

Technical annex: Quality of information

Key:
Overall quality of information score:
☆☆☆☆ 'high', ☆☆☆ 'medium' or ☆☆☆ 'low'

Chapter 3: Households

Indicator	Overall score	Comments
3.1. Some indicators of household eco-efficiency	☆☆	Data for carbon dioxide emissions is based on emissions from fossil fuel use by households which provide a relatively low estimate of total greenhouse gas emissions from households (due to the fact that emissions from private transport are excluded).
3.2. Water and energy consumption	☆☆	Consistency of definitions and information over countries, data sources and over time is not guaranteed.
3.3 Purchase of eco-labelled products	☆☆☆☆	Based on precise figures collected by the European Commission.

Chapter 4: Transport

Indicator	Overall score	Comments
4.1. Passenger and freight transport volumes	☆☆	Data on passenger-km and tonne-km are calculated rather than directly measured. Some modes are excluded due to a lack of historical data. Passenger and freight transport intensity: country breakdowns for short sea shipping and intra and extra European flights are missing. Vehicle-kilometre would be a more suitable indicator to monitor decoupling, but statistics are very incomplete.
4.2. Modal split in passenger and freight transport	☆☆	Passenger modal split: motorcycle and waterborne modes are excluded due to a lack of data; country breakdown of intra and extra European flights missing. Freight modal split: country breakdown of short-sea shipping statistics is missing.
4.3. Transport eco-efficiency	☆☆	Carbon dioxide and air pollutant emissions from international air and ship traffic are excluded in line with international agreements. Energy and emission data lack a breakdown in passenger and freight transport.
4.4. Uptake of cleaner technologies and fuels	☆☆	Data on the share of the fleet complying with certain emissions standards have been modelled.
4.5. Differentiation of transport taxes and charges	☆☆	Miscellaneous sources.
4.6. Real changes in fuel prices	☆☆☆☆	Based on quarterly statistics from European Commission Oil Bulletin: http://europa.eu.int/comm/energy/en/oil/bulletin_en.html

Chapter 5: Energy

Indicator	Overall score	Comments
5.1. Energy intensity of the economy	☆☆☆☆	Data from Eurostat
5.2. Eco-efficiency of the energy industry	☆☆	Data values for transformation output are provisional for 1998 and 1999. Officially reported emissions data following agreed procedures. Weighting factors have been used so that emissions can be combined in terms of their polluting effects.

5.3. Emissions from electricity production	☆☆	Officially reported emissions data following agreed procedures. Data and analysis are the preliminary results of ongoing work to refine and improve associated statistics and methodology. The results must not be regarded as accurate estimates of absolute values.
5.4. Total energy consumption by fuel	☆☆☆	Data from Eurostat
5.5. Share of total energy and electricity obtained from renewables	☆☆☆	Data for individual biomass and waste energies are only available for 1990, 1996-1999. Biomass data for Germany and Italy suggest a large increase in wood use for households between 1996 and 1999. This is due to improved data collection methods which result in more accurate data collection than in previous years.
5.6. Share of combined heat and power in gross electricity production	☆☆☆	1998 data for combined heat and power electricity generation in Greece is an estimate, and data for Germany for 1994 is from 1995 and there is no data for Luxembourg in 1994.
5.7. Real energy prices	☆☆☆	Note that changes in data sources and methodologies used have resulted in some changes in prices presented here compared with Environmental signals 2000.
5.8. Energy tax levels	☆☆☆	There are some differences in the level of the prices shown here to those in Environmental Signals 2000 due to a change of data sources and the use of different methodologies to calculate average EU prices.

Chapter 6: Agriculture

Indicator	Overall score	Comment
6.1. Agriculture eco-efficiency	☆☆	There are some concerns regarding the reliability and consistency of some of the data which is collected by Member States using different types of survey for the various eco-efficiency parameters. The use of gross value added may under-represent the increase in agricultural eco-efficiency since the ratio of output to input prices may be declining more strongly in agriculture than in other sectors.
6.2. Bird population trends in relation to farming intensity	☆☆	FAO and RSPB data are generally reliable. Historical bird census data in different countries may show inconsistencies and are only partly sufficiently quantified.
6.3. Areas vulnerable to nitrates	☆☆	The adequacy scores for the Member State measures under the Nitrates Directive are based on semi-quantitative criteria that are subject to interpretation.
6.4. Structure of Common Agricultural Policy support	☆☆☆	Financial information provided by the European Commission on the EU budget is considered reliable.
6.5. Developments in organic farming	☆☆	The data on organic farming area come from one source even though accuracy still varies between countries and is not complete over the whole time series.

Chapter 7: Fisheries

Indicator	Overall score	Comments
7.1. Size of the fishing fleet	☆☆	The datasets are fragmented both temporally and spatially.

7.2. Status of fish stocks	☆☆	The datasets are based on time series that can give a good account of the state of a stock, but different approaches are being used in the Mediterranean and the NE Atlantic to determine if a stock is outside safe biological limits.
7.3. North Sea cod stock	☆☆☆	The most serious cause of uncertainty lies within information and types of data not being reported (discard, unrecorded landings, fraudulent reporting).
7.4. Aquaculture production	☆☆	The data are provided by official national data sources and have had some initial validation.

Chapter 9: Climate change

Indicator	Overall score	Comment
9.1. Total emissions of greenhouse gases	☆☆☆	Officially reported data following agreed procedures but fluorinated gas emissions not yet reported by all Member States and the quality of emissions estimates for nitrous oxide and methane should be further improved by Member States.
9.2. Emissions of greenhouse gases by sector and gas	☆☆☆	Officially reported data following agreed procedures but fluorinated gas emissions not yet reported by all Member States and the quality of emissions estimates for nitrous oxide and methane should be further improved by Member States.
9.3. Global and European mean temperature	☆☆☆	Reliable data with low uncertainty.

Chapter 10: Air pollution

Indicator	Overall score	Comments
10.2 Urban air quality exceedances for ozone	☆☆☆	Improvement in coverage over space and time and extrapolation to the total urban and rural population is required for the future.
10.3 Urban air quality exceedances for particulates	☆☆☆	Improvement in coverage over space and time and extrapolation to the total urban and rural population is required for the future.
10.4 Urban air quality exceedances for sulphur dioxide	☆☆☆	Improvement in coverage over space and time and extrapolation to the total urban and rural population is required for the future.
10.5 Urban air quality exceedances for nitrogen dioxide	☆☆☆	Improvement in coverage over space and time and extrapolation to the total urban and rural population is required for the future.
10.6 Exposure of agricultural crops and forests to ozone	☆☆☆	Improvement of coverage in space and time is required for the future.
10.8 Aggregated emissions of acidifying substances	☆☆	Countries need to fill some data gaps to improve the completeness of the time series of their estimates.
10.9 Aggregated emissions of ground-level ozone precursors	☆☆	Countries need to fill some data gaps to improve the completeness of the time series of their estimates.
10.10 Particle emissions	☆☆	The emission data for primary PM ₁₀ is not as robust as that for other air pollutants and the factors used in the estimation of secondary PM ₁₀ emission are based on assumptions about the deposition and reactions of the precursor pollutants.

Chapter 11: Inland and coastal waters

Indicator	Overall score	Comments
11.1. Water use versus resources	☆☆	Consistency of definitions and information over countries, data sources and over time is not guaranteed. Comparisons should be made with some precaution.
11.2. Organic pollution in rivers	☆☆☆	Generally good, some data still requires validation
11.3. Waste water treatment	☆☆	There are some variations in the definitions of different classes of treatment between countries and not all countries provide data for all years.
11.4. Nutrients in rivers	☆☆☆	Generally good data although some data still requires validation
11.5. Nutrients in coastal waters	☆☆☆	The test for trend at sampling points is a robust and accepted approach, accuracy partly influenced by the number of sampling points for which data are available.
11.6. Chlorophyll-a in marine and coastal waters	☆☆	This assessment only allows the analysis of trends. The accuracy on country level is largely influenced by the number of stations for which data are available. The trend detector is a robust and accepted approach.
11.7. Bathing water quality	☆☆☆	Generally high quality information, note that no data is yet available for EU accession or EFTA countries.
11.8. Oil pollution from offshore installations and illegal discharges	☆☆	Not all countries report data on organic-phase drilling fluids. Data calculations for discharges from refineries need to be checked. Coverage of the Mediterranean and the Black Sea is missing from the offshore installations discharges.

Chapter 12: Waste and material flows

Indicator	Overall score	Comments
12.1. Total material requirement	☆☆	Data sources for indirect flows associated with imports have to be internationally improved.
12.2. Total waste generation	☆	Data provision and statistical improvements are needed in all Member States, the proposed waste statistic regulation will when implemented make countries provide the necessary information.
12.3. Municipal waste generated and landfilled/incinerated	☆☆	The proposed Council Regulation on Waste Management Statistics will provide some of the necessary statistical improvement for this indicator.
12.4. Packaging waste	☆☆	To ensure data comparability clarification is needed on the methods used to estimate the quantities of packaging put on the market and recycling and recovery rates.
12.5. Hazardous waste	☆	Adequate information on hazardous waste management is not available, so a reliable assessment of the current situation in Europe cannot be made.

Chapter 13: Land

Indicator	Overall score	Comments
13.1. Land take due to urban development	☆☆☆	Corine land cover: exhaustive but coarse scale. Moland/Murbandy: good scale but 24 cities only.
13.2. Soil sealing	☆	Statistical data based on national surveys with different methodologies and results may vary across countries.
13.3. Fragmentation and partitioning of habitats by transport infrastructure	☆☆	Roads of GISCO database not consistent over countries; frequent updating needed.

Chapter 14: Forest

Indicator	Overall score	Comments
14.1. Total forest area and "naturalness"	☆☆	Certain differences in data accuracy still remain between countries because of different methodologies and reference periods upon which estimate of annual change is based vary somewhat between countries. Interpretation of 'plantations' still varies between countries due to difficulties to apply FAOs global definition for European planted forests which are subject to diverse management regimes.
14.2. Annual fellings and increment of growing stock	☆☆	Comparison of data from different time periods — comparing countries should be made with caution.
14.3. Origin and impacts of tree planting material	☆☆	Dataset incomplete, some missing countries may plant non-native species to a large extent.
14.4. Forest condition	☆☆☆	Data set provided by ICP Forest, running one of the biggest biomonitoring networks worldwide.
14.5. Threatened forest species and protection of forest habitats and species	☆☆☆	Data reported in the framework of the EC Habitats Directive
14.6. Level of protection of forests	☆☆	There are some uncertainty associated with the assessment of the surface area covered by habitats and differences in interpretation of 'protected forests' by countries.

Chapter 15: Environmental taxes

Indicator	Overall score	Comments
15.1. Revenue from environmental taxes	☆☆	Provisional data from Eurostat
15.2. Ratio of revenue from environmental taxes to revenue from other taxes	☆☆	Structures of the Taxation Systems in the European Union 1990-1997 (DG TAXUD & Eurostat). The data for 1997 have been extrapolated to 1998 and 1999, using the short-term economic forecasts from the Commission Services
15.3. Introduction of environmental taxes and some indications of effectiveness	☆☆	EEA (2000) Environmental taxes — Recent developments in tools for integration; OECD/EU database for environmental taxes

Technical annex:

Key references and further reading

Chapter 1: Introduction

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Chapter 2: Progress in the integration of sectors and the environment

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Technical annex:

Acronyms, abbreviations and symbols

AC	Accession countries
ACFM	ICES Advisory Committee on Fishery Management
BOD	Biological oxygen demand
CAFE	Clean Air for Europe Programme
CAP	Common Agricultural Policy (EU)
CEC	Commission of the European Communities
CFCs	Chlorofluorocarbons
CFP	Common Fisheries Policy
CHP	Combined heat and power
CLRTAP	Convention on Long Range Transboundary Air Pollution (UNECE)
CO ₂	Carbon dioxide
DEPA	Danish Environmental Protection Agency
DG	Directorates General (of the European Commission)
DPSIR	Driving forces, pressures, state, impacts, responses
EAGGF	European Agricultural Guarantee and Guidance Fund
EC	European Community
ECCP	European Climate Change Programme
ECMT	European Conference of Ministers of Transport
ECPA	European Crop Protection Association
EEA	European Environment Agency
EFTA	European Free Trade Association
EIA	Environmental Impact Assessment
EMAS	EU Eco-Management and Audit Scheme
EMEP	Cooperative Programme for Monitoring and Evaluation of the Long Range Transmission of Air Pollution in Europe
ESDP	European Spatial Development Perspective (EU intergovernmental initiative)
ETR	Ecological tax reform
EU	European Union
Eurostat	Statistical Office of the European Union
FAO	UN Food and Agriculture Organisation
FGD	Flue gas desulphurisation
FIFG	EU Fisheries Instrument for Fisheries Guidance
FYROM	Former Yugoslav Republic of Macedonia
5EAP	Fifth Environmental Action Programme
6EAP	Sixth Environmental Action Programme
GDP	Gross domestic product
GIEC	Gross inland energy consumption
GMES	Global Monitoring for Environment and Security
GVA	Gross value added
HELCOM	Helsinki Commission
HFCs	Hydrofluorocarbons
ICCAT	International Commission for Conservation of Atlantic Tuna
ICES	International Council for the Exploration of the Sea
ICWS	International Centre for Water Studies
IEA	International Energy Association
IMW	Industrial and municipal waste
INSPIRE	Infrastructure for Spatial Information in Europe (European Commission)
IPM	Integrated pest management
IPP	Integrated product policy (European Commission)
IPCC	Intergovernmental Panel on Climate Change
IPPC	Integrated Pollution Prevention and Control (EU Directive)

IVM	Institute for Environmental Studies (Vrije University, Amsterdam)
MAGPs	EU Multi Annual Guidance Programmes
MCPFE	Ministerial Conference for Protection of Forests in Europe
NECD	National Emissions Ceilings Directive (European Union)
NH ₃	Ammonia
NMVOCS	Non-methane volatile organic compounds
NOx	Nitrogen oxides (including nitric oxide, NO and nitrogen dioxide, NO ₂)
NTUA	National Technical University of Athens
NVZs	Nitrate vulnerable zones (European Union)
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
OSPAR	Joint Oslo and Paris Commissions
PEFC	Pan-European Forest Certification
PM ₁₀	Particulate matter < 10 microns in size
REC	Regional Environmental Centre (Budapest, Hungary)
RIVM	National Institute of Public Health and Environmental Protection, The Netherlands
SACs	Special Areas of Conservation
SBL	Safe biological limits
SHOM	Service Hydrographique et Océanographique de la Marine, France
SO ₂	Sulphur dioxide
SPAs	Special Protection Areas
TAC	Total allowable catch (EU Fisheries policy)
TENs	Trans-European (transport) Networks
TERM	Transport and Environment Reporting Mechanism (EU)
TMR	Total material requirement
TOFP	Tropospheric ozone forming potentials
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
UNECE	United Nations Economic Commission for Europe
UNECE ICP	UNECE International Co-operation Programme on Assessment and Monitoring of Air Pollution Effects on Forests
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value added tax
WCMC	World Conservation Monitoring Centre
WHO	World Health Organisation

Symbols and units

d	day
°C	degrees celsius
g	grammes
h	hour
ha	hectare
Hkg/ha	one hundred kilogrammes per hectare
kg	kilogrammes
km	kilometre
km ²	square kilometre
kt	kilotonnes
kW	kilowatts
l	litre
µg/m ³	microgrammes per cubic metre
µgN/l	microgrammes of nitrogen per litre

$\mu\text{gP/l}$	microgrammes of phosphorus per litre
m^2	square kilometres
m^3	cubic metres
mg	milligrammes
mg/m^3	milligrammes per cubic metre
ML	megalitre
ML/day	megalitres per day
ppb	parts per billion (parts per 1000 million)

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