups: the Working Group on Harmonization of Regulatory Oversight in Biotechnology which covers environmental safety issues; and the Task Force for the Safety of Novel Foods and Feeds which deals with food safety assessment. A major achievement of these groups during the year 2000 was the preparation of two reports on "biotechnology and other aspects of food safety" as part of the OECD contribution to the July Okinawa Summit of the G8 Heads of State and Government. These documents summarise the latest knowledge in environmental and food safety assessment, and identify a number of areas for future work.

One of the important technical tools for environmental biosafety is the development of OECD consensus documents which provide science-based information that is mutually recognised among the Member countries. These documents are useful because they contain information which is agreed among OECD countries, and is used in the safety assessment of products involving transgenic organisms. All consensus documents are initially developed through a lead country approach. They are published following input and consensus on the final text from all OECD Member countries. To date, twelve consensus documents have been published, and another eighteen are in preparation. Five new documents will be published in 2001.

Furthermore, twelve consensus documents have been published, and another eighteen are in preparation.

OECD Consensus documents

OECD consensus documents address three subject areas in environmental safety:

- Information on the biology of major crop plant species (such as rice, wheat, maize), including details on the centres of origin and diversity, the use of the plant species in agriculture, horticulture or forestry, the potential for the species to naturally hybridise with related plant species, as well as information on the ecology of the species.
- Information on specific genes and their products that are used to confer agronomic traits on the plants into which they are introduced, for example, herbicide tolerance.
- Information on specific micro-organisms which are important in biotechnology.

A key component of the consensus documents on major crop species is information on the centre of origin and diversity, which is relevant for safety assessments. For many crop plant species, such as soybean and potato, these centres are found in countries that are not members of the OECD. Such information is provided by experts from those countries through co-operation with UNIDO and UNEP.

The OECD's Information System, BioTrack Online, provides Internet-based information on biotechnology...

A second important technical tool is OECD's Information System, BioTrack Online, that provides information via the Internet. BioTrack Online has been developed in co-operation with UNIDO's BINAS (Biosafety Information Network and Advisory Service) through a project known as BIOBIN. In summary, BioTrack and BINAS provide complementary information in a similar format. While OECD concentrates on information from its Member countries, BINAS focuses on information from UNIDO Member States that are not members of OECD. BIOBIN is a valuable global system, particularly for the regulatory community and the developers of products of biotechnology, because it disseminates information that is used when they are undertaking safety assessments.

...making it a valuable global system, particularly for the regulatory community and developers of biotechnology products for undertaking safety assessments.

OECD's BioTrack Online

BioTrack Online provides a range of information on safety in biotechnology in OECD Member Countries through the Internet, including:

- Full texts of published consensus documents.
- Information on regulatory developments in Member countries which includes, for all countries, details of legislation, regulations and guidelines, as well as the responsible ministries/ agencies together with contact persons.
- A database of approved field trials of genetically modified organisms in Member countries.
- A database of those transgenic products of modern biotechnology which have been approved for commercial use in Member countries.

BIOBIN was highlighted at the recent Intergovernmental Conference for the Cartagena Protocol (ICCP). It was recommended that during the pilot phase of the Biosafety Clearing House, which is called for as part of the protocol, use is made of existing information systems, including the OECD/UNIDO databases.

The work related to the safety of novel foods and feeds is also focussing on technical tools to promote continued international harmonisation in the field of safety assessment from a human health and animal feed perspective. The main area of work at this time is the development of consensus documents that provide information on critical parameters of food safety and nutrition for major crop plants, such as soybean and rapeseed. They complement the information developed in the environmental safety consensus documents. It is expected that four food safety documents will be published in 2001.

In 2001, OECD will hold an International Conference on the Environmental Impacts of GMOs.

A major event during 2001 will be an International Conference on the Environmental Impacts of GMOs. This was originally proposed in EPOC in April 2000, and subsequently endorsed by the OECD Council Meeting at Ministerial Level in June 2000, inviting "OECD to consider holding a conference in 2001 to address the environmental impacts of genetically modified organisms".

INTERNATIONAL CO-OPERATION ON THE TESTING AND ASSESSMENT OF ENDOCRINE DISRUPTERS

Ambient environmental levels of endocrine disrupting chemicals may result in fertility effects in humans and wildlife.

Concern has been raised that ambient environmental levels of chemicals commonly referred to as "endocrine disrupters" may be causing adverse effects in both humans and wildlife due to the interaction of these chemicals with the endocrine system. Initial reviews of existing studies and reports have noted limited evidence for endocrine disruption in (mostly male) humans resulting in fertility disorders, but several cases have been confirmed where local, sometimes high level, exposure has resulted in fertility effects and subsequent reproductive failure in wildlife.

To address this concern, OECD Member countries and international industry associations jointly initiated a high-priority activity in 1997 to:

This internationally recognised concern is being addressed in a way that avoids duplication of test efforts and unnecessary use of animals...

- Exchange information on testing and assessment activities in Member countries, in particular at the regulatory level, and co-ordinate these activities between countries.
- Revise existing and develop new guidelines for the testing of potential endocrine disrupters.
- Harmonise hazard and risk characterisation approaches internationally.

The objective of the OECD activity is to provide a set of internationally recognised and harmonised testing guidelines and assessment strategies that would avoid duplication of efforts and thus save resources, including animals. The work involves the scientific development and comprehensive validation of these new testing methods so they can be applied for the systematic, step-by-step assessment of the tens of thousands of chemicals currently in use.

In 1998 Member countries agreed on the concept of a framework for the testing strategy that comprises three steps:

...through the development and validation of globally acceptable testing and assessment approaches.

- *Initial assessment:* selecting (groups of) chemicals of potential concern from the universe of existing chemicals, based on available information.
- *Screening:* fast, simple, and economically efficient screening of relatively large series of selected chemicals for further priority setting and more in-depth testing.
- *Testing:* characterisation of the endocrine disrupting potential of selected priority chemicals.

Since the start of the activity a series of new tests have been developed and existing tests have been revised to fit the testing strategy. These tests include: (i) a screening test to identify (female) oestrogen disrupters in mammals; (ii) a screening test to identify (male) androgen disrupters in mammals; (iii) a screening test in fish for the detection of both oestrogen and androgen disrupters; (iv) a reproduction test in birds; (v) a repeated-dose systemic toxicity test in rodents; and (vi) a definitive two-generation reproduction test in rodents. In the near future, more tests will be considered for development. The process of validation of these tests to prove their sensitivity and reliability is currently in full swing. More than 30 testing laboratories in North America, Europe, Japan and Korea have already conducted a number of comparative studies with a variety of known endocrine disrupting chemicals. More co-operative validation work is underway.

The validation process: necessary to ensure regulatory acceptance

Test validation is the scientific process by which the reliability and relevance of a procedure are established for a particular purpose. In this context, the reliability of a test is defined as the reproducibility of results within and among test laboratories. Establishment of the relevance of a test requires that it can be shown to yield the correct measurements or predictions of toxicity, or other effects, when measured against a recognised standard test, or against a well-defined human health or environmental effect. In 1996, OECD Member countries agreed on a series of principles and criteria for a valid test and its subsequent regulatory acceptance.

With the tools available, a co-ordinated strategy for the assessment of endocrine disrupters needs to be developed...

With the framework in place and ongoing co-operative work on the validation of selected screening and testing methods bearing fruit, the tools for the testing and assessment of possible endocrine disrupters are taking shape. The next step is to use these tools, in other words, to develop a co-ordinated international strategy for the assessment of chemicals and the design of appropriate subsequent regulatory policy instruments. Such a strategy would include agreement on:

- Which chemicals are priorities for testing and assessment.
- Which Member countries will take the lead on specific tasks or chemicals to be addressed.
- How the results of each country's efforts could be shared to optimise the use of available resources.

...to support regulatory decision-making processes.

Recently, work on designing and implementing such a global assessment strategy has started, and the strategy is expected to be ready in 2002. The USA, Japan and the European Commission are taking the lead in the discussions in OECD. Issues currently on the agenda include the selection of candidate chemicals considered as potential endocrine disrupters, how to arrange their co-ordinated international assessment and what kind of regulatory follow-up actions would be entailed by the assessment outcome. Other, practical, issues include reaching agreement on the depth and format of international assessment reports, dividing identified chemicals to be assessed among Member countries, and assigning responsibilities for conducting the assessments.

POLLUTANT RELEASE AND TRANSFER REGISTERS (PRTR)

The public's right to know has moved to the forefront of environmental policy-making.

Over the past decade, the public's right to know has moved to the forefront of environmental policy-making and action. UNCED's Agenda 21, Principle 10 of the Rio Declaration, the OECD Council Recommendation on Environmental Information and the Aarhus Convention all emphasise the importance of providing public access to environmental information. In most OECD countries, the involvement of the public in environmental decision-making is regarded as an important component of sustainable development. A key tool governments are using to provide data to the public about potentially toxic releases to air, water and soil, along with waste transferred off-site for treatment, is a Pollutant Release and Transfer Register (PRTR). A PRTR brings together in one place information about what pollutants are being released, how much and by whom.

A PRTR is an important tool to track pollutant releases and transfers from facilities and to provide this data to the public.

Definition of PRTR

A PRTR is an environmental database or inventory of potentially harmful pollutants released to air, water and soil, and of waste transferred off-site for treatment and/or disposal. Facilities that release or transfer one or more of the chemicals listed in the PRTR, report periodically – usually annually – how much of each chemical was released or transferred and to which environmental media. These data are then made accessible to the public. A PRTR provides a means of tracking the generation and release of pollutants over time.

Although they do not mandate specific environmental improvements, PRTRs may have had a greater impact than many regulatory programmes.

This information also assists governments in making more informed decisions about the environment and better monitoring changes and progress. As governments set longer-term environmental goals to promote pollution prevention, chemicals management and sustainable development, they need data about what pollutants are being released and transferred into the environment to examine objectively how well their environmental goals are being met.

PRTRs also provide a powerful incentive for industry to reduce releases and transfers. In countries with a PRTR, the data collected has spurred firms to cut wastage, thus reducing costs, increasing efficiency and reducing environmental harm simultaneously. The fact that this information is accessible to the public is a strong driver for firms to take pollution prevention actions. PRTRs may have had a greater impact than many regulatory programmes in reducing pollutant releases and transfers even though a PRTR does not mandate environmental improvements.

OECD began work on PRTRs in 1993 as follow-up to UNCED...

The OECD began work on PRTRs in 1993 as a follow-up to the United Nations Conference on Environment and Development. In co-operation with UN organisations and representatives of OECD governments, industry and environmental groups, it prepared a Guidance Manual for governments on the establishment of PRTRs which was published in 1996. That same year, the OECD Council adopted a Recommendation on Implementing Pollutant Release and Transfer Registers.

...first, a Guidance Manual was developed in 1996 and then an OECD Council recommendation was adopted.

The Council Recommendation and the Guidance Manual provided a catalyst for the development of PRTRs across OECD countries and elsewhere, and a blueprint for ways to design efficient and effective systems. Since 1996, the number of Member countries with operating PRTR systems has more than doubled: eleven Member countries have now implemented PRTRs, and a further eight are in the process of developing PRTRs. A report on the progress of Member countries in implementing PRTRs in accordance with the Council Recommendation was completed in 2000.

Status of PRTR Programmes in OECD Countries

<i>Countries with PRTR Systems in Operation</i>	<i>Countries Developing PRTR Systems</i>
Australia	Belgium
Canada	Czech Republic
Ireland	Denmark
Japan	Finland
Korea	Hungary
Mexico	Italy
Netherlands	Sweden
Norway	Switzerland
Slovak Republic	
United Kingdom	
United States	

A PRTR Conference was held in Tokyo in 1998 at which OECD was asked to continue to develop tools to help governments prepare to meet future needs.

The OECD has also worked with non-member countries through a series of workshops on PRTR development. A major OECD conference involving non-member countries was hosted by the Japanese Environment Agency in Tokyo in September 1998 to assess international PRTR efforts and to map the way forward.

OECD has produced, or is in the process of finalising, several new documents based on recommendations from the Tokyo Conference, including:

- A guide on Member country experiences in the presentation and dissemination of PRTR data (published in 2000).
- A guide on current and emerging uses of PRTR data (to be published in 2001).
- A series of guidance documents on the identification, selection and adaptation of release estimation techniques (to be published in 2001).

OECD actively co-ordinates world-wide PRTR activities...

The importance of the information a PRTR can provide has led to the active involvement of many international organisations in this work. OECD continues to take the lead in facilitating the international exchange of experience on PRTR design and implementation world-wide, actively co-ordinating with many international bodies, including in the context of the Aarhus Convention.

...and future OECD work will focus on finding ways to overcome barriers and help to reduce costs in PRTR development and implementation.

A key theme for the future PRTR work is to provide supplementary guidance and tools to Member countries on ways to overcome barriers, and help reduce costs, in the development and implementation of a PRTR. The programme will continue to assist governments in meeting future needs, demands and challenges, including addressing releases from products and diffuse sources, the integration of other national inventory systems with a PRTR and the comparison of PRTR data across borders.

ANNEX

SG/COM/NEWS(98)39

OECD ENVIRONMENT MINISTERS SHARED GOALS FOR ACTION ADOPTED AT THE MEETING OF EPOC AT MINISTERIAL LEVEL ON 2-3 APRIL 1998

Implementing Sustainable Development...

1. OECD Environment Ministers¹, at their meeting in Paris on 2-3 April 1998, reaffirmed the leadership role and special responsibilities of OECD countries in the world-wide pursuit of sustainable development, in accordance with Agenda 21, as elaborated at the UN General Assembly Special Session in June 1997 (UNGASS). Ministers acknowledged the OECD's unique capabilities to contribute to these objectives through development of analytical tools and strategies; promotion of the integration of economic, social and environmental policies; objective assessment of progress through peer reviews of environmental performance; and outreach. They welcomed the Secretary-General's commitment to make sustainable development a key strategic priority for the OECD, and his proposals in response to the November 1997 Report of the High-Level Advisory Group on the Environment. They stressed the crucial importance of strong environmental policies in the implementation of sustainable development, and expressed the hope that other Ministers would integrate environmental concerns into their policies, whilst committing themselves to the integration of social and economic concerns into environmental policies. Ministers challenged their colleagues to work towards sustainable economic growth which enhances human and environmental, as well as economic, capital.

...In an Era of Globalisation

2. Ministers considered that economic globalisation, when combined with sound environmental and social policies, can provide a positive impetus to sustainable development. The process of globalisation provides an opportunity for all countries to be active participants in the world economy and thus has the potential to promote human well-being and environmental sustainability. In the absence of a strong environmental dimension in national policies and international co-operation, the benefits of globalisation can be undercut by the health impacts of pollution, irreversible damage to global climate system, loss of biodiversity, increased degradation and loss of agricultural lands and fisheries, and the overuse of other natural resources. Ministers reaffirmed their commitment to the overall aim of making environmental, social, investment and trade policies mutually supportive so as to achieve sustainable development.

Shared Goals

3. Ministers agree on the following goals as an expression of their commitment to action to implement sustainable development:

- I. To promote **strong national policies** and effective regulatory structures on the protection of the natural environment and human health.

¹ References to "Ministers" throughout this document are to the Environment Ministers of OECD Member countries and the European Environment Commissioner.

- II. To promote **an integrated policy approach** which encourages coherence among economic, environmental and social policies, by:
- a) promoting sustainable consumption and production patterns, through regulatory, economic, and social instruments, especially education and information, whilst giving particular attention to the global dimensions;
 - b) promoting other innovative approaches, such as eco-efficiency, aiming to achieve substantial improvements in resource productivity, for example by a factor of 4 and eventually of 10;
 - c) ensuring that prices of natural resources as far as possible reflect the true environmental and social costs of production, consumption and scarcity, in particular by gradually phasing-out environmentally damaging subsidies and tax breaks, and, as far as possible, by the "greening" of tax systems, through integrating environmental concerns into their design;
 - d) associating Ministerial colleagues in other key policy sectors, such as transport, energy, industry, trade, tourism, agriculture, fisheries and freshwater management, in integrating the environmental dimension into sectoral policies;
 - e) showing leadership by improving the environmental performance of governments' own operations, procurement and investment policies, and decision-making processes.
- III. To **strengthen international co-operation** in meeting global and regional environmental commitments by:
- a) giving a high priority to ratifying, implementing and establishing the incentives which ensure effective compliance with, and seeking synergies among, global and regional environmental conventions;
 - b) giving particular priority to the ratification and implementation of the Kyoto Protocol, in a way that:
 - minimises the socio-economic costs in developed and developing countries alike, and paves the way for further progress in limiting global emissions, by adopting effective national response policies and measures, and improving co-operation, with developing countries and with countries in transition to a market economy; and,
 - recognises that all OECD countries, on the basis of their differentiated responsibilities, need to play their part in combating climate change by implementing national strategies, including measures such as clear targets and effective regulatory and economic measures;
 - c) reaffirming their commitment to establish effective management systems for hazardous chemicals, inter alia through the signature, ratification and early implementation of the Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC), and the phasing out of certain Persistent Organic Pollutants (POPs) through a global POPs convention, for which negotiations have been initiated by UNEP;
 - d) actively engaging non-Member countries in dialogue, shared analysis and the development of strategies for implementing sustainable development, building, for instance, on the approach developed in the Environmental Action Programme for Central and Eastern Europe;
 - e) reaffirming the commitments made at UNGASS, and recognising the need to increase the overall volume of development assistance and calling for the mobilisation of private and public, domestic and external financial resources to enhance environmental investments, capacity building and the diffusion of environmentally-sound technology;

- f) promoting efforts to ensure that environmental concerns are effectively integrated into the multilateral trading system, and recognising, where they are necessary, the use of trade measures taken in the framework of Multilateral Environmental Agreements (MEAs) as an important policy tool;
 - g) promoting efforts to ensure that environmental concerns are effectively integrated into the proposed Multilateral Agreement on Investment (MAI) in a way that supports sustainable development, and so as not to limit the capacity to make and implement national and international environmental policies;
 - h) furthering harmonisation efforts among OECD countries on the implementation of OECD instruments on the Mutual Acceptance of Data, the management of chemicals and pesticides, the management of recyclable materials, and the development of testing and assessment methods for endocrine disrupters; and furthering co-operation on pollutant release and transfer registers (PRTRs), the development of inherently safer chemicals, and on the assessment of products derived through modern biotechnology;
 - i) giving particular focus to key cross-sectoral issues and the strategic directions for environmentally sustainable transport developed at the OECD Vancouver Conference and the UN Economic Commission for Europe's November 1997 Conference on Transport and the Environment in Vienna;
- IV. To **strongly support participation, transparency, information and accountability** in environmental policy-making by public authorities at all levels, *inter alia*, by:
- a) supporting or facilitating participation of key stakeholders in civil society in the development, implementation and monitoring of environmental policies, and in particular to engage in an intensive dialogue with the business community, trade unions and environmental citizens' organisations on the future of environmental policy-making in a globalising economy;
 - b) ensuring that, within the context of national law, and recognising the importance of protecting confidential business information, the public has ready access to environmental data and that citizens and organisations whose interests are affected have the ability, through administrative or judicial procedures, to challenge acts or omissions by private persons and public authorities which contravene provisions of national law relating to the environment;
 - c) monitoring and adoption of environmental accounting, leading to better qualitative and quantitative environmental reporting by public authorities and private firms, on a voluntary basis, which is essential for a better democratic debate on environmental concerns;
 - d) taking note of the forthcoming UN/ECE Resolution on the adoption of the Convention on Access to Environmental Information and Public Participation in Environmental Decision-making and Access to Justice, at the Ministerial Conference in Aarhus, Denmark, in June 1998;
 - e) implementing the principles set out in the *OECD Council Recommendation on Environmental Information*, which Ministers endorsed.

A Role for OECD

4. Ministers stressed the importance of maintaining a strong environmental component as an integral part of the new OECD vision for sustainable development. In pursuit of their shared goals, and recognising the new challenges and opportunities which globalisation poses for governments and the international community, Ministers highlighted the following priority areas for OECD work which, recognising the Organisation's priorities and resource constraints, they recommended be reflected in the overall programme of work determined by the OECD Council:

- a) deepen the analysis of the impact on the environment of globalisation, especially of trade and investment by:
 - deepening work on integrating environmental concerns into key economic sectors, such as agriculture and fisheries, transport, energy, and into trade, investment and fiscal policy, at Secretariat level and through co-operative arrangements among OECD committees;
 - further analysing the potential impacts of the proposed Multilateral Agreement on Investment on the capacity to implement environmental policies and Multilateral Environmental Agreements, and urge OECD to encourage dialogue and find concrete means of promoting closer co-operation between EPOC and the MAI Negotiating Group;
 - strengthening the environmental component of the OECD's Guidelines for Multinational Enterprises;
 - continuing the efforts in the Export Credits and Credit Guarantees Group to develop approaches for taking environmental factors into account when providing official export credit support;
 - expanding the co-operative testing and conducting of safety assessments of high production volume chemicals in an efficient way; and promoting the management of risks identified in these assessments, giving high priority to methods to detect endocrine disrupting effects;
- b) support national and international efforts to implement the Kyoto Protocol, including through the Annex I Expert Group and the Climate Technology Initiative (CTI), by examining the economic, social and environmental implications of climate response strategies, policies, measures, and flexibility mechanisms;
- c) analyse further the economic and environmental implications of the implementation of the Convention on Biodiversity, as well as other multilateral environmental conventions, *inter alia* the Convention to Combat Desertification;
- d) develop effective policy approaches for improving resource efficiency;
- e) further develop and adopt a comprehensive set of robust indicators to measure progress towards sustainable development, in concert with sustainable development indicator initiatives of other international agencies, to be used in country reviews and outlook reports, including in the second cycle of environmental performance reviews;
- f) continue to study the feasibility of introducing regulatory or fiscal measures in high growth transport sectors, such as aviation, in collaboration with ICAO and other competent bodies;
- g) further develop work on environmentally sustainable transport (EST), including guidelines for implementing EST principles, and paying particular attention to the recommendations of the Vienna Declaration on Transport and the Environment.

A Strategy for 2000 and Beyond

5. Ministers invited the OECD to develop a new environmental strategy for the next decade and agreed to review it when they meet in 2001 to prepare for the "Earth Summit +10" in 2002. The Strategy should help to ensure excellence in the OECD's contribution to the implementation of sustainable development in the next century.

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