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OECD ENVIRONMENTAL PERFORMANCE REVIEWS
A PRACTICAL INTRODUCTION

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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ENVIRONMENT MONOGRAPHS

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MONOGRAPHIES SUR L'ENVIRONNEMENT

Cette série vise à permettre une plus large diffusion de certains rapports techniques établis par le Comité des Politiques d'Environnement et la Direction de l'Environnement. Le présent rapport sur *"Examens des performances environnementales de l'OCDE - une introduction"* est mis en diffusion générale sous la responsabilité du Secrétaire général. Des exemplaires de ces monographies peuvent être obtenus, sur demande, en nombre limité.

RESUME

Le Groupe de l'OCDE sur les Performances Environnementales a commencé à conduire le programme sur les examens des performances environnementales des pays Membres de l'OCDE en 1992. Son mandat est fondé sur la demande des ministres de l'Environnement de l'OCDE (1991), celle du Conseil de l'OCDE lors de sa réunion au niveau ministériel (1991) et le Communiqué des chefs d'Etat et de gouvernement du sommet économique du G-7 (1991). L'objectif principal des examens de performances environnementales est d'aider les pays Membres à améliorer individuellement et collectivement les résultats obtenus dans leur gestion environnementale.

Cette monographie, préparée par le Secrétariat de l'OCDE sous forme de "manuel", est une introduction aux examens de performances résumant l'expérience pratique du GEP à ce jour.

Le présent document ne traite pas des conclusions du GEP - quant à la performance environnementale des pays de l'OCDE, elle-même. Ceci est décrit dans la publication "*Performances Environnementales dans les pays de l'OCDE - Progrès dans les années 90*" présentée lors de la réunion des ministres de l'Environnement de l'OCDE (1996). Le texte central de cette publication est reproduit ici en annexe 2.

Le plan général du rapport est le suivant :

1. Le programme de l'OCDE - Pourquoi ?
- ◊ mandat, objectifs, expérience acquise par l'OCDE

2. Processus général d'un examen
- ◊ préparation, mission d'examen, réunion d'examen du GEP, publication

3. Cadre de référence
- ◊ stratégie environnementale, performance environnementale, cadre pressions-état-réponse

4. Sources d'information
- ◊ information qualitative, informations quantitatives nationales, données environnementales de l'OCDE, indicateurs environnementaux de l'OCDE

5. Aides aux auteurs
- ◊ conseils, checklist

Annexes
- ◊ checklist des examens de performances
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OECD ENVIRONMENTAL PERFORMANCE REVIEWS:
A Practical Introduction

The OECD Group on Environmental Performance (GEP) began conducting reviews of the environmental performance of OECD Member countries in 1992. This practical introduction to the performance reviews summarises the GEP's experience to date. The ideas presented here should be understood as one point in an evolving process, not as a definitive statement on performance reviews.

The present document does not address the substantive analysis of performance developed by the GEP. It builds on accepted OECD tenets (Ministerial Declarations; Decisions, Recommendations and adopted Principles), international conventions, agreements and declarations, environmental indicators and information on the physical, human and economic circumstances of different countries. With experience, the GEP has built up a body of thinking that gives consistency to and serves as a reference for the reviews. It is reflected in the report "*Environmental Performance in OECD countries: Progress in the 1990s*". Annex 2 provides an extract of this publication.

1.1 Mandate

Environment Ministers of OECD countries, at their meeting in January 1991, agreed that it was desirable to review systematically the environmental performance of individual OECD countries in meeting domestic policy objectives and international commitments. The Ministers endorsed the redirection of efforts by the OECD to start environmental performance reviews of Member countries. This was subsequently confirmed by the OECD Council meeting at Ministerial level in June 1991, and supported by the London G-7 economic summit one month later.

The Environment Policy Committee approved the Detailed Plan and Implementation Strategy for the Environmental Performance Reviews at its meeting of December 1991.

1.2 Aims

The principal aim of the OECD's environmental performance reviews is to help Member countries improve their individual and collective performances in environmental management. The primary goals for this programme are:

- to help individual governments judge and make progress by establishing baseline conditions, trends, policy commitments, institutional arrangements and routine capabilities for carrying out national evaluations;
- to promote a continuous policy dialogue among Member countries, through a peer review process and by the transfer of information on policies, approaches and experiences of reviewed countries;
- to stimulate greater accountability from Member countries' governments towards public opinion within developed countries and beyond.

Programme efforts are directed at promoting sustainable development, with emphasis on developments in domestic and international environmental policy, as well as on the integration of economic and environmental decision-making.

1.3 Building on OECD Experience

The review of trends, policies and countries' performance is a basic OECD function and is at the heart of the "trade" of the OECD. The environmental performance review programme extends this approach to the environment. The Economic Surveys are the longest-standing OECD review programme, and the best-known to the general public. Other review programmes exist in such fields as energy, agriculture and development assistance.

The environmental performance review programme has been modelled largely on the methodology of the Economic Surveys. They differ, however, in terms of:

- the fact that reviewing countries are directly involved in the elaboration of the report;
- the number of reviews per year;
- the national representation on the GEP, which tends to come from the capitals more than from the permanent Delegations.

2.1 Preparation Stage

Preparation begins with the formulation by the Secretariat, in consultation with the country under review, of the outline of the review, i.e. the choice of topics to be examined. This outline includes mostly topics standardised for all countries in a given cycle, but also speciality topics selected for each specific country review.

The Secretariat assembles a review team, which typically includes experts from three reviewing countries, Environment Directorate staff and prominent consultants, and often an observer (*e.g.* from a different OECD directorate, from the UN-ECE).

This stage also includes data and information gathering by the Secretariat in co-operation with the reviewed country, as well as consultation with country desks within the OECD. The periodic environmental data collection effort by the Group on the State of the Environment and the OECD core set of environmental indicators, effectively provides internationally harmonised environmental data. Relevant information and documentation are also gathered from the reviewed country and sent to all team members so they can familiarise themselves with the situation in the reviewed country well before the review mission.

A set of discussion themes is prepared for each review for use as a kind of agenda during the team mission. It covers each of the sessions of the mission. It is circulated to participants in the country being reviewed, a month before the start of the visit, and it assists in preparation for the meetings.

2.2 Review Mission Stage

During this stage the expert team meets with government and non-government representatives of the country under review, including industry, trade unions, NGOs, experts and local government representatives. As the team is already well informed about the situation in the country being reviewed, its discussions focus on the evaluation of environmental performance. Each team member prepares a first draft of a chapter of the review report during the mission. Participation of reviewing country's experts in the teams themselves brings invaluable experience.

Further drafting, compilation (including preparation of statistics, tables and figures), harmonisation and editing of a consolidated draft text are done by the Secretariat. This document is circulated for comment to all reviewing country experts, to the Environment Directorate and to other interested personnel. From four to six months are needed from the review mission until the completion of the document.

2.3 Peer Review by the GEP

The report is then sent to all capitals four to six weeks before the GEP peer review meeting. At the meeting, a full day is allocated to the examination of a given country. The reviewing countries take a lead in opening the debate about specific parts of the review. All countries participate in the debate. The peer review meeting of the GEP is one of the two main “products” of a review. Pursuant to the second specific aim of the programme (i.e. policy dialogue), no minutes are taken in order to encourage a free and frank exchange of views. This exchange of views concentrates on issues that are significant or sensitive. It helps deepen the understanding of the main issues under discussion, probe the ground of any draft conclusions that are challenged, look for a balance between criticisms and commendations and aims for fairness in judgment between one review or another. The "Conclusions" chapter is amended and approved by the Group.

An very important "by-product" of the programme is the benefit that Member countries derive from serving as reviewers: country experts have the opportunity to draw first hand on the experience of the reviewed country, to the advantage of their work back home.

2.4 Publication Stage

Publication of the completed report under the responsibility of the Secretary-General constitutes the last step of the review process. Amendments are requested from the reviewed country concerning factual matters. An updating of some facts and figures is also done by the Secretariat, together with possible changes in line with the GEP Conclusions.

The report’s Conclusions include policy recommendations. The reports are first aimed at decision-makers, a number of whom are present at the peer review meeting. Their role in further "promoting" the report, and making the best use of the results of the peer review meeting, is crucial. The reports are also aimed at a wider audience (general public, NGOs, industry, government at different levels) in the country under review, and therefore help to achieve the third specific aim of the programme, i.e. to stimulate greater accountability of governments towards public opinion. Publication of the reports attracts attention in the press in the country under review and in other countries as well (Annex 2).

2.5 Follow-up and monitoring

Importance is attached to feed-back from countries on the use they have made of the OECD performance reviews. This feed-back can take the form of formal "government responses", of informal oral reports by reviewed countries to the GEP (at its subsequent meetings), and will also come with the second cycle of OECD reviews.

3.	Reference Framework	3.1	Environmental strategy
		3.2	Environmental performance
		3.3	Pressure-state-response framework

3.1 Environmental Strategy

The reviews are structured to further the principal goals of the "OECD Environmental Strategy for the 1990s", as set forth by OECD Environment Ministers. These strategic goals are:

— reducing the overall pollution burden and ensuring sustainable development of natural resources in OECD countries;
— integrating environmental and economic policies;
— strengthening co-operation with the international community.

In accordance with the outline discussed in the previous section, reviews include a number of standard chapters and speciality chapters and sections. Reviews present recommendations by the GEP; these recommendations largely reflect the body of policy orientations already commonly agreed by member countries in a range of programmes within OECD; they also reflect common views in the GEP on the way forward or new directions adopted within OECD (e.g. greening of government operations).

3.2 Environmental Performance

Achieving objectives

Whether objectives are being met is the essence of appraising environmental performance. More precisely, performance should, as far as possible, refer to three main questions relating to the achievement of national objectives or international commitments:

i) to what extent is the objective achieved? Retaining a clear distinction between intentions, actions and results, the emphasis being on results, is central to assessing performance.
ii) is the objective ambitious or modest? In other words, how does the objective itself relate to the country-specific context, i.e. to the past and current state of the environment, natural resource endowment, economic structure and development levels, and demographic trends? Objectives are chosen and priorities are set through a country's decision-making process on the basis of scientific, ethical and economic considerations. Environmental performance reviews therefore include an introductory chapter outlining this context, which examines and presents the physical, human, economic, legislative and institutional/administrative context and introduces an element of standardisation and readily accessible comparability in the review process.
iii) are results achieved in a cost-effective way?

A hierarchy of objectives

Environmental objectives may be more or less explicit and may refer to different types and levels of commitments:

i) aims at the general level (e.g. preserving and improving environmental quality, sustainable development);
ii) qualitative goals at the intermediate level (e.g. preserving the ozone layer, reducing acidity);

iii) specific quantitative targets or a commitment to the implementation of a set of policy measures at a more specific level. Such targets or commitments are determined by technical, administrative and economic criteria.

A historical perspective

The historical perspective adopted should also examine the evolution of environmental policy (e.g. the trend away from purely curative approaches to environmental problems and towards preventive and integrated approaches) and the development of innovative approaches, emerging policy directions and related objectives. Reviewing performance requires looking at past achievements and difficulties as well as future progress.

A range of policy instruments

Pursuing environmental objectives requires the development of mechanisms and incentives that will enhance the efficiency of environmental resource use. Policy instruments therefore play an essential part in environmental performance. It is suggested that a broad range of policy instruments be considered in environmental performance, notably:

— regulatory (standards, licensing, zoning, etc.);
— economic (charges, financial incentives, market creation, subsidies, etc.);
— institutional (administrative and legal reform);
— educational and information related;
— public investment (in infrastructure, R&D, etc.);
— enforcement and compliance.

While the nature and scale of such instruments are important in determining performance, it should be noted that in practice, policy initiatives involve packages of instruments drawn from a wide portfolio.

3.3 Pressure-State-Response Framework

The pressure-state-response (PSR) framework (Figure 1) was initially developed to organise the Environment Directorate work on environmental indicators. It is based on a concept of causality: human activities exert pressures on the environment and change its quality and the quantity of natural resources. Society responds to these changes through environmental, general economic and sectoral policies. While the PSR framework has the advantage of highlighting these links, it tends to suggest linear relationships in human activity-environment interactions. It should be borne in mind that the actual relationships in ecosystems and in environment-economy interactions are more complex.

The performance reviews use the PSR framework to structure the chapters on pollution, on resource management and on integration of the environment into specific sectors of the economy:

i) the first section describes the existing situation: the quality and use of a particular environmental medium or the pressures attributable to a sector of economic activity. This section is intended to provide a straightforward factual description of the environment.
ii) the second section describes the country's responses, i.e. those of administrations, enterprises and households. This section surveys relevant environmental and economic policies and programmes. It highlights three aspects of the country's responses: goals, actions taken to achieve them, and the resulting impact on the state of the environment; in other words, intentions, actions and results.
iii) the third section evaluates the country's responses, assessing their adequacy in relation to the objectives adopted. This assessment provides the basis for the recommendations made in the Conclusions of each review.

4.	**Information Sources**	4.1	National qualitative information
		4.2	National quantitative information
		4.3	OECD environmental data
		4.4	OECD environmental indicators

4.1 National Qualitative Information

A qualitative information base is needed to provide:

— for each country: information on its environmental institutions, policies and problems;
— for international issues: information on international environmental agreements and their degree of implementation.

This information base should rely as far as possible on documentation already available. Among others, the following information sources are used:

— general national environmental documentation (state of the environment reports, statistical yearbooks, UNCED reports, national prospective studies, national strategies, national plans);
— specialised national environmental documentation (e.g. air law, air policy documents);
— conclusions of other OECD reviews (e.g. economic and energy reviews);
— chronology of recent environmental events.

4.2 National Quantitative Information

The reviewed country should provide available quantitative data of several types:

— statistics about the physical environment;
— national environmental data supporting the OECD core set of environmental indicators;
— national environmental indicators;
— specific sectoral or subnational environmental data (e.g. results of monitoring surveys, environmental data for cities, states or regions, data about key economic sectors under review);
— economic data relating to the environment.

4.3 OECD Environmental Data

The routine OECD two-year cycle of environmental data collection, treatment, quality assurance and publication provides internationally harmonised data to support the OECD environmental performance reviews. In particular this cycle and the work of the Group on the State of the Environment lead to:

— the OECD SIREN database;
— OECD publications (e.g. the OECD Compendium of environmental data, pollution abatement and control expenditure data);
— reviews of environmental information systems and data (particularly for new Member countries and non-Member countries).

4.4 OECD Environmental Indicators

The demand

The original mandate for this OECD work dates back to the OECD Council (1989) and G-7 summits of Heads of State and Government (Paris 1989, Houston 1990 and London 1991). The OECD Council Recommendation on Environmental Indicators and Information, approved by Environment Ministers and Member country governments on 31 January 1991, includes the recommendation that environmental indicators be developed to measure environmental performance and better integrate environmental and economic decision-making. Environmental indicators have been identified as a specific tool for environmental performance reviews, providing all reviews with a common denominator.

The OECD work on environmental indicators is expected to contribute to environmental performance assessment and to evolve gradually in congruence with the reviewing programme itself. In particular, work on indicators of general environmental performance and work on sectoral indicators that integrate environmental concerns in specific economic sectors (e.g. agriculture, energy, transport) are of direct use.

Conversely, the environmental performance reviews are expected to trigger progress on the OECD environmental indicators programme. For instance, they could also help in focusing on indicators tracing progress on national and international objectives. They could further help in distinguishing between indicators and "Indicators", the latter being more synthetic and aggregated. But facts are, must, and should be interpreted with the help of ideas: like economic indicators, environmental indicators require both the solving of technical difficulties and scientific and policy-oriented interpretation to acquire their full meaning.

The OECD response

The OECD programme includes work on:

- the OECD core set of environmental indicators;
- indicators for the integration of environmental concerns in sectoral policies (e.g. transport, energy, agriculture, forestry);
- environmental accounting.

The work programme on the OECD core set of environmental indicators has led to:

- specification of framework and terminology;
- definition of indicators;
- measurement of indicators;
- use of indicators in performance reviews.

The PSR framework (used both for the OECD core set of environmental indicators and the analysis of environmental performance) distinguishes three broad types of indicators (Figure 1):

i) Indicators of environmental pressures, corresponding to the "pressure" box of the PSR framework. They describe pressures from human activities on the environment.

ii) Indicators of environmental conditions, corresponding to the "state" box of the PSR framework and as such reflecting the ultimate objective of environmental policy-making. Indicators of environmental conditions should be designed to give an overview of the situation (the state) of the environment and its development over time, and not the pressures on it. In practice, the distinction between environmental conditions and the pressures may be ambiguous and the measurement of environmental conditions can turn out to be difficult or very costly. Therefore, the measurement of environmental pressures is often used as a substitute for the measurement of environmental conditions.

Figure 1a. **Pressure - State - Response Framework**

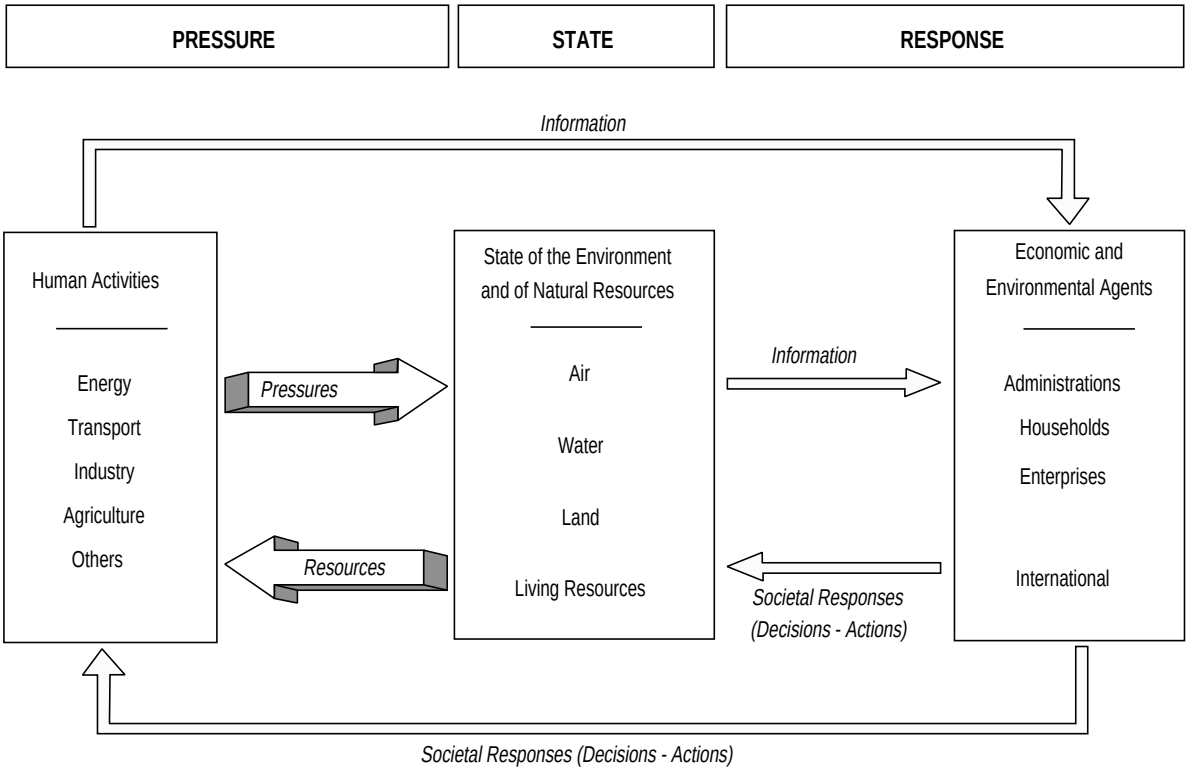
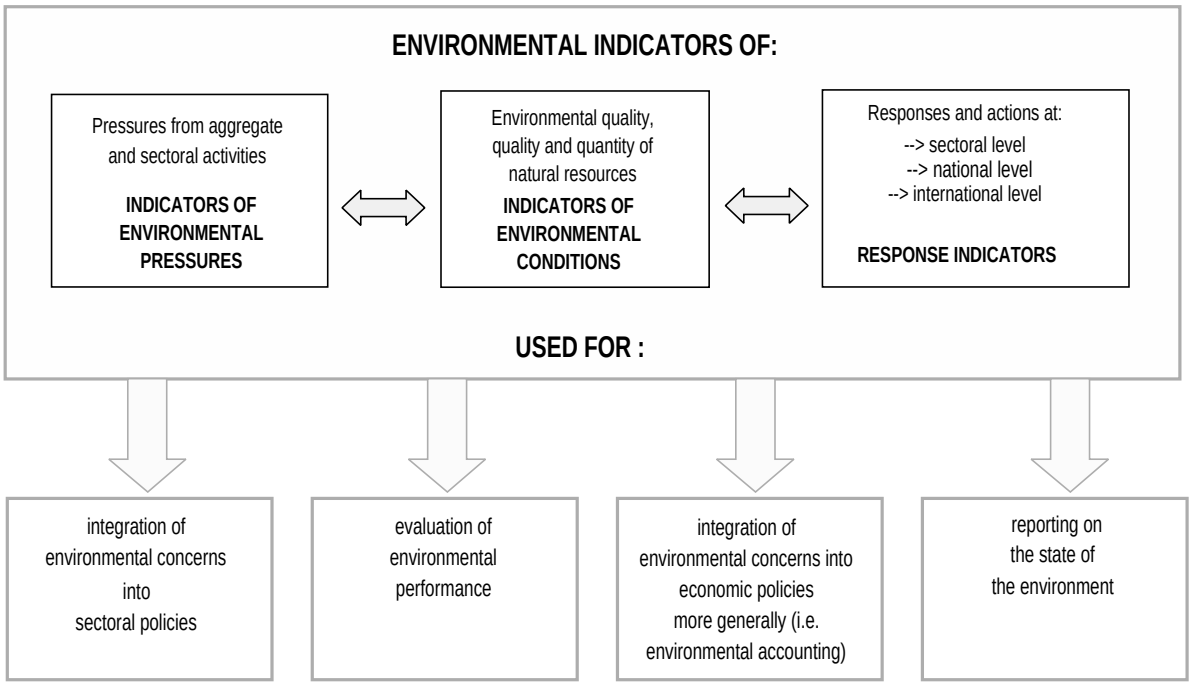


Figure 1b. **Nature and Use of Environmental Indicators**



Extract from "Environmental Indicators - OECD Core Set", OECD, Paris, 1994.

iii) Indicators of societal responses, corresponding to the "response" box in the PSR framework. Societal response indicators are measurements showing the extent to which society is responding to environmental changes and concerns. Societal responses refer to individual and collective actions a) to mitigate, adapt to or prevent human-induced harm to the environment, b) to halt or reverse environmental damage already inflicted and c) to preserve and conserve nature and natural resources. Compared with indicators of environmental pressures and conditions, most indicators of societal responses have a shorter history and are still in a phase of development, both conceptually and in terms of data availability. This must be taken into account in their use, to avoid misinterpretation.

Using indicators

When using environmental indicators, the following principles should be respected:

— Indicators provide only one tool for evaluations and need to be supplemented by other qualitative and scientific information in order to avoid misinterpretation. Such information is particularly needed to explain driving forces behind indicator changes, which form the basis for an assessment.

— Indicators must be reported and interpreted in the appropriate context, taking into account the ecological, geographical, social, economic and structural features of countries.

— There is no single method of standardisation for the comparison of environmental variables across countries. When comparing indicators across countries, the assessment will be influenced by the chosen denominator (GDP, population, land area) as well as by national definitions and measurement methodologies. Although standardisation is needed to facilitate intercountry comparisons, absolute values may be the appropriate measure where, for example, international commitments are linked to absolute values. Generally, intercountry comparisons should be subject to caution.

5.1 Advice to Writers

When work begins on each performance review, the OECD Secretariat provides guidance to each team member on the process for the review, what his or her chapter is to include, and the best way to accomplish the tasks at hand in the limited time available. The materials provided in advance include detailed documentation and information about environmental issues in the country to be reviewed. They also include sample chapter outlines based on other reviews, to assist in structuring the work.

Each chapter consists of two descriptive parts and an evaluative part. Experience has shown that a good means of preparation for the mission is to start writing the chapter beforehand on the basis of the information provided in advance. The initial drafting helps formulate questions to resolve during the mission. These missions are not fact-finding missions; they are intended to focus on evaluation of environmental performance.

Each chapter typically includes:

— a description of the current state/trends in the sector/topic under study, and of the pressures on it;
— a description of relevant policy objectives (general aims, qualitative goals, specific quantitative targets or commitments to a set of policy measures) and responses (measures taken);
— an evaluation of environmental performance primarily in terms of the objectives: achievements and areas for progress, keeping a clear distinction between intentions, actions and results.

It is recommended that each paragraph be centred on an idea or a theme, and that the key word(s) in each paragraph be underlined.

Chapters are illustrated by figures and tables, which can be proposed by experts along with their drafts, using a rough drawing, and indicating the source of data or providing the data. These data should be the most recent available.

5.2 Checklist

The GEP has developed a checklist for structuring and selecting issues covered in the performance reviews. It is organised in the same way as the reviews; thus, Part I deals with reducing pollution burdens and managing natural resources, Part II deals with integrating environmental, economic and sectoral policies, and Part III deals with strengthening international co-operation.

The checklist (Annex 1) takes the form of a series of tables, one for each of the topics likely to be addressed in the reviews (air, water, waste, natural resources, environment-economy integration, energy, transport, international co-operation). Each table is organised using the pressure-state-response framework, modified as appropriate to incorporate differences among the topics. Within each "cell" of the table, the checklist suggests issues which could be addressed in the performance review.

The checklist is viewed as one additional tool to contribute to the preparation of the reviews. It is designed to supplement rather than replace the reference framework and the environmental indicators as organising principles for the reviews.

ANNEX 1
CHECKLIST FOR ENVIRONMENTAL PERFORMANCE REVIEWS

This document was prepared by the Secretariat in co-operation with the Delegations of the United States, Norway, the Netherlands and Canada. It concerns the reference framework for Environmental Performance Reviews developed by the GEP. It presents a *Checklist* for environmental performance reviews. It is has to be seen in relation to other key aspects of this reference framework: concept of environmental performance, pressure-state-response conceptual framework, strategic goals set forth by OECD Environmental Ministers.

FRAMEWORK

The *Checklist* presented below is structured along the framework of EPRs:

— Part I deals with reducing the pollution burden and management of natural resources; this part contains chapters on air, water, waste and natural resource management. Tables Ia - Id of the *Checklist* correspond to these chapters. The structure of each chapter follows the ***Pressure-State-Response framework*** which provides the link to the OECD *core set* of environmental indicators.

— Part II deals with integrating environmental, economic and sectoral policies. This par typically contains chapters on general environment/economy integration and on a selectve basis, chapters on the sectoral integration of energy/environment and transport/enviroinment. Tables IIa - IIc of the *Checklist* correspond to these chapters. The structure of each chapter follows a ***modified Pressure-State-Response framework*** which provides the link to the OECD *sectoral indicators*. Other chapters on integration (e.g. agriculture, forestry, chemical industry) are also present in specific country reviews but do not figure in this checklist. It is expected to include them as experience with such chapters accumulates.

— Part III deals with strengthening international co-operation. Table III of the *Checklist* corresponds to this part. The structure of this part follows the ***Pressure-State-Response framework*** which provides the link to the OECD *core set* of environmental indicators.

NEXT STEPS

It is expected that the Checklist proposed would provide one additional tool to contribute to define and structure OECD environmental performance reviews. More precisely, it would i) supplement the work on the reference framework concerning the concept of environmental performance, the pressure-state-response conceptual framework, the strategic goals set forth by OECD Environment Ministers; ii) supplement the work on environmental indicators. Conceptually, the Checklist is of a relatively exhaustive nature, while the core set focuses on a small number of key indicators.

It is expected therefore that the Checklist would be used:

— as a menu from which to select items to be covered in specific chapters of environmental reviews, and thus help defining chapters at an early stage;

— and would be included as one of the elements of the handbook for EPRs being assembled by the Secretariat, for use as a guide to EPRs (for instance for members of review teams, new members of the GEP);

— as an evolving tool, as new issues are emerging (e.g. social dimensions of environmental performance) or new specialty chapters are progressively developing (e.g. land and soil, fisheries, forestry, agriculture, chemical industry, information and education).

Table I-a. **Checklist - Air**

Framework	Item
Pressure	Emission of air pollutants: SOx,NOx,particulates,CO,VOC,CO_2,CFCs,CH_4,N_2O,Toxics (e.g. lead,radon) Emission sources: domestic sources/transfrontier air pollution stationary/mobile sources different economic sectors Fuel mix Critical loads and limit values of pollutants
State	Ambient air quality: concentration of SO_2, NO_2, PM etc. toxics (e.g.lead) ground level ozone Urban air quality Indoor air pollution Air pollution and human health Air pollution and ecosystems Air pollution, cultural heritage and materials damage
Societal responses	***Objectives*** Objectives, goals, targets of air management policy, including: air pollution emission goals and targets ambient air quality goals and targets energy efficiency improvement greater use of clean technology research and development development of alternative fuels minimisation of industrial risks Strategies and plans Environmental initiatives by industry and NGOs Links between national and international efforts
	Implementation Institutional arrangements Role of different levels of government Enforcement
Societal responses	***Instruments*** Ambient standards, emission standards, technology standards Operating permits Other regulatory instruments Economic instruments: emission fees, energy-related taxes, prices and subsidies Voluntary agreements Enforcement compliance Integrated pollution control
	Economic aspects Expenditure and cost for air pollution abatement Financing mechanisms for air pollution abatement expenditure
	Information Air pollution monitoring Dissemination of information Environmental science, risk assessment

Table I-b. **Checklist - Water**

Framework	**Item**
Pressure	Water quantities Use of water resources: absolute, relative to availability, relative to run-off surface, ground water use Discharges: from municipal sewage, from waste and industrial activities, run-off from agriculture, other sources, e.g. aquaculture, underground tanks, point-source/non-point source pollution Critical loads and limit values of pollutants Floods, droughts Air depositions
State	Quality of inland surface waters and ground water: eutrophication, acidification, toxics, contaminated sediments, other water quality problems Water quantity, fresh water deficits, dehydrated soils Salt water intrusion, salinisation of soils Drinking water quality Marine water quality Coastal water quality
Societal responses	***Objectives*** Objectives, goals, targets of water management policy, including: discharge goals and targets, ambient water quality goals and targets, promotion of clean technology, promotion of research and development, minimisation of industrial risks, modernisation of water supply system Strategies and plans Environmental initiatives by industry and NGOs Links between national and international efforts
Societal responses	***Implementation*** Institutional arrangements Management by water basins/by administrative region Role of different levels of government Quantity management, rationing Integrated quantity and quality management - Planning and project appraisal - Enforcement
	Instruments Ambient standards, discharge standards, technology standards Operating permits Metering systems Other regulatory instruments Economic instruments: fees for waste water discharges, taxes, subsidies Voluntary agreements Water pricing Penalties Integrated pollution control
	Economic aspects Expenditure for water pollution abatement Financing mechanisms: for water pollution abatement expenditure, for water supply
	Information Water quality and pollution monitoring Dissemination of information Environmental science, risk assessment

Table I-c. **Checklist - Waste**

Framework	**Item**
Pressure	Definition of waste Waste quantities and trends: municipal waste, industrial waste, mining waste, agricultural waste, hazardous waste (e.g. medical waste, radioactive waste) Pollution from waste (e.g. groundwater, soil) Toxic contamination, human health effects, limit values National and international waste movements Contaminated sites
State	
Societal responses	***Objectives*** Objectives, goals, targets of waste management policy (waste hierarchies), including: waste minimisation, recycling and re-use, adequate disposal (e.g. landfill, incineration), adequate hazardous waste management, management of contaminated land Strategies and plans Environmental initiatives by industry and NGOs
	Implementation Institutional arrangements Role of different levels of government Waste management facilities for: recovering and recycling, incineration, compostion, separation Landfills Waste exports and imports Enforcement
Societal responses	***Instruments*** Ambient and clean-up standards, technology standards Operating permits Landfill standards Transportation requirements Requirements for separation of municipal waste Other regulatory instruments Economic instruments: waste fees, taxes, subsidies Voluntary agreements Enforcement compliance Compensation and liability rules Integrated pollution control
	Economic aspects Expenditure for waste collection, treatment and disposal Financing mechanisms for waste management
	Information Waste site inventory - Classification of landfills - Risk analysis Inventory of contaminated land - Planning and project appraisal - Public participation - Dissemination of information - Environmental science

Table I-d. **Natural Resources and Nature Conservation, Soil**

Framework	**Item**
Pressure	Pressures on natural resources and soil: - Use of water resources - Use of forest resources - Use of soil resources - Use of fish and marine resources - Pressure on wildlife and habitat - Land use changes - Introduction of new genetic material and species - Air, water, waste pollution
State	State of natural resources: - Water, forest, fish resources - Soil (extent of erosion, salinisation) - Ecosystems and habitats - Biodiversity, species and genetic diversity
Societal responses	***Objectives*** Objectives, goals, targets of natural resource management policies Sustainable management of resources Multiple use of sensitive areas Landscape management Environmental initiatives by industry and NGOs
	Implementation Institutional arrangements Planning and project appraisal Legislation Enforcement
	Instruments Regulatory instruments Protection of areas and habitats Protection of species Rural development Economic instruments Voluntary agreements Resource pricing Taxation Subsidies Tradeable permits
Societal responses	***Economic aspects*** Expenditure for nature protection Financing of nature protection expenditure
	Information Inventory of species, ecosystems, biodiversity Dissemination of information Environmental science Environmental education

Table II-a. **Integration of Environmental and Economic Policies**

Framework	**Item**
Trends of environmental significance	Consumption and production patterns Macroeconomic trends Structure of economy: status and trends Industrial production Government consumption Population growth
Pressures and impact on the environment	Environmental pressures from economic activity Spatial density of pressure Decoupling of environmental pressure and economic growth Environmental pressures and international trade
Societal responses and economic policies	***Objectives*** Sustainable development, production and consumption patterns Consistency of environmental and other policy objectives Integration of environmental concerns into economic policies Cost-effectiveness of environmental policies
	Implementation Strategies and plans Institutional arrangements Relationship between different levels of government Role of stakeholders: industry, trade unions, NGOs Environmental impact assessments Legislation
	Instruments Regulatory instruments Physical planning Economic instruments: taxes, charges; subsidies; other economic instruments Legal and administrative mechanisms to promote co-operation, round tables Voluntary agreements, self-regulation by industry Removal of integration barriers R&D programmes
	Other economic aspects Environmental expenditure Financing mechanisms for environmental expenditure Costs and benefits of environmental policies Damage evaluation Environmental technology, eco-industry International competitiveness
Societal responses and economic policies	***Information*** Indicators, statistics Environmental education - Environmental reporting Public inquiries and hearings Public awareness and participation Target groups Cost-benefit analyses

Table II-b. **Sectoral Integration: Energy**

Framework	**Item**
Sectoral trends of environmental significance	Size of the energy sector Energy consumption and production patterns Structure of energy supply Fuel mix Energy consumption by economic sectors Energy substitution End-use and transformation efficiency
Pressures and impact on the environment	Environmental pressures from energy activities Oil, gas, coal, hydro, nuclear and other energy production Pipelines, shipping, power lines Emissions to air Emissions to water and soil Waste from energy production, transformation
Societal responses and sectoral policies	***Objectives*** Energy efficiency Consistency of environmental and energy policy objectives Integration of environmental and energy policies Environmental initiatives by industry and NGOs
	Implementation Strategies and plans Institutional arrangements Relationship between different levels of government Environmental impact assessments Legislation Enforcement
	Instruments Regulatory instruments Economic instruments Taxes and energy pricing Subsidies Promotion of energy efficiency, alternative energies Promotion of R&D Tradeable permits Voluntary agreements and self-regulation by industry Removal of integration barriers
	Information Indicators, statistics Monitoring of stationary and mobile sources Dissemination of information

Table II-c. **Sectoral Integration: Transport**

Framework	**Item**
Sectoral trends of environmental significance	Size of the transport sector Transport infrastructure trends Passenger and freight traffic Land-based transport, shipping Modal split Energy consumption by transport sector
Pressures and impact on the environment	Environmental pressures from transport activities Atmospheric emissions Noise Impact on urban environment Transport of hazardous substances Land use Wastes (disposed cars)
Societal responses and sectoral policies	***Objectives*** Mobility Transport policy objectives Consistency of environmental and transport policy objectives Integration of environmental and transport policies Environmental initiatives by industry and NGOs
	Implementation Plans and strategies Institutional arrangements (e.g. different levels of government) Environmental impact assessments Legislation Enforcement
Societal responses and sectoral policies	***Instruments*** Measures concerning: vehicles (technological improvements) fuels (fuel saving and substitution, fuel quality) infrastructure Regulatory instruments Economic instruments: Taxes Fuel pricing Road pricing Subsidies Voluntary agreements Spatial planning and demand management Removal of integration barriers
	Information Monitoring Indicators Statistics Dissemination of information

Table III. **International Co-operation**

Framework	**Item**
Pressure	Transfrontier water pollution Transfrontier air pollution Acidification: emissions of SO_x, NO_x Ozone layer depletion: production and emission of ozone-depleting substances Climate change: emission of CO_2 and other greenhouse gases Transfrontier movements of waste, hazardous waste, chemicals International trade Marine pollution: oil spills, chemical spills discharges from nuclear installations and dumping of radioactive waste toxic contamination/coastal pollution Extraction of natural resources
State	Quality of international rivers and river basins Acid depositions and critical loads Tropospheric ozone concentrations Condition of marine resources Radioactivity Condition of areas of international environmental significance (e.g. Arctic) State of biodiversity
Societal responses	***Objectives*** International and regional commitments on: general environmental co-operation nature protection water protection fish resources forest resources air pollution international movements of hazardous waste, chemicals and processes mutual assistance in case of emergency Environmental initiatives by industry and NGOs
Societal responses	***Implementation*** Ratification and implementation of international agreements on environmental protection International mechanisms for funding of environmental protection International harmonisation of rules and regulations Measures to protect forests Measures to protect fish stocks Environmental impact assessments abroad Aid and environment
	Information Reporting on progress with implementation of international commitments Dissemination of information and know-how

ANNEX 2
EXTRACT FROM
ENVIRONMENTAL PERFORMANCE IN OECD COUNTRIES: PROGRESS IN THE 1990s

FOREWORD

This report features i) important progress to date, ii) further progress to be made and iii) selected policy suggestions in three broad areas:

- the effectiveness of environmental policies in the fields of pollution control and nature conservation;
- the integration of environmental concerns into all other policies;
- the effectiveness of co-operation with the international community.

The report mainly focuses on developments during the 1990s, but incorporates trends since the early 1980s. It aims to draw attention to the main messages coming out of work of the Group on Environmental Performance. It is based on the 12 Environmental Performance Reviews carried out so far and the environmental data collected by the Group on the State of the Environment for all Member countries.

The OECD programme of environmental performance reviews derives its mandate from the following events: the endorsement by the OECD Environment Ministers in January 1991; an agreement by the OECD Council at its Ministerial level meeting in June 1991; a communiqué by Heads of State and Governments at the London G-7 economic summit in July 1991.

The principal aim of the OECD's environmental performance reviews is to help Member countries improve their individual and collective performances in environmental management. The primary goals for this programme are:

- to help individual governments assess progress by establishing baseline conditions, trends, policy commitments, institutional arrangements and routine capabilities for carrying out national evaluations;
- to promote environmental improvements and a continuous policy dialogue among Member countries, through a peer review process and by the transfer of information on policies, approaches and experiences of reviewed countries; and
- to stimulate greater accountability from Member countries' governments towards public opinion within developed countries and beyond.

Environmental performance is assessed with respect to a country's effort in reducing the overall pollution burden and managing natural resources within OECD countries, as well as integrating environmental and economic policies and strengthening co-operation within the international community. Environmental performance is assessed with regard to the degree of achievement of domestic objectives and international commitments.

The report is submitted to the OECD Environment Ministerial meeting (Paris, 19-20 February 1996). It assesses progress at the mid-decade in the implementation of the "Strategy for the 1990s", adopted by Environment Ministers at their previous meeting in 1991. This report is released to the public under the authority of the Secretary-General of the OECD.

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EXECUTIVE SUMMARY

Further to a decision of the Environment Policy Committee at its 1991 Ministerial meeting, the OECD launched a new programme of Environmental Performance Reviews in 1992. Since then, the environmental performances of 12 countries have been reviewed under the programme, while environmental information and indicators on the state of the environment have been assembled for all OECD Member countries. Based on these activities, despite the wide diversity of economic, social, political and environmental conditions among Member countries, the following broad conclusions about progress in environmental management in OECD countries in recent years can be drawn.

The environmental policies carried out in the 1980s and the first half of the 1990s have clearly contributed to improving the state of the environment. Moreover, these policies have not in themselves posed significant economic difficulties in Member countries. In particular they have not created significant distortions in international trade or caused detrimental effects on employment.

To meet current and future environmental commitments, however, it will be imperative to step up integration of environmental and economic policies 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. In addition, international co-operation must be greatly strengthened, and environmental policies will need adjustment towards increased emphasis on pollution prevention and on cost-effectiveness, openness, accountability, implementation and enforcement.

1. Progress in the 1990s

Effective environmental policies

In most Member countries, progress accomplished in the 1980s has been consolidated and, in a number of cases, enhanced in the first half of the 1990s. The most pressing water pollution has been tackled, mainly through regulation of discharges from large point sources and construction of waste water treatment facilities. Emissions of acidifying substances into the air, particularly of SO_x, have been reduced. Emissions and concentrations of a few major air pollutants have declined because of strengthened standards and enforcement applied to major stationary sources and passenger cars. Concerning waste management, progress has been made on the issues of hazardous waste and municipal waste, with a number of innovative programmes established for collection and reuse/recycling of waste. In the field of nature conservation most Member countries have made considerable progress in establishing protected habitats and in protecting threatened species.

Problems remain in difficult areas such as eutrophication, NO_x emissions, ground-level ozone and increasing generation of waste. The potential pollution reduction gains from regulating large point sources of air and water pollution are, or will soon be (with some exceptions), practically exhausted or greatly reduced. A change of approach is needed to deal effectively with small-scale sources and with diffuse sources (small businesses, service industries, transportation, agriculture, households/consumers, end of life products) and this has already started in some Member countries. Management of biodiversity, particularly outside protected areas and for all species (not just those that are hunted or threatened), has not proved an easy task in any country.

Early integration of environmental concerns in sectoral policies

A number of countries have adopted national environmental plans at interministerial level. Because of economic pressure, however, progress in implementing them has been limited. Over the last 20 years, manufacturing industry as a whole, and the chemical industry in particular, has shown that integration of environmental and industrial policies can be carried out successfully without endangering competitiveness or employment. Decision makers in a few other economic sectors have begun taking greater account of environmental requirements, but not yet to the extent of modifying the overall thrust of sectoral policies. 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 impact on environmental conditions at present are energy, transport and agriculture.

Strengthened international co-operation

Concerning international co-operation, important progress has been made in ministerial declarations and international agreements. Notable achievements include reductions in the production of ozone-depleting substances, abatement of SO_x emissions and protection of a few endangered species. Transfrontier movements of hazardous waste from Member countries for disposal in non-OECD countries have been banned, and within the OECD such transfers are carried out under close control. Pollution of regional seas, such as the North Sea and the Baltic, has been reduced and emissions of toxic substances in many international rivers and lakes have been severely restricted. International co-operation at the bilateral level in border areas has progressed considerably and regional co-operation has grown under a variety of new agreements. However, substantial efforts are needed to achieve full implementation of the commitments made at international level, in particular in the area of climate change.

2. Adequacy of Policies for Meeting Environmental Challenges

Towards sustainable development: fostering the integration of government policies

Meeting environmental commitments to ensure the well-being of present and future generations will necessitate much stronger integration of sectoral and environmental government policies than has been achieved so far by Member countries, and wider adoption of result-oriented policies, i.e. policies explicitly aimed at achieving specified improvements to the environment. Progress requires broad strategies that fully take into account both economic and environmental dimensions and that incorporate environmental requirements from the outset. To make full use of dynamic forces in the economy and society, Member countries should draw up long term plans to meet the challenges of the next century, clarify environmental goals and set targets for actions to be undertaken in relation to the environment. This approach requires close dialogue between relevant ministries, leading to a more structured integration of government activities. Other stakeholders, industry and the general public must be fully engaged.

Energy, transport and agriculture policies need to be modified to better take account of environmental constraints and to avoid unsustainable patterns of development. Ever-growing use of fossil fuels cannot continue if Member countries are to meet their commitments, and, more important, if health risks and risks associated with climate change are to be mitigated. The likelihood that a number of Member countries will not meet commitments concerning CO_2 emissions by 2000 is a source of concern and requires urgent action. Additional road building and further increases in vehicle use are likely to be very damaging environmentally

in most Member countries. Further intensification of agriculture without appropriate offsetting measures would have negative environmental effects, which must be prevented. Overuse of natural resources, e.g. depletion of green spaces, fish stocks and old growth forests, must also be controlled.

Stronger co-operation among the various levels of government must be pursued. Monitoring of environmental performance of subnational authorities, especially when they have much autonomy in carrying out their environmental policies, would help in adequately maintaining a uniform level playing field, in informing citizens of the state of their environment and in promoting a democratic debate on environment.

Progress towards sustainable development will require significant changes in production and consumption patterns. These can be promoted by increasing consumer awareness and expanding use of approaches such as life cycle analysis of products and extended producer responsibility. Governments can show the way to more sustainable policies by "greening" their own operations. This implies not only assessing the environmental implications of policy decisions, but also reducing the environmental impact of government activities and promoting the use of "green" products by public authorities. The innovative approaches already being taken by a few countries towards "green governance" could serve as a model for all Member countries.

Towards sustainable development: a greater role for market forces

Meeting environmental commitments demands strategies aimed at ensuring sustainable development in the context of market-based economies. This implies that greatest use will be made of the market through removal of distortions caused by externalities and subsidies that affect the environment adversely. To combat environmental degradation and overuse of natural resources, it is essential to provide the right price signals, to promote internalisation of externalities by applying the polluter pays principle and the user pays principle and by introducing economic instruments, and to remove as far as possible subsidies that have negative effects on the economy and on the environment. Fiscal and environmental policies should be seen as mutually supportive. Wider use of economic instruments and other societal instruments, such as education and consumer information, will help in mobilising social and economic sectors to reach new, ambitious environmental goals cost-effectively while reducing demand for goods and services that cause environmental degradation. Such instruments can also help in financing environmental protection activities. The private sector should, in this context, be given sufficient lead-time to adapt itself to new environmental requirements, to seek cost-effective approaches and to develop innovations in the technology it uses and the products and services it delivers.

Meeting international commitments

Much more progress is also required to solve transfrontier, regional and global problems. Globalisation of the economy, of trade and of environmental issues means that linkages among the activities and interests of nations are tightening and that avoiding conflicts and optimising benefits will require more solidarity on "spaceship earth". As for the major challenges, the need to mitigate climate change has not yet been adequately faced and the provision of environmental aid and technical assistance to less developed countries is falling short of what is required. Member countries, with their large economic resources, could do much more than they are doing at present to solve global environmental problems (for which they bear a large degree of responsibility), e.g. by meeting their commitments on further financial assistance to developing countries; they could also strengthen their support to central and eastern European countries in

actions to protect the environment. International co-operation can also be strengthened in a number of areas without major new expenditures: in particular, environmental capacity building initiatives in developing countries (e.g. cleaner-technology centres) could be further promoted, international environmental law could be further developed and many issues of responsibility and liability could be addressed more open-mindedly. Similarly, progress could be made by reconciling trade and environment policies.

Member countries could also strengthen their co-operation on regional issues to define joint strategies and common policies that are at least as effective as those used for domestic issues. Close integration and interdependence of the economies of regional groups of Member countries (e.g. European Union, North American Free Trade Agreement) is likely to lead to novel approaches in environmental co-operation, reflecting closer economic integration.

Improving cost-effectiveness, openness and accountability of environmental policies

Over the last five years, there has been an intensifying search within Member countries for more cost-effective approaches to coping with environmental issues. Several countries have moved or are moving from process-oriented environmental policies to result-oriented policies, and many Member countries have introduced a mix of instruments (regulatory, economic and societal instruments) to deal with difficult environmental issues. Further emphasis is also needed on preventive approaches, integrated pollution control and place-based and ecosystem management while making full use of voluntary agreements.

Difficult decisions that will have to be taken in coming years will need to be supported by well thought out, broad-based consultative and awareness-raising activities. To be successful, environmental strategies will require openness in decision making as well as a high quality assessment process. Openness will require full access for all players to environmental information, more meaningful consultation with and participation by the public, and a continuing dialogue with stakeholders (e.g. industry, trade unions, non-governmental organisations, local communities).

The availability of meaningful environmental data and indicators and well-synthesised information should lead to a better democratic debate, and to better accountability of public authorities and the various actors. Improved assessment and policy planning will require better databases, broader use of environmental impact assessment to deal with programmes and policies, and evaluation of cost-effectiveness and cost-benefit comparison. Regarding the latter, work on the valuation of benefits will need to be increased to ensure that a proper balance is maintained, given the recent emphasis in some Member countries on quantifying the cost of environmental protection.

Tracking progress through development of environmental data and indicators has already proved its value. It will be even more necessary in the future to gauge the results obtained by implementing environmental policies and to identify shortcomings that may arise at all government levels. Member countries that concur with the value of assessing their environmental performance could promote the use of the same method at subnational level.

INTRODUCTION

1. The OECD Programme of Environmental Performance Reviews

The OECD programme of Environmental Performance Reviews was initiated by OECD Environment Ministers in 1991. The importance of the programme was subsequently reinforced by the OECD Council and the Heads of States and Governments of the G-7 (July 1991).

The principal aim of the reviews is to help Member countries improve their individual and collective performance in environmental management. Environmental performance is interpreted to encompass domestic and international environmental objectives and commitments, covering the hierarchy of intentions, actions and results.

In carrying out "peer" reviews, the Group on Environmental Performance has adopted the pressure-state-response model of analysis, and evaluates the state of the environment as a result of pressures from human activities and of responses by governments (policies), enterprises and households. Three broad areas are examined for each country:

- the effectiveness of environmental policies in the fields of pollution control and nature conservation;
- the integration of environmental considerations into all other policies;
- the effectiveness of co-operation with the international community.

The synthesis presented in this report draws on:

- the 12 country reviews already published: Germany, Iceland, Norway, Portugal, Japan, Italy, United Kingdom, Netherlands, Poland*, Austria, Canada and United States;
- environmental data for all 25 OECD Member countries (which the OECD continually acquires and periodically publishes);
- selected environmental indicators developed by the OECD.

2. Facing Domestic and International Commitments

The environmental policies adopted by Member countries over the last 25 years have shown a steady evolution. Initially, policies were focused on cleaning up existing pollution and trying to reduce pollution from point sources at the point of discharge (i.e. end-of-pipe measures). Later, management strategies moved in the direction of modifying production processes so as to minimise the amount of pollution being generated in the first place (i.e. cleaner production). While much still remains to be done to eliminate long-standing environmental problems in OECD countries, and to "stay the course" with many earlier management strategies, the sustainable development perspective adopted at the 1992 Rio Conference stimulated a further move towards policies focusing on pollution prevention, integration of environmental concerns in economic and sectoral decisions, and international co-operation.

* Carried out in co-operation with the UN-ECE.

Domestic and international environmental issues have come to the forefront of the political agenda, receiving high priority in the attention of the public, governments and enterprises. This has led to an unprecedented range of domestic and international commitments, which imply:

- increased environmental expenditure, and, as an indispensable corollary, increased and innovative efforts towards cost-effectiveness in achieving commitments;
- increased efforts to integrate environmental policies and other government policies, and to integrate initiatives from all levels of government with those of enterprises and citizens;
- increased and more effective international co-operation.

Environment Ministers and their administrations thus have seen their political, economic and administrative role significantly increased in importance within government structures in the first half of the 1990s. This development was paralleled by a greening of international institutions and of many public authorities. Now, however, after this active phase of environmental commitments, environmental administrations have to continue implementing policies under domestic and international conditions often characterised by: short term time horizons, underpricing of natural resources, concerns over budgets and cumulated public deficits, and structural economic changes, as well as increased globalisation and international economic interdependencies.

3. Recognising a Wide Diversity of Conditions

Although OECD countries are bound together by a shared commitment to democratic ideals, pluralistic institutions and market-oriented economies, they also exhibit a wide diversity of physical, economic, social, cultural and environmental conditions that need to be taken into account when evaluating countries' environmental performance. For example, among OECD countries there are marked differences in:

- economic conditions: some economies are among the most "developed", while others are in a process of convergence within regional economic entities (e.g. North American Free Trade Agreement, European Union);
- the density of the pressures from economic activities and population;
- the endowment in natural resources (water, land, energy, forest, agricultural and fish resources);
- the environmental institutions: there are various degrees of federalism and decentralisation concerning environmental policy definition and implementation;
- the environmental administrative culture: mature versus young, co-operative versus confrontational, result-oriented versus process-driven.

Nevertheless, it is possible to draw certain important lessons from the collective experience of OECD countries in addressing environmental problems over the course of two-and-a-half decades — and particularly during the first half of the 1990s, based on the OECD performance reviews.

REDUCING THE POLLUTION BURDEN AND CONSERVING NATURE

1. Managing Water Resources

Progress to date

Significant progress has clearly been made in further reducing point discharges of pollutants into surface waters in the first half of the 1990s. In an increasing number of OECD Member countries, the problems of oxygen-demanding substances and bacterial water quality are now largely under control: the upgrading of municipal waste water treatment plants to secondary level is in its final stages and the planning and implementation of programmes for tertiary treatment (mainly the removal of nutrients) are increasingly carried out where required. Other countries are still completing sewerage networks or the installation of the first generation of municipal waste water treatment plants (Annex 1). Larger industrial enterprises in many Member countries are now equipped with modern technology to remove most of the oxygen-demanding substances, heavy metals and persistent toxic contaminants from their effluent; progress has also been made in some countries in controlling smaller industrial discharges. Still, the continuing reliance on end-of-pipe technology means that the underlying causes of many discharges remain.

While a number of Member countries updated their water legislation in the late 1980s and early 1990s, an increasing emphasis has been placed in recent years on improving the implementation of environmental laws and regulations already in place. Several countries have strengthened enforcement practices and enhanced transparency through greater public access to information about municipal and industrial effluent discharges and ambient water quality. Water permits are increasingly being incorporated into integrated environmental permits, thereby providing a better mechanism for resolving cross-media effects and promoting pollution prevention.

The first half of the 1990s has also seen a further evolution towards a more integrated approach to water management. This trend includes water quantity and quality management at the scale of the watershed or river basin, greater consideration of the interaction between urban and rural activities and water quality, and greater recognition of the need for rivers and lakes and their beds and banks to support aquatic life as well as to meet human health and recreation criteria.

Further progress to be made

Despite the continuing reductions of point discharges, much remains to be done in most Member countries before statutory or other water quality objectives are met. Diffuse pollution is the major challenge in water management today. The agricultural and transport sectors are main sources of diffuse pollution by nutrients (phosphates, ammonia, nitrates), heavy metals (cadmium, copper, zinc) and micropollutants (pesticides, polycyclic aromatic hydrocarbons). Diffuse pollution also reaches waterways through direct or indirect atmospheric deposition.

Vulnerable groundwater resources are under threat from both diffuse and point sources, and this threat is growing. The main problem is increasing contamination of vital aquifers used for drinking water by nitrates from fertiliser use. Most Member countries thus need to find more effective ways to protect groundwater. Also, the quality of coastal waters still suffers from outflows of pollutants from rivers, estuaries and coastal waste water outfalls.

Across the OECD, 64 per cent of the population is served by municipal waste water treatment plants. There is potential to raise this figure, but the small-scale treatment plants that are increasingly being installed in dispersed settlements are a viable alternative to connecting outlying communities to large municipal installations. All Member countries are faced with considerable expenditure for water supply and waste water infrastructure: replacement of lead water supply pipes; improvement of water purification to treat bacteria and viruses or to remove nitrates; renewal of sewerage networks often almost a century old; upgrading of first generation waste water treatment stations; and provision for tertiary treatment to remove phosphorus and nitrogen compounds. Innovative technical solutions should be sought to minimise this expected expenditure, while the use of appropriate charging systems should be expanded to reduce demand, as well as for financing purposes. The problem of the treatment and safe disposal of increasing quantities of sewage sludge has been solved in only a few countries. In industry, there is still a large potential to reduce discharges through greater use of cleaner production processes.

Most countries are still facing at least seasonal or local water quantity problems, such as seasonal droughts, shrinking groundwater reserves or lowering of groundwater tables (Annex 1). Furthermore, the supply of safe drinking water, free of bacteria, viruses, lead or nitrates, remains a challenge in many Member countries. Flooding still causes avoidable damage where land use and building controls are not implemented or sufficiently enforced.

Water: major policy directions and challenges

— implement appropriate charges, in line with the user and polluter pays principles, in order to:
  - finance the necessary investment in water supply and waste water treatment infrastructure;
  - reduce sources of point and diffuse water pollution;
  - promote water conservation;

— design and introduce lower-cost innovative waste water treatment techniques;

— introduce cleaner production methods, e.g. through integrated permitting that stresses pollution prevention, and greater use of voluntary agreements with specific industry branches to meet specified reductions in pollutant discharges;

— adopt and implement whole-basin approaches to water quantity and quality management, ensuring that these are integrated with land use policies.

2. Managing Air

Progress to date

Emissions of SO_x, lead and carbon monoxide continued to decline in the early 1990s, and a decoupling of economic growth from emissions of conventional air pollutants has been observed (albeit not equally strongly in all countries), especially for SO_2. Ambient air quality, in terms of SO_2, particulate matter, CO and volatile organic compounds, has slowly continued to improve in many Member countries in the first half of the 1990s, though overall the change has not been as substantial as in the previous decade; concentrations of lead have declined considerably as a result of the increasing market share of unleaded gasoline (Annex 1).

These achievements result from pollution control measures, structural changes in economies (e.g. a shift from industry to services), and energy conservation measures often introduced in the 1980s. Improvement of regulatory systems in several Member countries, including more stringent emission standards (e.g. for large combustion installations) and improved monitoring and enforcement procedures, contributed to these achievements.

Hazardous air pollution has become a greater concern of Member countries in the first half of the 1990s. Some countries have improved monitoring for hazardous pollutants and introduced programmes for a number of substances. An increasing number of countries have introduced and publicised inventories of toxic releases at industrial sites so as to evaluate and monitor emissions and to encourage industry to take action. Some countries have recognised possibilities for preventing releases of hazardous air pollutants through changes in products and industrial processes, e.g. "cleaner" motor vehicles and solvent-free products.

Energy policy in Member countries has paid more attention to environmental issues, prompted by concerns about global warming and the need to respond to commitments (Section 4.3). A variety of measures have been introduced, including voluntary agreements with utilities, more stringent heating insulation standards and use of combined heat and power plants and district heating systems. Standards on vehicle emissions have been strengthened in many countries, contributing to a decrease in VOC and NO_x emissions from individual vehicles.

Further progress to be made

Emissions of greenhouse gases are calling for increased attention, especially because many uncertainties about their negative effects on climate change have been reduced lately. CO_2 emissions have continued to increase in most countries through the first half of the 1990s, in spite of gains in energy efficiency. This growth in emissions is due to increases in the use of fossil fuels in fixed and mobile power sources and by households, and the limited use of non-fossil sources of energy such as biomass, hydropower, nuclear power and wind. Limiting OECD CO_2 emissions would lead to other, indirect benefits in addition to those associated directly with climate change. Emissions of methane, another important greenhouse gas, especially in countries with a large agricultural sector, continue to be significant (Section 4.3).

Since the late 1980s, energy intensity has not improved in most countries, principally because of decreasing prices for energy resources (oil, gas, etc.). The use of economic instruments in the energy sector is still fairly limited. Careful attention should be given to direct subsidies and cross-subsidisation in the energy sector, and to pricing of electricity. Electricity generation by nuclear plants has helped reduce CO_2 emissions from energy production; problems associated with waste disposal and power plant safety have continued to prevent this option from being fully exploited, however.

Vehicle traffic has been growing and is expected to continue to grow; it has often offset the benefits of air pollution reductions through the use of new, cleaner vehicles, which are slowly replacing older ones. There are successful cases of restricting vehicle use in city centres, but the restriction of vehicle traffic in wider areas remains a challenge in all countries. Progress needs to be made towards the inclusion of all costs of transport, including environmental damage costs, in the prices of transport services.

Agriculture is also an important contributor to air pollution and greenhouse gases in several countries, especially concerning emissions of ammonia and methane; environmentally sensitive management practices need to be expanded.

NO_x emissions have not been reduced in most countries, mainly because of the growth of traffic. VOC emissions showed decreases in the 1990s in many countries, but not enough to attain related targets. Many countries need to strengthen measures to reduce emissions so as to meet domestic targets and international commitments, especially for NO_x and VOCs (Annex 1). More use of economic instruments and other approaches, such as promotion of cleaner production and voluntary agreements, are required to attain these targets.

Local air pollution problems remain, such as those in industrial areas and urban areas where air quality standards continue to be breached. In the short term, acute ground level ozone-related pollution episodes in urban areas will have to be addressed more effectively; long term solutions will depend on the success of policies to integrate environmental concerns with those related to transport (especially road freight transport), energy, land use planning, etc. More attention should be paid to human health risks from air pollution, in particular from toxic substances. Emissions of fine particulates, especially from diesel engines, have become of greater concern due to the effect they are suspected to have on human health (Annex 1). Comprehensive policies to monitor, assess and control hazardous air pollution will have to be developed in coming years.

Noise is often considered by urban populations to be a major nuisance. It has severe impact on quality of life and health. While there are many sources, transport may be the one that is expanding most (in particular, two-wheeled and heavy-duty motor vehicles, and airplanes in the vicinity of airports). Among the actions to be taken is the adoption of more stringent standards both for ambient levels and for technologies or products such as motor vehicles and industrial equipment. Land use approaches by local government to mitigate the impact of noise should be an essential part of policy.

The effects of atmospheric deposition on ecosystems in the form of acidification and eutrophication show great variation among regions, as they depend both on the degree of loading and the sensitivity of the affected area, but both phenomena still pose serious problems in a number of Member countries and remain a focus for concern in the discussion on long range, transboundary air pollution.

Air: major policy directions and challenges

— improve energy efficiency and develop the use of cleaner fuels, through a mix of instruments including extended recourse to economic instruments;
— continue efforts in support of implementation and enforcement of regulations, while improving the efficiency of the regulatory framework and devoting more attention to prevention;
— develop cost-effective strategies to reduce emissions of conventional pollutants by using various policy instruments;
— address human health issues by: i) strengthening measures on local air pollution problems in urban areas, and ii) developing cost-effective programmes to reduce hazardous air pollution;
— strengthen measures on vehicle emissions: i) more stringent emission standards, especially for heavy-duty diesel vehicles, and better inspection and maintenance programmes; and ii) development of policies to contain private vehicle traffic volumes and to promote public transport in urban areas;
— give greater attention to regulations and voluntary programmes aimed at stabilising emissions of greenhouse gases, and promote full application of measures with no net costs (win/win strategies).

3. Managing Waste and Contaminated Sites

Progress to date

Member countries gave increased attention to waste problems in the late 1980s, shifting strategies from simple collection and disposal of waste to a "waste hierarchy" approach, with emphasis on preventing waste generation and on recycling (including reuse and energy recovery) of waste generated.

Recycling has improved markedly in the 1990s. Actions introduced include separate collection for household waste, use of economic incentives and voluntary actions. Recycling rates for paper/cardboard and glass have increased in most countries (Annex 1). However, only a few countries have succeeded in reducing the quantity of solid waste to be disposed of by increasing recycling. Some countries have introduced the concept of extended producer responsibility concerning collection and/or recycling of waste, such as used packaging, batteries and tyres.

Landfill is still the major disposal option, but incineration is used extensively in some countries. Standards for landfilling and incineration have been strengthened in a number of countries. Composting of biodegradable waste has become a major option (e.g. in Austria) in order to reduce the volume of waste for disposal.

Control of hazardous waste management has been improved, though the level of progress differs widely among countries. Measures taken include: wider and clearer definitions of hazardous waste, reporting requirements for hazardous waste generation, tracking systems for hazardous waste transfers, permits for hazardous waste transport and disposal, and construction of incinerators for the disposal of hazardous waste. Hazardous waste contained in municipal waste has become a concern, with some countries introducing separate management for this category. Major steps have been taken for the proper control of transboundary movements of hazardous waste (Section 4.3).

Further progress to be made

Waste problems remain major challenges: trends in municipal waste generation are not on the decrease and have even increased in most countries for which data are available (Annex 1). In coming years, waste management will need to be further developed: the waste hierarchy principle should increasingly be translated into substantive programmes for waste minimisation with clear and measurable targets. Stronger efforts to reduce waste generation will be needed. Prices of consumer goods and of waste management services should internalise all costs of waste management and related environmental effects.

Concerning pollution control related to waste disposal, many regulations are beginning to be implemented and much effort is needed to ensure compliance. In most countries, treatment and disposal facilities that meet modern pollution control criteria do not have sufficient capacity, and public resistance to new waste facilities has been growing. Hazardous substances used in various products generate risks of pollution.

Attention should be paid to cost-effectiveness in designing measures, because a strengthened waste management policy puts an increasing cost burden on production and consumption activities. Greater cost-effectiveness can be achieved by better connecting waste minimisation policy and life cycle management policy for products.

Contaminated sites have also become a major issue in Member countries. Even for the most advanced countries which have started the clean-up phase, the completion of clean-up programmes will take decades and significant resources. In coming years, most Member countries will need to establish clear liability frameworks and financing mechanisms. Attention should be paid to developing cost-effective strategies to reduce risks to human health and the environment, e.g. when setting clean-up criteria and selecting sites to be dealt with and clean-up technologies. Complete clean-up of contaminated sites would require considerable resources over extended periods; it will be necessary to establish priorities according to health and environmental risks, comparing contaminated site clean-up benefits with those of other pollution control programmes.

Waste: major policy directions and challenges

- fully implement and enforce regulations on hazardous waste management, including controls on imports and exports;
- strengthen measures for waste minimisation, especially for prevention of waste generation through co-ordination with relevant programmes concerning cleaner technology, life cycle management of products and extended producer responsibility;
- increase the use of economic instruments to promote prevention and recycling, including waste disposal fees, product charges and deposit-refund systems; and of other instruments, such as voluntary agreements, information and education;
- ensure the availability of necessary waste treatment and disposal capacity for hazardous and other waste, with better planning and full public involvement.

4. Conserving Nature

Progress to date

The extent and number of protected areas continued to grow in many Member countries in the first half of the 1990s, and greater emphasis has been given to including representative areas of all major ecosystems. For the whole of the OECD, the area of land protected now amounts to about 10 per cent of the total (Annex 1). A few threatened or endangered species have begun to recover and/or extended their habitat as a result of reintroduction, recovery programmes or reduced pollution pressure.

In some cases, comprehensive national nature conservation legislation and policies have been adopted. Some important progress has been made in defining or promoting the objectives of maintaining healthy life-support systems and making agriculture, forestry and fishing practices more sustainable. The implementation of international agreements on nature protection has continued to progress, with emphasis on endangered species and protection of their habitats. Member countries have now begun to address biodiversity issues in a more comprehensive way.

Environmental and nature conservation associations have played an active role, stepping up their activities in acquiring and managing sensitive areas and protecting species. Some associations have initiated innovative agreements directly with stakeholders (e.g. forest companies) without the intervention of governments.

Further progress to be made

While the total protected area has increased, marine areas in particular need to be represented better. Also, the degree of protection of protected land areas is often low; thus, growing pressures from visitors or economic activities (e.g. agriculture) within protected area boundaries make it difficult to fully safeguard the natural resources involved. Financial and staff resources are often not adequate to enable proactive management of protected areas.

Notwithstanding the success stories, the number of species listed as threatened or endangered has continued to grow in most countries. Recovery programmes have tended to focus on a limited number of species rather than be guided by a coherent biodiversity strategy. Plant species have especially suffered from this approach. Habitat protection clearly needs to be strengthened in all Member countries.

Pollution pressures, such as acidification, eutrophication and contamination with heavy metals and other persistent chemicals, continue to affect nature inside and outside protected areas; fragmentation of natural areas by roads and other development is a major obstacle to the recovery of some wild species and is putting pressure on others not currently endangered.

In most OECD Member countries responsibility for nature conservation is still distributed among different administrations at national or regional levels, and often separated from the management of pollution control, making it difficult to set national priorities and fund protection measures accordingly, and to integrate nature policies with other policies (e.g. for water management, agriculture, forestry). In addition, landscape policies have proved difficult to implement because of a lack of integration with land use policies.

The state of fish stocks has re-emerged in the last few years as a major concern for several Member countries and for the international community at large. This has been the case, for example, with respect to certain groundfish, and to cod or haddock. Despite some progress, the reform of fishery management regimes through total allowable catch and quota systems has not yet succeeded in achieving an equilibrium that is sustainable for both fish and the fishing industry. Overly large fishing quotas and inappropriate fishing practices are other troubling aspects of the situation.

Nature: major policy directions and challenges

- implement national nature conservation and biodiversity strategies to better co-ordinate the actions of responsible authorities at all levels;
- strengthen the integration between nature conservation, pollution control and sectoral policies (e.g. agriculture, forestry, fisheries, tourism);
- set aside a significant share of the national territory as protected, including ecological corridors and all major ecosystem types, terrestrial as well as marine;
- strengthen nature conservation efforts outside protected areas and implement landscape protection policies;
- establish and implement effective management regimes for coastal and marine fisheries;
- improve funding schemes for nature protection.

5. Increasing the Cost-effectiveness of Environmental Policies

Getting more economic thinking into environmental policies is increasingly seen as necessary to increase the cost-effectiveness of environmental policies and to carry out more demanding environmental policies without necessarily any growth in financial resources. A corollary issue, one that has been at the heart of the OECD Environmental Performance Review programme and is now commanding the attention of OECD countries' environmental policy makers, is: are governments reaping maximum benefits from the substantial resources going to environmental management?

Environmental expenditure

The total of "pollution abatement and control expenditure" by public and private sectors in most Member countries (where such data are available) has grown since the 1980s, in line with the implementation of stronger pollution prevention policies. Public expenditure on water has been very significant and expenditure on waste is growing rapidly. By and large, pollution abatement and control expenditure in the 1990s generally amounts to 1 to 2 per cent of GDP, and is likely to reach about 2.5 per cent of GDP in a few countries within ten years. "Environmental expenditure" is larger than pollution abatement and control expenditure because it may also include nature conservation, landscape protection, provision or protection of natural resources (water, forestry), urban amenities, etc. In a number of Member countries, there remains a lack of clear information on how much is spent on environmental protection, by whom and for what purpose (Annex 1).

There is no evidence that the growth of environmental expenditure in Member countries will have created either serious macroeconomic problems or significant distortion in competition or international trade through the remainder of the decade.

At the same time, eco-industries have grown and environment-related jobs have become a significant element in employment policies. The world market for environment-related industry in 1990 was estimated by the OECD to be of the order of $200 billion; this sector should grow faster than GDP. Investment expenditure for pollution abatement and control is estimated at 2 to 4 per cent of total investment of the manufacturing sector in OECD countries. In 1990, employment in the environmental equipment and service industry in Member countries exceeded 1.7 million people and total employment in environment-related activities exceeded 6 million people. Such figures are likely to grow because much remains to be done in terms of further environmental investment (e.g. for water infrastructure and waste disposal infrastructure) and further environmental improvements (e.g. at contaminated sites). The overall "macro" effect of environmental policies on employment has also been studied by the OECD. This examination has revealed that, contrary to some assertions, these policies have not been "job destroyers", nor have they had a major net positive effect on job creation in the OECD overall.

At enterprise level, recent environmental expenditure has been smaller than was forecast in the late 1980s. In most cases, it represents at most a few per cent of turnover and generally less than 10 per cent of investment. Greater expenditure was made in the past because of the need to adapt polluting equipment to new environmental requirements. Very few firms have had to close for environmental reasons. Firms now face new challenges, however, and most are meeting them by adopting cleaner technology and modifying their processes, products and services. Studies consistently indicate that, when firms have time to adapt, they very often find approaches that are more economical than those initially envisaged. Thus, it is essential to provide enterprises with clear indications of future environmental requirements and to give ample notice of changes in environmental standards.

Environmental effectiveness of regulations

Since the 1970s, regulatory measures have been used extensively, and effectively, to achieve a basic level of environmental quality. This level was reached progressively, mainly by abating pollution from point sources and by adopting appropriate prevention and control mechanisms concerning chemicals and hazardous products. During the first half of the 1990s, significant improvements have been achieved in enforcement and compliance. However, there is great variation among Member countries in the overall environmental effectiveness of environmental policies. Further, with the era of budget constraints across OECD countries in the 1990s has come recognition that regulatory approaches, while effective, have not always delivered results at least cost (i.e. have not always been efficient).

Much often remains to be done in streamlining environmental legislation, in promoting pollution prevention and in integrating pollution control procedures across different environmental media (e.g. through "one-stop shop" arrangements to simplify permitting procedures concerning environmental obligations of industrial plants). Similarly, there are opportunities for improved environmental management at firm level (e.g. improved operation of waste water treatment plants, improved environmental management within small and medium-sized industrial plants, more cost-effective clean-up of contaminated sites).

Towards more cost-effective mixes of regulations and other instruments

There is a greater recognition that if future environmental challenges are to be met cost-effectively, regulatory command and control approaches will need to emphasise pollution prevention, to be made more flexible and to be used in conjunction with other policy instruments to a greater extent than at present. This awareness stems from: i) the need to respond to, and to take advantage of, rapid technological change; ii) the potential savings in pollution abatement costs arising from a shift towards cleaner technologies; iii) the growth of expenditure on environmental protection at national level and at firm level; iv) the need to reduce current budget deficits and public debt; and v) concern about the competitiveness of enterprises operating in the international market. The following changes are emerging.

First, countries are moving beyond uniform country-wide approaches, whether based on emission standards or best available technology, because these approaches disregard differing pollution abatement costs among enterprises and differing loading levels, as well as differing assimilative capacities of the environment. To a greater or lesser degree, countries are enhancing emission controls with ambient quality standards, complementing uniform requirements on individual plants with overall targets for entire industrial sectors, and refining country-wide regulations with rules and objectives for specific places, ecosystems or river basins.

Second, regulatory instruments, which will undoubtedly need to remain at the core of environmental policies, are being supplemented with a range of economic instruments and a range of societal instruments to solve environmental issues in a more cost-effective way (Sections 3.2 and 3.3 on economic instruments and voluntary agreements, environmental auditing, public consultation and participation, environmental information and environmental education and training).

Third, partnerships with diverse stakeholders (e.g. industrial firms, environmental NGOs, local governments and communities), together with goal setting and performance-oriented accountability, help delegate decisions on the more cost-effective responses, with innovative strategies and further progress often resulting. In a growing number of countries, environmental policies are now designed to achieve both qualitative and quantitative goals and targets. Goal-oriented policies have promoted, in many cases, greater accountability and more result-oriented actions.

These new approaches need to be supported by economic calculations, evaluating the cost of environmental protection measures and assessing their benefits in terms of reduced environmental risks and damage. To achieve environmental improvement at least cost, these approaches demand substantial involvement from public authorities, as well as sophisticated legal and regulatory instruments.

The current move towards better integration of environmental concerns in economic and sectoral decision making should bring further gains in environmental effectiveness and economic efficiency in the second half of the 1990s and contribute to the pursuit of sustainable development in various economic sectors over the longer term (Section 3).

Cost-effectiveness: major policy directions and challenges

- expand the use of preventive policies and integrated pollution control responses;
- implement environmental policies, with special attention to enforcement and compliance, streamlining of legislation and permitting procedures, and investments needed for environmental infrastructure;
- supplement the command and control approach with wider and innovative approaches (economic instruments, voluntary agreements, other instruments);
- estimate accurately current environmental expenditures and estimate future ones;
- keep under review the economic consequences of environmental policies, including their impact on competitiveness, employment and trade.

INTEGRATING ENVIRONMENTAL CONCERNS IN ECONOMIC AND SECTORAL DECISIONS

In the context of the OECD programme of country Environmental Performance Reviews, as well as in other analyses, the Organisation has systematically studied the integration of environmental concerns in economic policies in general, as well as in several different industries and economic sectors (including agriculture, forestry, fisheries, the chemical industry, energy, transport and tourism). The overall conclusion is that progress towards policy integration has been observed, but that definitive judgement must await further studies. This area is very complex and involves many factors, such as levels of centralisation and development and the degree of environmental pressure. It is clear that integration is difficult to bring about because there is a long-standing lack of institutional co-ordination, because some administrative departments are not yet used to co-operating, and because environmental administrations are often understaffed and often do not have responsibility for all the regulations and procedures required to pursue economic and environmental policy integration successfully.

Nevertheless, in all reviewed countries, it has been quite clear that not only can economic and environmental concerns be concurrently pursued without substantial negative effects being incurred in either area, but both economic growth and environmental improvements have been achieved at the same time. Ministries of the environment and other ministries have found that in many areas they can undertake actions with mutual benefit, i.e. actions whose results are good for the environment and good for the department involved ("win-win" situations). It is also clear that such co-operation is imperative if progress in both areas (economic growth and environmental protection) is to be sustained.

1. Moving Towards Sustainable Development

Progress to date

Many Member countries have achieved a decoupling of economic growth from the flow of several major conventional air and water pollutants over the past 15 years, often as the result of a combination of changes in economic patterns, changes in energy intensity and mix, technological innovation and environmental policies (Annex 1). However, economic forces and structural changes in major economic sectors — transport being a leading example — are tightly linked to environmental conditions and trends and can thus enhance or counteract the benefits of environmental policies and technological progress. The integration of environmental concerns into sectoral decision making is therefore a key to improving environmental performance and moving towards sustainable development, as well as to cost-effectiveness in responses to environmental challenges. It cannot be limited to the development or improvement of a few technologies but will require a more holistic approach including greater use of economic and societal instruments and of physical planning.

Economic growth in Member countries has accompanied and promoted changes towards less polluting production patterns, greater emphasis on advanced technology and services, and less emphasis on production in the primary and secondary sectors (a trend known as dematerialisation); it has also stimulated research and development and technical innovation. Use of cleaner technologies and changes in industrial processes have also supported this trend. Increasing investments in iron and steel works, refineries and chemical products industries in developing countries have contributed to a shift in production patterns in Member countries to less polluting activities. In the less industrialised Member countries, the development of heavy industry has increased the pollution load.

In the first half of the 1990s, national strategic plans on environment and sustainable development have been adopted in a number of Member countries. While varying in scope and strength, they have important common characteristics: a medium term perspective, interministerial sharing of environmental responsibilities, partnerships with an array of social actors, the setting of environmental goals and accountability by governments. These strategic environmental plans are indicative, comprehensive, action-oriented and based on some innovative analytical work. Sectoral environmental plans (e.g. transport, energy) have also emerged, as well as goal and target setting in selected environmental areas, often connected to international commitments. The process of elaboration and the influence of national environmental strategic plans have proven useful in stimulating interministerial or multipartner co-operation on environmental issues. Within local communities, development of land use plans and other mechanisms of physical planning have a profound effect on the kind of environment that will be passed on to future generations.

A number of Member countries have recently launched new efforts to improve the environmental sensitivity and impact of government operations. Under the heading of the greening of government operations, they set the pace for a greening of the economy by building greater environmental awareness in government operations and bringing environmental considerations into government policies. Such efforts have usually received cabinet level support and then been adopted by departments for their own procurement and housekeeping practices. Ministries and other public authorities are being required to improve energy savings and reduce waste generation. Government operations and decisions are no longer immune from environmental impact assessment and need to be in line with general rules of environmental protection.

Further progress to be made

The decoupling of economic growth and environmental pressures, where it has been observed, is often the result of policies that were not aimed at environmental protection. These positive side effects cannot be expected to continue unless institutional changes are introduced to reconcile economic growth with environmental improvements.

Measures aimed at altering consumption patterns from more polluting to less polluting patterns are being discussed in many countries. While results achieved so far are limited, there is a growing perception that economic and educational changes are needed in order to avoid further deterioration of environmental quality. For example, reluctance to introduce higher charges on energy use to promote energy efficiency has been overcome only in a few countries.

As a result of increased wealth and changes in household formation, there is a trend in Member countries towards greater use of many natural resources, increased consumption of goods and space, worsening congestion and more urban sprawl. Although car and truck motors are generally consuming less fuel and emitting less pollution per unit, vehicles are more numerous and often more powerful and are used more extensively, thus causing more pollution. Road freight transport has grown at a faster pace than GDP (Annex 1). Although urban amenities are being improved and car-free zones established in some cities, traffic congestion is affecting a growing number of cities. Tourism is growing very rapidly, putting strong pressure on protected natural areas and sensitive areas (e.g. coastal areas, mountainous areas). Municipal waste is generated in ever-increasing quantity (Annex 1).

There is much progress to be made in the analysis of the economic implications (e.g. expenditures needed for pollution abatement and control, economic benefits of environmental action in terms of employment or trade) of strategic environmental decisions, whether within or supplementary to national environmental plans. Little progress has been achieved so far in developing a "green GDP" or at least national accounting systems that take due account of resource depletion. Furthermore, there has been only a slow evolution of environmental funding mechanisms, e.g. from financing by taxpayers to financing by consumers and users, from traditional financing to more innovative forms of financing (such as funds managed by public or private authorities capturing donations and international funding).

Environmentally sound economic development: major policy directions and challenges

- develop national environmental plans in co-operation with other ministries;
- improve environmental awareness in government operations and reduce their environmental impact;
- review potential changes of consumption patterns from more polluting to less polluting patterns;
- support use of cleaner technologies and ensure that related concerns are addressed at an early stage of the development of sectoral policies in order to promote changes in production patterns;
- develop a more sustainable use of natural resources (e.g. fisheries, forestry).

2. Fostering Stronger Institutional Integration

Sustainable development emerged as an explicit aim in the late 1980s and early 1990s, requiring more concern for environmental issues in economic and sectoral policies, and strong interministerial co-operation and possibly arbitration. This applies to various levels of decision making: strategic development options, national planning efforts (including environmental planning), sectoral programme definition and implementation, budgeting and project design (e.g. environmental impact assessment).

Progress to date

Concerning sectoral policies, recognition of environmental concerns has progressed in the first half of the 1990s. Action plans and strategies have been developed in a number of countries and joint action by ministries is increasingly common. In transport policies (relating to vehicles, infrastructure and their use) and in energy policies, many actions to integrate environmental concerns have been taken; however, they are clearly insufficient to address problems created by ever-increasing traffic or energy use. In agriculture policies, there is a greater awareness of the need to adapt agricultural practices when they negatively affect the environment. In the areas of development assistance, forestry and fisheries, however, such recognition has generally been only recently translated into performance of main territorial units of countries.policies. Awareness of the need for integration of environmental concerns in fiscal and trade policies is even more recent, although some encouraging progress has been achieved over the past few years (Annex 1).

The mechanism for environmental impact assessments has been developed extensively. It is now used in most Member countries to assess both public and private projects likely to have negative effects on the environment and to integrate environmental concerns at an early stage in project design (e.g. for

infrastructure). This approach is being extended to sectoral plans, programmes and policies in a few countries.

Co-operation among the national, state/regional and local levels of government has improved with respect to environmental policies. A balance between a uniform, nationwide level playing field with respect to environmental regulations, and more decentralised and varied policies, has often evolved. Local governments have taken environmental concerns into greater account in their decision making, particularly in urban areas.

Improving awareness of environmental problems and selecting appropriate environmental protection measures require close partnership of all parties concerned in drawing up action plans to be implemented, with shared responsibilities. Public authorities have accepted the fact that command and control approaches can be complemented by extensive dialogue, joint action and involvement of social partners (e.g. confederations of industry, employers, trade unions, chambers of commerce and industry) and NGOs (e.g. indigenous peoples' organisations, environmental NGOs, women's associations, consumer unions, mayors' associations). Many joint bodies and even some environmental institutes have been created by social partners and the authorities to carry out activities benefiting the environment. Operation of round tables and multipartner meetings is not easy, but has brought useful results in a few Member countries, the main one being the effort to make every citizen and every firm feel greater responsibility for protecting the environment.

Further progress to be made

The results achieved to date through greater institutional integration among national ministries and administrations consist mostly of better planning and regulation of polluting activities and avoiding the most obvious damage. Environmental aspects often receive little attention at the strategic level, and consideration only at latter planning stages of projects, while the environmental implications of new sectoral policies are not always recognised.

At regional and local levels, it would be useful to increase the use of regional planning, land use planning and physical planning to achieve environmental goals. It would often be useful as well to develop further mechanisms of co-operation between territorial authorities and of monitoring environmental performance of main territorial units of countries.

Integration of government policies: major policy directions and challenges

- set up appropriate institutional structures and mechanisms to foster integration of environmental policies with other policies;
- integrate environmental concerns more systematically and more thoroughly into sectoral policies, such as energy, transport, agriculture;
- encourage all government operations to take environmental goals more fully into account and develop long term and short term targets for all priority environmental issues;
- promote the concept of environmental performance and improve methods of tracking environmental progress (e.g. better environmental data, environmental indicators, environmental reporting) at national and subnational levels.

3. Expanding the Role of the Market and the Use of Economic Instruments in Environmental Policy

Progress to date

The reviews carried out so far show that all the governments have achieved satisfactory results with use of regulatory instruments. Improvements to the traditional command and control approach have been introduced through integrated permitting systems and other examples of an overall multimedia approach for better protecting the environment. The command and control approach is now being supplemented with other instruments, and it is generally accepted that certain limitations inherent in regulatory measures can be alleviated by use of a mix of instruments, i.e. a wider use of economic instruments, voluntary agreements, etc. (Section 2.5).

OECD Environmental Performance Reviews have also shown that governments believe in the need to give a greater role to the market in environmental policy and to apply the polluter pays principle more fully. In addition, many OECD governments recognise the importance of moving towards full internalisation of environmental costs while acknowledging the economic and political difficulties of achieving this goal. Policy responses being considered and introduced include: wide application of the polluter pays principle and the user pays principle, creation of pollution charges and natural resource fees, taxes on the use of environmental goods and removal of subsidies for pollution prevention and control. These increase the cost initially borne by polluters, induce more cost-effective pollution prevention measures, reduce the burden on the public budget and promote a move towards production and consumption of less polluting goods. As a result, taxpayer and central government expenses are gradually being shifted to private firms and households that pollute or use natural resources.

Progress has been achieved in some countries with the introduction of a greater number of economic instruments (charges, fees, taxes, deposit-refund systems). Economic instruments such as tradable emission rights and transferable fishing quotas are being used in a few countries and have achieved good results where the fishing quotas were not too high (Annex 1). New instruments have been introduced that combine economic and regulatory instruments (e.g. new systems for the reduction of packaging waste) or that involve voluntary agreements (e.g. eco-label programmes).

The performance reviews have also shown that governments are making efforts to reduce general subsidies in a number of economic sectors, such as energy, transport and agriculture. Such subsidies generally distort production and consumption patterns; in addition they may have detrimental effects on the environment by stimulating overuse of environmental goods or resources or creating greater environmental damage, such as land erosion, groundwater exhaustion or pollution, and traffic congestion and air pollution. Nevertheless, certain subsidies (e.g. for public transportation or cleaner technology) can have beneficial consequences for the environment.

Further progress to be made

Subsidies are still provided by some countries in several economic sectors (e.g. transport, energy, agriculture, fisheries, forestry) to promote economic and social goals other than environmental and economic efficiency. Decreasing or removing subsidies should bring double dividends in many cases: less public spending and less environmental damage. Similarly, a shift from tax on labour to tax on natural resources and pollution would help in protecting the environment.

In addition, there remain many examples of users who do not pay, individually, the full cost of the service they receive. For instance, water consumers do not pay the cost involved in providing drinking water, irrigation water, etc., and treating waste water, and hence they do not seek to save a resource that is under strain. Water pollution control and waste water infrastructure are still supported with public money, thus reducing the amount being charged to users. Similar examples are found in relation to transport and energy, leading to excessive use of the goods and services being subsidised.

There remain serious theoretical and practical difficulties in fully internalising environmental damage costs and in organising full compensation of victims of serious environmental damage. The public and industry are in favour in principle of charging polluters. However, considerable work needs to be done to increase their sensitivity to and acceptance of the fact that they must bear the costs of the environmental goods they use, and that increasing the price of natural resources will make it possible to preserve them for current and future generations.

Building on market forces: major policy directions and challenges

- use more economic instruments to promote cost-effectiveness and to guide producer and consumer behaviour;
- remove as far as possible those subsidies that have detrimental effects on the environment;
- apply the polluter pays principle and the user pays principle more consistently;
- consider reducing taxes on labour and increasing taxes on natural resources and pollution.

4. Expanding the Use of Societal Instruments

Progress to date

Although voluntary agreements between government and industry have been in use for a few decades, particularly in areas such as CFCs, detergents, asbestos, tyre disposal, packaging and recycling, the first half of the 1990s has witnessed a striking increase in the number and types of voluntary measures being negotiated between relevant parties and public authorities and in purely voluntary actions by enterprises. Such agreements can provide cost-effective and flexible ways to achieve agreed targets, often as complements to regulatory and economic instruments; they work best when the group of firms in the economic sector involved is small enough to be able to organise itself and to act in conformity with its commitments. For this approach to be successful, there is a need to publicise the particular agreement, to monitor its implementation and to plan to incorporate additional measures in case the commitments are not met. At the level of the firm, environmental auditing is being practised on a growing scale and helps give management a better knowledge of the environmental impact of firms' activities. In a few countries, municipalities have carried out eco-audits of their activities and also entered into voluntary agreements with central government to reach environmental goals.

A hallmark of environmental management in most Member countries over the past three decades has been the degree of public participation in environmental decision making. Consultation of the public is a critical step whenever decisions have to be taken by public authorities on concrete projects (e.g. involving plant licensing or environmental impact assessment). It leads to better integration of all policies and to more

effective enforcement of environmental policies. Public consultation has developed extensively; it now takes place in almost all Member countries. In a few countries, it is used to improve the formulation of new policies, laws and regulations. Public participation requires appropriate environmental information. Such information can be provided by public authorities, the media, NGOs and lobbying groups. In addition, major industries report on their environmental achievements. Great progress has been made in ensuring access to all environmental data held by public authorities. Environmental information for consumers is also provided through logos and eco-labels, now used in most Member countries.

To support environmental protection, identify risks, foster appropriate decisions and seek cost-effective strategies, Member countries have developed research in environmental science and technology and allocated a significant part of their research and development budgets to this effect. In so doing, they have led the international community to identify environmental risks (e.g. toxics, ozone layer, climate change). Further development of scientific and technical information is essential to meet future challenges and avoid decisions based on preconceived and often inadequate ideas.

Further progress to be made

In a number of Member countries, schools and universities have incorporated environmental education in their curricula and attention is given to environmental training and materials for teachers. However, much progress remains to be made in these areas as well as in vocational education, continuing education and on-the-job environmental training.

Collection of environmental information and reporting on the state of the environment are now widespread among Member countries, and second-generation environmental data that are more responsive to policy needs and public information are under development in most countries. However, expanded efforts are needed to better track environmental progress. This involves:

i) filling environmental data gaps on specific environmental problems, and, more generally, on the economic dimensions of environmental performance (e.g. environmental expenditures, employment and trade aspects, environmental damage);
ii) developing and using environmental indicators in Member countries and explicit mechanisms to follow progress towards policy goals and targets and to measure effectiveness of pollution prevention efforts;
iii) improving public understanding based on facts and scientific knowledge and meaningful public participation;
iv) publishing periodic reports on the state of the environment.

Integration: major policy directions and challenges

— provide better information to consumers and increase pricing of key services to promote changes in consumption patterns;
— increase transparency of environmental decision making by improving consultation, public participation and access to environmental data;
— promote partnership approaches through round tables and voluntary agreements;
— continue to fund and promote science and technology efforts concerning environmental issues.

INTERNATIONAL CO-OPERATION

1. Setting Overall Principles and Commitments

Most environmental issues have an international dimension in the world of the 1990s. Some issues are of a global nature affecting the global commons, involving the removal of natural resources that are in limited supply, or a threat to the whole planet. Other issues only affect a region or one or more neighbouring countries. Member countries and the European Union have consistently taken a lead in identifying global and regional environmental issues, in proposing solutions and in providing technical and financial support to address these issues. As Member countries are to a large extent at the origin of these issues and are in a good position to bring about adequate remedies, they have recognised their special responsibilities and have promoted and adopted many international legal acts outlining how they intend to meet these responsibilities (e.g. concerning export of hazardous processes, products and waste; and environmental impact assessment of activities in less developed countries carried out with assistance from Member countries). Solving a global environmental issue often requires countries to ration their use of a finite resource hitherto available without limitation, and to act at an early stage on the basis of incomplete scientific information rather than at a later stage under the pressure of circumstance. These intrinsic difficulties of international co-operation have been overcome in a number of international agreements but there is room for further improvement, especially in cases where some countries do not carry an equitable share of the total burden.

Progress to date

In the first half of the 1990s, Member countries have gradually been implementing regional and worldwide environmental protection decisions they took in the 1980s and early 1990s, and have begun to explore new types of international co-operation. Countries have ratified and implemented numerous conventions, such as those concerning the Law of the Sea, transboundary movements of hazardous waste, long-distance transboundary air pollution and protection of the ozone layer. They have negotiated and adopted new conventions on biodiversity, climate change, desertification, preparedness to deal with industrial accidents and emergencies at sea, and started discussions on disarmament agreements concerning weapons with environmental side effects (e.g. chemical and nuclear weapons). Offices in charge of international environmental co-operation are having to deal with an ever-increasing number of international agreements at bilateral, regional and global levels, even as preparatory work continues on new agreements, some with significant economic implications (Annex 1).

International declarations and agreements are becoming increasingly specific because they contain both strategies and detailed procedures as well as quantified objectives to be achieved by set dates, or even standards with which signatories must comply. International co-operation, particularly within the framework of the European Union or the European Economic Area, has led many Member countries to adopt increasingly stringent and precise domestic measures. Decisions taken at the international level have often led participating countries to carry out costly measures to protect their environment and the environment beyond their border.

Member countries have been the driving force behind the continuing development of international environmental law. General principles adopted in the context of ministerial declarations have been incorporated into a number of international agreements at regional and global level. The polluter pays principle initially developed by the OECD has become recognised worldwide, while the precautionary principle has taken on increased importance in fields involving hazardous substances. Principles concerning public information, public participation in the making of decisions relating to the environment and the preparation of environmental impact assessments concerning major projects have become legal norms for most Member countries on both the domestic and international levels.

Among the most important results of the 1992 UN Conference on Environment and Development in Rio de Janiero are the international recognition given to the concept of sustainable development, the progressive implementation in Member countries of many chapters of Agenda 21, and awareness of the changes that need to be made to modify production and consumption patterns.

The interrelationship between environmental policies and international trade policies has been the topic of extended analysis and discussions. Unilateral measures in favour of the environment are considered acceptable only to the extent that they are compatible with international trade law. Progress has been made towards international environmental conventions that authorise measures aimed at restricting certain aspects of trade so as to promote environmental goals.

The 1990s have seen a new concept emerge: common but differentiated responsibilities on the part of developed and developing countries, based on the differing contributions of developed and developing countries to the present state of the environment and their differing capacities for protection of the environment. Among the priorities of development aid is environmental protection, which can account for 10 to 25 per cent of total aid by Member countries. Similarly, world and regional development banks are according higher priority to environment in their overall development portfolios. While environmental aid has grown in recent years, this growth has generally been at the expense of other types of aid, since total development aid has generally remained stable or even declined. The concept of new and additional resources was implemented with the creation of the Global Environment Facility, but in most aid programmes this concept continues to have a marginal role. Many Member countries have launched additional technical assistance and financial aid programmes to contribute to environmental protection in central and eastern Europe (Annex 1).

Further progress to be made

The increased level of international co-operation in the late 1980s and early 1990s has mostly been in the area of declarations and general agreements. Actual progress towards the goals adopted in these instruments and in Rio de Janeiro is very much dependent on adopting and enforcing national legislation, on financing monitoring networks and infrastructure, on improving the integration of environmental and other policies, and on reinforcing government structures for environmental management. In many cases, implementation of international agreements has not been as rapid as foreseen; efforts should be stepped up if the expectations raised in Rio are to be fulfilled (Annex 1).

The global environmental consequences of economic growth in less developed countries have not yet been fully taken into account by Member countries, especially in the area of climate change. A number of significant issues concerning environment and trade are still unresolved. Additional environmental aid could be provided to the developing world to enable it to meet global challenges. Development aid provided by

OECD countries is still far below 0.7 per cent of GNP (Annex 1). More generally, international environmental solidarity on "spaceship earth" has not evolved in pace with the economic globalisation of the planet.

General international issues: major policy directions and challenges

- pursue efforts with a view to concluding and ratifying international agreements to protect the environment;
- provide the necessary means on the domestic level to follow through on commitments made on the international level;
- develop and implement international mechanisms of compliance control for international agreements;
- review the quantity and quality of environmental aid to enhance environmental protection in developing countries and provide them with means to facilitate implementation of international agreements where relevant resources are lacking;
- continue to develop international environmental law so as to enhance environmental protection in all countries, prevent and solve environmental disputes between states and provide redress for environmental damage arising in an international context.

2. Dealing with Regional Issues

Progress to date

Throughout the OECD, noteworthy reductions in transboundary air pollution have been recorded over the last 25 years. SO_x emissions have been considerably reduced in Europe, leading to a decrease in acid precipitation in some areas. New agreements on transboundary air pollution have been adopted in the 1990s in Europe and North America to reduce acid precipitation even further. Concerning emissions of NO_x, the results are more modest, as stabilisation will be achieved in the 1990s in a limited number of countries only (Annex 1).

On the political level, real progress has been made after meetings of Ministers for the Environment at regional high level conferences (on the North Sea, the Rhine, etc.) or in ministerial level institutions such as the Council of the European Union, the North American Commission for Environmental Cooperation and the South Pacific Forum. Ministers have decided on important goals, plans and strategies at such meetings. For instance, the very positive results achieved in combating pollution by pesticides and heavy metals as well as point source emissions have made it possible to reduce the pollution of regional seas such as the North Sea and the Baltic Sea. Great strides have been made in the construction of secondary and tertiary waste water treatment facilities and the gradual cessation of the practice of releasing untreated discharges into coastal waters. Regional co-operation involving Member and non-Member countries has been launched for the Arctic, central Europe, the Pacific, etc., and will probably grow in coming years.

Positive steps have been taken towards abating pollution of international rivers and lakes. The first major multilateral convention in this field has been adopted, and specific agreements have been reached on such sensitive topics as the pollution of the Rhine, the Meuse and the Scheldt. Quantified goals and action plans have been decided upon at the political level, and follow-up programmes have been established and implemented. European Union directives have helped in harmonising emission control in EU countries as well as in many European countries associated with the EU. On the basis of progress already made, it appears that many of the goals set for international rivers will probably be reached, albeit somewhat belatedly in certain cases.

Compensation for damage caused by radioactive pollution or by pollution from maritime oil transport accidents has been improved in a number of countries and new conventions have been adopted. The adoption of the Lugano Convention on third party liability for environmental damage is an important step forward in the area of compensation of environmental damage in a domestic or international context.

Further progress to be made

Economic growth, increased traffic and energy use, intensification of agriculture, increased urbanisation and growth in consumption may all lead to increasing pressures on the domestic and global environment. Some of these pressures have also generated significant spillover into other countries, which could be alleviated by closer co-operation.

International agreements, when finally reached, usually take time to be implemented, or leave ample room for further discussion and delay in taking action. The slowness of this process is a source of concern because preventive policies need time to make their effects on the environment felt. Furthermore, some Member countries have failed to support international co-operation by not paying their contributions when requested, not providing adequate information or data or not acting on decisions they had approved.

A decrease of NO_x emissions by 30 per cent by 1998, as originally agreed in Sofia by 12 Member countries, is not likely to be achieved, mainly because of the increase in vehicle numbers, use and unit power. Nutrient discharges from diffuse sources into certain seas, such as the North Sea and the Baltic Sea, have not been decreased within prescribed deadlines. Many countries have accepted new responsibilities on preventing transfrontier pollution, but few have yet agreed to ratify the Lugano Convention on third party liability, as if strict liability was still too progressive a concept to be implemented in a regional framework.

Regional issues: major policy directions and challenges

- focus on areas where the results thus far and the forecasts do not fully correspond to commitments, particularly with regard to stabilising or reducing NO_x emissions;
- pursue bilateral, trilateral and regional co-operation to solve environmental problems in border regions, including problems relating to transport and hazardous industrial installations, and problems arising in international water basins and regional seas.

3. Addressing Global Issues

Progress to date

The most striking achievements have come with regard to substances affecting the ozone layer. The targets set have been reached earlier than was originally called for, and new and more stringent targets have been established. In some countries, effective measures have been taken to reduce CFC emissions from existing installations. However, ozone depletion over Antarctica and the Arctic is still growing and there is evidence that illegal trading of CFCs is taking place, undermining current efforts to shift to less harmful substances (Annex 1).

The international community has taken up the issue of climate change and in 1992 reached a consensus on the need to limit global emissions of CO_2 and other greenhouse gases, as well as for Member countries to stabilise and ultimately reduce their future emissions. However, there is no agreement at international level on target dates and CO_2 emissions are still growing in many Member countries (Annex 1).

Strict controls over movements of hazardous waste among Member countries have been set up on the basis of agreements at the OECD and EU levels and under the Basel Convention. Special measures have been taken to prohibit the export of hazardous waste for disposal in non-Member countries; as a result, the only such exports now are of waste destined for recovery operations and shipped with the agreement of the importing country. Further restrictions to such trade will be implemented soon.

Concerning protection of the marine environment, the Law of the Sea and Oil Pollution Preparedness, Response and Cooperation Conventions have entered into force and implementing measures are being taken. Bans on discharging radioactive or industrial waste into the sea or incinerating them at sea have succeeded in reducing marine pollution.

The protection of biodiversity and of endangered species has progressed thanks to the creation of more effective supervisory mechanisms in the framework of existing conventions (CITES, Ramsar, etc.) and the adoption of a general global convention on biodiversity and of regional agreements.

The level of protection of certain natural resources in the marine environment has increased lately. The depletion of stocks of certain fish species has led to the creation of better management instruments and more rigorous policies. Bans on the use of driftnets and on whaling are signs of greater awareness that certain species might be adversely affected. A marine sanctuary for whales in Antarctic waters was recently created. Concerning the Antarctic continent, an agreement to ensure its total protection has been adopted.

Many Member countries have launched special activities to help developing countries in their efforts to protect the environment, providing training, technological know-how, experts, financial assistance and help in building capacity to deal with environmental issues.

Further progress to be made

At global level, a few Member countries are lagging in deciding to adopt conventions that have been ratified by most other Member countries. Many problems remain in relation to the implementation of international agreements, partly because many signatories, especially those countries at lower levels of

economic development, simply do not have the financial and technological means and institutional infrastructure to comply with the obligations unless Member countries provide them; in addition, a few Member countries are progressing slowly on global issues because such progress will provide them with little direct benefit. Without greater commitment by all parties and adequate transfers of financial and technological means, many international obligations and goals will not be fulfilled.

In relation to climate change, results achieved so far are disappointing because measures aimed at stabilising or reducing emissions of greenhouse gases have not yet had much effect or have not been implemented in a few countries. Because of overreliance on voluntary agreements, a lack of economic incentives and relatively low prices for energy, it is unlikely that greenhouse gas emissions from Member countries will be stabilised by 2000 at their 1990 level. Many Member countries are in favour of adopting clear targets on CO_2 emissions at international level, so that the burden is shared more equitably among Member countries (Annex 1). There is a need for all partners and all countries to implement a more ambitious programme of activities to avoid the risk of detrimental climate change.

Protection of the marine environment will require new efforts and increased co-ordination among many different administrations. Management of some fish stocks has not been successful, leading to declining catches and disruption of the fishing industry. Research on fish stock decline has not yet elucidated the roles of all the various contributing factors. Implementation of internationally agreed bans to protect marine resources of the high seas or Antarctica may be delayed in some countries because agreed measures affect the fishing industry, limit access to valuable resources and remove options for economic development. This is likely to be one of the major challenges, and areas of potential conflict, in the years ahead.

There are also a number of specific areas in which little or no progress has been achieved so far at international level. In particular, the development of international responsibility/liability of states has not progressed since the Stockholm Conference and issues of technology transfer to developing countries have not been sufficiently addressed.

Global issues: major policy directions and challenges

— strengthen current efforts to better address climate change issues, including developing an international agreement with clear targets on CO_2 emissions and implementing national strategies on greenhouse gases at a faster pace;
— develop economic and other instruments to support regulatory actions aimed at controlling emissions of greenhouse gases;
— strengthen measures to protect the marine environment from land-based pollution and to prevent overfishing in international waters;
— support efforts to implement agreements on biodiversity and protection of endangered species.

ANNEX 3
MAXIMISING THE BENEFITS FROM PERFORMANCE REVIEWS

At its 5th meeting in June 1994, the Group on Environmental Performance had an initial discussion of the output from the reviews and suggested ideas for getting the maximum benefits from the Group's work. Then, at its 6th meeting in November 1994, the Group approved the following orientations to maximise the benefits from the OECD environmental performance reviews. Annex 3 includes nine proposals endorsed by the GEP.

1. LEARNING THE LESSONS

From the experience of being a country under review. The benefits of being a country under review can be obtained during the review mission process (and the related consultation process among ministries, various levels of government, and with non-government organisations), the examination meeting and the publication/ dissemination phase of the report, including how it is subsequently used inside and outside the administration. These benefits derive from the influence of the OECD reviews on decision-makers and on the public.

Proposal A: The Group should invite feed-back comments from countries that have been reviewed during the year following their examination.

From participating in the mission to another country. Each review involves team members from other countries, generally three. There should be significant benefits to a country that participates, as well as costs. It has a unique opportunity to find out more about another country's environmental issues and responses. It can get the greatest benefit if it thinks carefully about who should represent it and enables its representative to find time to contribute and to report back on return. Individuals chosen should be of sufficient experience or seniority. The cost can be relatively high, both in terms of time and expense. If having three countries per mission does not accommodate all countries wishing to participate during a given year, it is feasible to have four countries per review mission (e.g. reviews of Japan, Netherlands, Canada).

Proposal B: Member countries should aim to participate in a review every year or every 2 years.

From joining the Groups'peer-review process and discussions. Similarly, the Group's peer-review discussions of draft reports, as well as being part of the process of finalising the conclusions, open a window on other countries' experience and environmental management technique. Briefing in capitals in preparation for the peer review meetings should contribute to both the exchange of experience among countries and sharpening the examination in the GEP peer review. Also, benefits should be derived from the OECD's performance review methodology by individual countries in evaluating their own performance.

Proposal C: Member countries should give high attention to their participation in the GEP peer-review meetings and ensure continuity in their representation.

2. PASSING ON THE LESSONS

To environmental and other administrations. Environment ministries and agencies are involved in all stages of the review process. Nonetheless, how deeply they become involved may depend upon the actions of their representative to the Group. Other ministries and government agencies are more removed, except when their own country is under review. Similarly, informing other tiers of government (e.g. states of a federation, local government) should be useful. In general, Members of the Group should attempt to use the most accessible information means (e.g. ministry environmental newsletters) to report on recent publications and forthcoming ones.

Proposal D: The Secretariat should send press notices on forthcoming review reports to all members of the Group. Members, in turn, should arrange that environmental newsletters of their ministry appropriately and regularly refer to the published environmental performance reviews.

To non-governmental organisations, the press and the public. To make the findings of environmental performance reviews widely known the OECD should publish its press notices, announcing publication. The reviewed country could well wish to add its own press notice or press conference, co-ordinated or jointly arranged with OECD. Important findings could be taken up in public debate by NGOs (business, unions, environmental NGOs, the academic community), the press and others. One way to make the findings known more widely is to make the country reports themselves widely available in an accessible form. Norway and Portugal, for example, published the conclusions in Norwegian and Portuguese in brochures for public consumption; Germany and Japan have published the full report in German and Japanese. Translations of the full report concerning Italy and Poland are also being prepared in Italian and in Polish respectively.

Proposal E: Reviewed countries should plan a national core distribution of the report and if necessary, publish the conclusions and/or the report in their own language. The Secretariat should review ways and means to better target the dissemination of the reports through a special effort from its Publication Service.

Within the OECD and to other international organisations. The findings of the reviews should be taken into account, where appropriate, in other OECD reviews and other international organisations. This means not only the OECD Environmental Policy Committee (EPOC) and its subsidiary bodies, but also committees dealing with economic matters.

Proposal F: The Secretariat should ensure the regular distribution of Environmental Performance Reviews to Heads of Delegations of the EPOC, and to Chairmen of its relevant subsidiary bodies and of other relevant OECD committees. Similarly, the Secretariat should bring the results of the GEP's work to the attention of other relevant international organisations (UNCSD, UNEP, UNDP, UN-ECE, IBRD, EBRD).

3. CONSOLIDATING THE LESSONS

On tracking environmental progress. In their discussions, the Group on Environmental Performance and the Group on the State of the Environment have already touched on various other mechanisms for tracking environmental progress. These include national and international state of the environment reports; national reports on the implementation of national plans or of government commitments. The Group have also discussed how to improve environmental statistics; develop environmental indicators; environmental accounting and pressure-state-response frameworks. Access to environmental information and the "right to know" are also important for the tracking of environmental progress in democratic societies.

Proposal G: The Group should reflect further (in liaison with the Group on the State of the Environment) on "tracking environmental progress", possibly contributing an issues paper for discussion at the 1996 OECD Meeting of Environment Ministers.

On the environmental performance of Member countries. Several suggestions were made (in the June GEP and September SoE Group discussions) concerning the publication of documents giving an account of more than one review: a description of the programme as a whole for a wider audience; more ambitiously, an occasional synthesis on the findings of all the reports produced over a period of two or three years; a new SOE report; a factual report building on environmental indicators; a selection of environmental management "success stories". There were, however, words of caution on feasibility and resources needed. The Group should not publish reports focussing on direct comparison of one country with another (unless at some future date reviews are conducted with that intention in mind). Rather, the Group could consider making its work known to a wider, specialist, audience by publishing an account of its work over the first few years (the "monograph"). Publication in 1996 would enable the account to cover not only the initial two-year transition phase, but also the two years of the fully-fledged programme. A 1996 date would also take account of the extension to UN-ECE coutries, the application of the core indicators, and the development of the conceptual framework.

Proposal H: The Group should discuss the possible content and publication of a monograph in 1996, possibly in connection with the 1996 OECD Meeting of Environment Ministers.

On the methodology for environmental performance reviews. The Group has developed a methodology for environmental performance reviews. Consolidating its methodological efforts (e.g. concept of environmental performance, pressure-state-response conceptual framework, use of the core set of environmental indicators in reviews, checklist) into a handbook might be useful for members of the OECD review teams, new members of the GEP, as well as for the extension of the programme by UN-ECE to central and eastern European countries.

Proposal I: Prepare a compilation of the main methodological papers into a handbook on environmental performance reviews.

ANNEX 4
MAIN PUBLICATIONS

I. OECD Environmental Performance Reviews:

♦ **Germany**	**(1993)**	*English, French, German*
♦ **Iceland**	**(1993)**	*English, French*
♦ **Norway**	**(1993)**	*English, French*
♦ **Portugal**	**(1993)**	*English, French*
♦ **Japan**	**(1994)**	*English, French, Japanese*
♦ **United Kingdom**	**(1994)**	*English, French*
♦ **Italy**	**(1994)**	*English, French, Italian*
♦ **Netherlands**	**(1995)**	*English, French*
♦ **Poland***	**(1995)**	*English, French, Polish*
♦ **Canada**	**(1995)**	*English, French*
♦ **Austria**	**(1995)**	*English, French, German*
♦ **United States**	**(1996)**	*English, French, Spanish*
♦ **Bulgaria***	**(1996)**	*English, French*
♦ **Sweden**	**(1996)**	*English, French*
♦ **New Zealand**	**(1996)**	*English, French*
♦ **France**	**(1997)**	*English, French*
♦ **Spain**	**(Spring 1997)**	*English, French, Spanish*
♦ **Korea**	**(Summer 1997)**	*English, French*
♦ **Finland**	**(Autumn 1997)**	*English, French*
♦ **Mexico**	**(Spring 1998)**	*English, French, Spanish*
♦ **Australia**	**(Spring 1998)**	*English, French*

Environmental Performance in OECD Countries: Progress in the 1990s, OECD (1996) *English, French*

OECD, Environmental Performance Reviews - A Practical Introduction, 1997, OECD Environment Monograph *English*

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* In co-operation with UN-ECE.

II. Environmental Data and Indicators

OECD (1995) **OECD Environmental Data: Compendium 1995** (also forthcoming in 1997)
OECD (1994) **OECD Environmental Indicators** (also forthcoming in 1997)

OECD (1996) OECD Assessment of the Environmental Information System of Mexico, OECD Environment Monograph
OECD (1996) Pollution Abatement and Control Expenditure in OECD Countries, OECD Environment Monograph
OECD (1995) Environmental Accounting for Decision-Making: Summary Report of an OECD Seminar, OECD Environment Monograph
OECD (1994) Natural Resource Accounts: Taking Stock in OECD Countries, OECD Environment Monograph
OECD (1994) Environmental Information Systems in Belarus: An OECD Assessment, OECD Environment Monograph
OECD (1993) Indicators for the Integration of Environmental Concerns into Energy Policies, OECD Environment Monograph
OECD (1993) Indicators for the Integration of Environmental Concerns into Transport Policies, OECD Environment Monograph
OECD (1993) Environmental Information Systems and Indicators: A Review of Selected Central and Eastern European Countries
OECD (1993) OECD Core Set of Indicators for Environmental Performance Reviews OECD Environment Monograph
OECD (1996) Pollution Abatement and Control Expenditure in OECD Countries, OECD Environment Monograph
OECD (1991) Environmental Indicators: A Preliminary Set