ANNEXES

ANNEXE I:
LIST OF PRIMARY INDICATORS

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SOME SYSTEMS OF ENVIRONMENTAL INDICATORS

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ATMOSPHERE		
	Indicator	**Type**
A1	Number of licensed vehicles	Pressure
A2	Heating Fuel	Pressure
M2	Number of industrial employment in potentially polluting activities	Pressure
A3	Number of atmospheric emergencies	Pressure
A4	Greenhouse gases levels	State
A5	Acidify gases levels	State
A6	Ground-level Ozone levels	State
A7	Heavy metals levels	State
A8	Noise levels	State
A9	Number of air quality monitoring stations	Response
A10	Percentage of clean energy in total energy consumption	Response
A11	Local Authorities with atmospheric improvement programmes	Response

INLAND WATERS. WATER QUALITY		
	Indicator	**Type**
M1	Population density	Pressure
M2	Number of employment in potentially polluting activities	Pressure
B1	Land surface taken by intensive agricultural uses massively	Pressure
B2	Cattle population	Pressure
B3	Water quality	State
B4	Population enjoying water treatment	State
B5	Agricultural wastewater treated	State
B6	Public investment in water treatment	Response

INLAND WATERS. WATER CONSUMPTION		
	Indicator	**Type**
C1	Water consumption	Pressure
C2	Underground water exploitation	State
C3	Water resources	State
C4	Lake surface	State
C5	Water supply restrictions	State
C6	Water in reservoirs	Response
C7	Number of purification waterworks	Response
C8	Prize of water	Response

COAST AND SEA ENVIRONMENT		
	Indicator	**Type**
D1	Coastal industrial spaces	Pressure
D2	Number of hotel spaces in coastal towns	Pressure
M1	Population density	Pressure
D3	Dangerous substances sea traffic	Pressure
D4	Commercial sea traffic	Pressure
D5	Fishing Boats Gross Register Tons	Pressure
D6	Bathing water quality	State
D7	Coastal valuation	State
D8	Coastal erosion areas	State
M4	Designated or protected areas	Response
D9	Public investment in coastal improvement programmes	Response

GEOLOGICAL SUBSTRATE AND SOILS		
	Indicator	**Type**
E1	Erosion Risk	Pressure
E2	Canalised river parts	Pressure
E3	Land altered by mining activities	Pressure
E4	Relief roughness	State
E5	Height variation	State
M3	Natural character index	State
E6	Geological diversity	State
E7	High quality agricultural soils	State
E8	Contaminated land	State
E9	Unique or valuable geological elements	State
E10	Plans for reclamation of mining derelict land	Response
M4	Designated or protected areas	Response
E11	Contaminated land reclamation plans	Response
E12	Erosion control plans	Response

BIOSPHERE		
	Indicator	**Type**
F1	Timber production	Pressure
F2	Forest fire affected surface	Pressure
M1	Population density	Pressure
F3	Number of invader vegetal species and of alien fauna introduced	Pressure
F4	Hunting and fishing licenses per inhabitant	Pressure
M3	Natural character index	State
F5	Biodiversity	State
F6	Number of habitats included in Annexe I of Directive 92/43/CEE	State
F7	Number of habitats included in Annexe II of Directive 92/43/CEE	State
F8	Land cover diversity	State
F9	Habitat fragmentation	State
F10	Forest resources	State
F11	Forest Status	State
F12	Reforestation rate	Response
F13	Endangered species with recovering plans	Response
F14	Expenditure on compensation plans for damages caused by protected species	Response
M4	Designated or protected areas	Response

NATURAL HAZARDS		
	Indicator	**Type**
G1	Urban surface	State
M1	Population Density	State
G2	Flooding hazard	State
G3	Snow avalanche hazard	State
G4	Slope instability and subsidence hazard	State
G5	Seismic hazard	State
G6	Volcanic hazard	State
G7	Giant wave hazard	State
G8	Natural hazard action plans	Response

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ENVIRONMENTAL INDICATOR TECHNICAL ASSISTANCE SERIES. U.S. EPA AND FLORIDA CENTER FOR PUBLIC MANAGEMENT OF FLORIDA STATE UNIVERSITY. OCTOBER 1996.

SUMMARY LISTING OF RECOMMENDED INDICATORS

CRITERIA	INDICATORS
WATER QUALITY: GROUNDWATER	- Total Pounds of Toxic Chemicals Discharged to Groundwater - Number of Leaking Underground Storage Tanks
WATER QUALITY: SURFACE WATER	*Subissue: General* - Miles/Acres (or Percent) of Waterbodies Meeting or Exceeding Designated Use - Index of Biotic Integrity - Oregon Water Quality Index *Subissue: Nutrients* - Total Nitrogen Concentration - Total Phosphorus Concentration *Subissue: Pathogens* - Shellfish Growing Water Classification *Subissue: Pesticides* - Loadings of Pesticides *Subissue: Soil Erosion and Sedimentation* - Soil Erosion Rates - Total Suspended Particles *Subissue: Toxics/Metals* - Total Pounds of Toxic Chemicals Discharged to Surface Water - Concentration of Pollutant Compounds in Tissue Samples of Selected Target Species
WATER QUALITY: DRINKING WATER RESOURCES AND WATER AT THE TAP	*Subissue: General* - Miles/Acres (or Percent) of Waterbodies Meeting Drinking Water Designated Use - Population (or Percent of Population) Served by Community Water Systems with No Violations of Maximum Contaminant Level Standards - Number (or Percent) of Community Water Systems with Source Water Protection Programs *Subissue: Nutrients* - Population (or Percent of Population) Served by Community Water Systems with No Violations of Nitrate Maximum Contaminant Level Standards *Subissue: Pathogens* - Population (or Percent of Population) Served by Community Water Systems with No Violations of Microbiological Maximum Contaminant Level Standards *Subissue: Pesticides* - Population (or Percent of Population) Served by Community Water Systems with No Violations of Pesticide Maximum Contaminant Level Standards *Subissue: Toxics/Metals* - Population (or Percent of Population) Served by Community Water Systems with No Violations of Metal Maximum Contaminant Level Standards - Population (or Percent of Population) Served by Community Water Systems with No Violations of Toxics Maximum Contaminant Level Standards
WATER QUANTITY	*Subissue: Water Use by Category* - Total Water Withdrawals by Use (Public Supply, Domestic, Commercial, Irrigation, Livestock, Industrial, Mining, and Thermoelectric)

CRITERIA	INDICATORS
AIR POLLUTANTS	*Subissue: Carbon Monoxide* - Carbon Monoxide Emissions - Number of Carbon Monoxide Nonattainment Areas and Their Corresponding Population *Subissue: Lead* - Lead Emissions - Number of Lead Nonattainment Areas and Their Corresponding Population *Subissue: Nitrogen Dioxide* - Nitrogen Oxide Emissions - Number of Nitrogen Dioxide Nonattainment Areas and Their Corresponding Population *Subissue: Ozone* - Number of Ozone Nonattainment Areas and Their Corresponding Population *Subissue: Particulate Matter (PM-10)* - Particulate Matter (PM-10) Emissions - Number of Particulate Matter (PM-10) Nonattainment Areas and Their Corresponding Population *Subissue: Sulfur Dioxide* - Sulfur Dioxide Emissions - Number of Sulfur Dioxide Nonattainment Areas and Their Corresponding Population *Subissue: Volatile Organic Compounds* - Volatile Organic Compounds Emissions *Subissue: Pollutant Standard Index* - Number of Pollutant Standard Index Days Greater Than 100
TOXIC AIR POLLUTANTS	*Subissue: Organic and Inorganic Chemicals* - Hazardous Air Pollutants with the Largest Releases to Air - Releases of Known or Suspected Carcinogens to Air *Subissue: Heavy Metals* - Toxic Releases to Air of Heavy Metals and Metal Compounds
CLIMATE CHANGE	*Subissue: Carbon Dioxide* - Carbon Dioxide Emissions - Carbon Dioxide Concentrations (ppm by Volume) in the Earth s Atmosphere *Subissue: Greenhouse Gases* - Emissions of Greenhouse Gases - Mean Average Surface Temperature
STRATOSPHERIC OZONE DEPLETION	*Subissue: Greenhouse Gases* - Emissions of Stratospheric Ozone-Depleting Substances - Atmospheric CFC Concentration (ppt)
ATMOSPHERIC DEPOSITION	*Subissue: Acidification* - Emissions of Sulfur Dioxide and Nitrogen Oxides - Quantity of Sulfate and Nitrate Ion Deposition *Subissue: Heavy Metals* - Toxic Releases to Air of Heavy Metals and Metal Compounds
INDOOR ENVIRONMENTS	*Subissue: Lead* - Blood Lead Levels in Children *Subissue: Radon* - Indoor Radon Levels
PESTICIDES	*Subissue: Ecosystem Impacts* - Pesticide Levels in Selected Waters or Selected Crops - Use of Alternatives to Pesticides *Subissue: Residues in Food* - Number and Level of Pesticide Residues Found in Food
ACCIDENTAL RELEASES	*Subissue: Hazardous Releases* - Number of Incidents Involving Hazardous Substances and Quantity Released - Number of Injuries and Fatalities Involving Accidental Releases of Hazardous Substances *Subissue: Radioactive Releases* - Number of Incidents Involving Radioactive Substances and Quantity Released
RADIATION	*Subissue: High-level Radioactive Waste* - Volume and Radioactivity of High-level Radioactive Waste Subissue: Low-level Radioactive Waste - Accumulated Volume and Radioactivity of Low-level Radioactive Waste *Subissue: Spent Nuclear Fuel* - Mass and Radioactivity of Commercial Spent Nuclear Fuel

CRITERIA	INDICATORS
SOLID WASTE	- Solid Waste Materials Generated by Sector, Type of Material, and Per Capita - Volume of Industrial Solid Waste Generated - Amount of Solid Waste Landfilled, Recycled, or Incinerated - Amount and Type of Material Recycled Annually
HAZARDOUS WASTE	*Subissue: Hazardous Waste Management* - Amount of Hazardous Waste Managed by Type of Method *Subissue: Volume of Hazardous Waste* - Tons Per Year of Hazardous Waste Generated
ECOSYSTEMS	*Subissue: Biodiversity* - Plant and Animal Diversity - Percent of River and Stream Miles Designated as Healthy Using Biological Assessments *Subissue: Habitat/Land Cover* - Acres of Protected/Managed Lands *Subissue: Place Based Indicators of Ecosystem Health* - Waters Meeting Aquatic Life Designated Use - Estuarine Eutrophication Conditions - Change in Annual Wetland Acreage by Type *Subissue: Threatened and Endangered Plants, Animals, and Aquatic Species* - Species at Risk (Aquatic, Terrestrial, Plant) - Selected Indicator Species of Ecosystem Health
LAND USE/LAND COVER	- Changes in Major Land Cover Categories
FOOD SAFETY	- Waters Meeting Fish Consumption and Shellfish Harvesting Designated Uses
USE AND MANAGEMENT OF NATURAL RESOURCES	*Subissue: Energy Resources* - Energy Consumption by Sector, by Type of Energy, and Per Capita Usage - Renewable Energy Consumption by Sector, by Type of Energy, and Per Capita Usage *Subissue: Fisheries* - Annual Weight of Commercial Fish and Shellfish Landings *Subissue: Forest Resources* - Timber Harvest Trends - Changes in Forest Land by Acres, Type, and Age Class Subissue: Public Lands and Open Space - Acres of Public Lands Purchased/Managed for Preservation or Conservation *Subissue: Soil Resources* - Acreage Tilled Under Best Management Practices *Subissue: Water Recreation* - Percentage of Waters That Meet Swimmable or Recreational Designated Use

DEVELOPMENT INDICATORS.
MEASURING DEVELOPMENT PROGRESS: A WORKING SET OF CORE INDICATORS.
(OECD 1999)

GOAL	INDICATORS
Environmental sustainability and regeneration	- Countries with National Sustainable Development Strategies - Population with Access to Safe Water - Intensity of Freshwater Use - Biodiversity: Land Area Protected - Energy Efficiency: GDP per Unit of Energy Use - Carbon Dioxide Emissions

INDICATORS FOR SUSTAINABLE DEVELOPMENT: FRAMEWORK AND METHODOLOGIES. METHODOLOGY SHEETS. CATEGORY: ENVIRONMENTAL UNITED NATIONS DEPARTMENT FOR POLICY CO-ORDINATION AND SUSTAINABLE DEVELOPMENT (PDCSD). 1996

AGENDA 21 CHAPTER	DRIVING FORCE INDICATORS	STATE INDICATORS	RESPONSE INDICATORS
Chapter 9: Protection of the atmosphere	- Emissions of greenhouse gasses - Emissions of sulphur oxides - Emissions of nitrogen oxides - Consumption of ozone depleting substances	- Ambient concentrations of pollutants in urban areas	- Expenditure on air pollution abatement
Chapter 10: Integrated approach to the planning and management of land resources	- Land use change	- Changes in land condition	- Decentralized local-level natural resource management
Chapter 11: Combating deforestation	- Wood harvesting intensity	- Forest area change	- Managed forest area ratio - Protected forest area as a percent of total forest area
Chapter 12: Managing fragile ecosystems: combating desertification and drought	- Population living below poverty line in dryland areas	- National monthly rainfall index - Satelite derived vegetation index - Land affected by desertification	
Chapter 13: Managing fragile ecosystems: sustainable mountain development	- Population change in mountain areas	- Sustainable use of natural resources in mountain areas - Welfare of mountain populations	
Chapter 14: Promoting sustainable agriculture and rural development	- Use of agricultural pesticides - Use of fertilizers - Irrigation percent of arable land - Energy use in agriculture	- Arable land per capita - Area affected by salinization and waterlogging	- Agricultural education
Chapter 15: Conservation of biological diversity		- Threatened species as a percent of total native species	- Protected area as a percent of total area
Chapter 16: Environmentally sound management of biotechnology			- R & D expenditure for biotechnology - Existence of national biosafety regulations or guidelines
Chapter 17: Protection of the oceans, all kinds of seas and coastal areas	- Population growth in coastal areas - Discharges of oil into coastal waters - Releases of nitrogen and phosphorus to coastal waters	- Maximum sustained yield for fisheries - Algae index	
Chapter 18: Protection of the quality and supply of freshwater resources	- Annual withdrawals of ground and surface water - Domestic consumption of water per capita	- Groundwater reserves - Concentration of faecal coliform in freshwater - Biochemical oxygen demand in water bodies	- Waste-water treatment coverage - Density of hydrological networks
Chapter 19: Environmentally sound management of toxic chemicals		- Chemically induced acute poisonings	- Number of chemicals banned or severely restricted
Chapter 20: Environmentally sound management of hazardous wastes	- Generation of hazardous wastes - Imports and exports of hazardous wastes	- Area of land contaminated by hazardous wastes	- Expenditure on hazardous waste treatment
Chapter 21: Environmentally sound management of solid waste and sewage-related isues	- Generation of industrial and municipal solid waste - Household waste disposed per capita		- Expenditure on waste management - Waste recycling and reuse - Municipal waste disposal
Chapter 22: Safe and environmentally sound management of radioactive wastes	- Generation of radioactive wastes		

EUROPEAN ENVIRONMENT AGENCY.
LIST OF CONTENTS 1999
YEARLY INDICATOR REPORT; DRAFT

List of chapters

After each chapter the frecquency is indicated. Rotating means that the chpater is part of one theme (like nature and biodiversity) that is covered by a series of topics (such as wetlands , dry grasslands , forest) of which aech year one will be covered.

Sectors/Driving forces	1ª Agriculture (yearly) 1b Indutry (yearly) 1c Energy (yearly) 1d Transport /yearly
Issues	2. Climate change /yearly) 3. Stratospheric ozone depletion (bi-annually?) 4. Acidification (yearly) 5. Summersmog (yearly) 6. Waste (yarly, with slightly changing topics) 7 Water quantity (rotating) 8. Eutrophication (rotating) 9. Wetlands (rotating) 10. Integrated Coastal Zone
Horizontal responses and integration tools	11. Environmental taxes (rotating)
Once only chapters:	12. Total Material Requirement of the European Union (once only)

Other possibility for a once only chapter would be Tourism:status of indicator development .

Detailed list of indicators

The list of contents of the first edition of the EEA yearly indicator report is organised according to main policy questions for each of the environmental issues or societal setors. Next to each policy question an indicator is given that comes close to giving an appropiate anscwe. The philosophy behind starting with a list of policy questions in making a list of indicators, is the idea that it is easier and more straightforward for users to comment on opolicy questions and to identify main and secondary questions in relation to the use of the indicator set. The selection of main questions has been done for a target group of high level policy makers and parliamentarians.

The two columns at the right hand side characterise the indicators by comparing with the DPSIR Driving forces Presures-State-Impact-Response) framework and th EEA typology of indicators. (A = straightforward indicators protraying a development in a variable; B= performance indicators linking A type information with targets; C= efficiency indicators, linking Pressures with Driving forces).

Potential headline indicator are marked in yellow/gray in print. /Headline indicators receive a special treatment in the lay-out of th chapter to focus attention on these and could be used to summarise main findings at the very beginning of the report)

Chapter 1: sectoral developments

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
AGRICULTURE				
How much does the agriculture sector contribute to environmental problems?	/environmental profile of the sector). Share of the agriculture sector in total emissions of NH_3, CO_2, CH_4 and N_2O, share in final energy consumption in 1996.		P	A
Has the agriculture sector been successful in becoming more environmentally efficient?	Agricultural CH_4, CO_2, emissions, and fertiliser and pesticide use versus GVA in agriculture sector. (1980-1996-97).	Instead of GVA, harvested biomass (wuppertal data) might ve used as physical activity index.	DP	C
What have been the developments in environmentally relevan aspects of agriculture? a) with regard to eutrophication	Number of levestock (cattle, pigs, sheeps+goats) (1980-1997)		D	A
	Consumption of fertilisers per area of agric. Land (1980-1997)		D	C
b) water stress	Irirgated land, as % of land area (1980-1997)		D	A
	Consumption of pesticides (active ingredients) (1980-1997)			
c) with regard to less burdening farming systems	Area with organic farming as % of total agricultrual area (1985-1997)	Positive indicator	D	A
INDUSTRY				
How much does the industry sector contribute to environmental porblems?	(environmental profile of the sector). Share of the industry sector in total emissions of CO_2, SO_2, NO_x, NMVOCs, and ideally waste, share in final energy use in 1996.		P	A
Has the industry sector been successful in becoming more environmentally efficient?	Industrial CO_2, SO_2, NO_x, emissions, final energy consumption versus the index of industrial production (1980-1996/7)		DP	C
Wich brances in industry require special attention?	Emissions of CO_2, SO_2, NO_x, and energy consumption for selection of industry branches, one year, combined with value added and employed persons.	Data from Eurostat s Namea project		
ENERGY				
How mech does the energy sector (s.s) contribute to en vironmental problems?	(environmental profile of the sector). Share of the energy sector in total emissions of CO_2, CH_4, N_2O , SO_2, NO_x, eventually VOCs and ideally waste in 1996		P	A
Has the energy sector (s.s.) been succesful in becoming more environmentally efficient?	CO_2, SO_2, NO_x, emissions versus GVA in energy sector and electricity produced. (1980-1996/7)		DP	C
Have we been successful in reducing the total use of energy?	Gross Inland Consumption versus GDP.		D	C
Is the share of renewables increasing?	Share of renewables in Gross Inland Consemption	Try a presentation in vhich the share of all fuels in Gross Inland Consumption is shown as an area graph, with as a subdiagram n line graph the share of renewables (and maybe also nuclear in another sugdiagram). The sahre of all fuels is linked with CC.	D	B
Are prices developing in a direction that stimulates more efficiency of energy use?	Overall price for fuels and electricity in dindustry (without VAT), for transport (without VAT) and for households (all taxes included)		D	A
Are taxes on fossil fuel carriers developing n a direction that	Tax on energy carriers, as %of total taxes (1980-1996)	Alternative: Taxes as % of price for different energy carriers.	R	A

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
stimulates energy-saving?				
TRANSPORT				
How much does the transport sector contribute to environmental problems?	(environmental profile of the sector). Share of the transport sector in total emissions of CO_2, SO_2, NO_x, NMVOCs, PM10 and final enrgy consumption in 1996.	TERM indicators 1 (main) + 2	P	A
Has the transport sector been successful in becoming more environmentally efficient?	CO_2, NO_x, NMVOC emissions versus pass km (evt vehicle km) in passenger transport and tonkm in goods transport, (1980-1996/7)	TERM indicator 3 /main), to be imporved in future with PM10	DP	C
What is the final result of improving fuel efficiency in transport?	Overall fuel efficiency for passenger and freight transport per km	TERM indicator 8(main), with assessment of influence of technical measures and volume developments.	D	C
Has the modal split developed towards more environmentally friendly modes?	Three indicators: -passenger km by mode - freight transport by mode - passenger transport by air (in mln passengers)	TERM inidicator 15(main) TERM indicator 16(main) Modes: Passengers: cars, buses, trains, Goods: road, rail, wterways, pipelines.? Is goods transport by air in EEA area possible? As positive indicator the development in the amount of bicycle km in a selection of countries can be added.	D	A
Are fuel prices developing in a direction stimulating less use of road transport?	Fuel price (leaded super, unleaded super, in current Euro)	TERM indicator 22 (21 not being feasible on the short term)	D	A
Are tases on transport developint in a direction that stimulate less use of (road) transport?	Tases on transport, as % of total taxes (1980-1996)	TERM indicator 23. Eurostat data.	R	A

Other possibilities for sectors: tourism, fisheries, households, not included in the 1999 edition.

Overalll dirving force indicators like population development, development of GDP are included already in many other publications and not repeated here.

Chapter 2: Climate change

Isussue/question	Indicator	Notes and assessment	DPSIR	ABCtype
Kyoto targets reached?	Aggregated ghg emissions (in GWP, 6 gases), vx target with country detail (1990-1996)	Progress or not?	P	C
Do all sectors contribute?	CO2 emissions by fuel (1990-1996)	5EAP sectors; also emissions of threee gases as GWP possible, but better to concentrate on main gas. Area diagram. Link tosectoral developments	P	A
Is fuel shift effective?	CO2 emissions by fuel (1990-1996)	Link to energy policy	P-r	A
How is the main (public) indicator of climate change temperature developint?	European average temp (1900-1998)	In text some words on precipitation, ice coverage, sea level rise, glacier retreat, etc. IF glacier retreat gives a good once-only diagram this can be included.	S	A
Have economic instruments been brought into place?	CO2 taxes in Euro, overview of countries having these.	Compare with tax indicator in energy	R	A

Chapter 3: Stratospheric Ozone Depletion

Isussue/question	Indicator	Notes and assessment	DPSIR	ABCtype
Policy issue: Ensurign that the developing countries meet the 1999 freeze on CFCs, the 2002 freeze on halons and future reductions.	CFC production/consumption/export/import (inclu CC14 and methylchloroform)	The first four pressure indicators should be combined in a frame.	P	B
Idem, and Discourge the use of HCFs as replacements for CFCs, halons and CTC. Gradually thighten HCFC controls.	HCFC production/consumption/export/import (may include banks)	The first four pressure indicators should be combined in a frame.	P	B
Idem.	Halons production/consumption/export/import (may include banks)		P	B
Policy issue: Prevent the increased use of metrylbromide in developing countries. Promote its phase out.	Methylbromide production/consumption/export/import		P	B
	Total atmospheric Bromine	The following four State indicators also to be combiend in one frame.	S	A
	Total atmospheric active Chlorine		S	B
	Ozone column in Europe		S	A
	Average UV for Europe		S	A
Policy issue: Recognise the interaction between the Montreal an d Kyoto portocols. Identify a coherente policy on alternative technologies.	% contribution to radiative forcing of Montreal protocol substances, or potential impact of GHG on strat ozone or temperature.	Climate change-starat ozone interaction indicator needs further development	P-S	C
Policy issue: Promote save recovery and destruction of halons and CFCs, especially in developing countries; take effective action against CFC and halon smuggling; Take effective action to prevent the production and marketing of new ozone depleting sustances; Stop the dumping of second hand CFC using wquipment in developing countries.	Response indiccator under consideration.		R	

Note: no Impact indicator proposed because the impact assessments are not stable enough for an indicator.

Chapter 4: Acidification. (might be combiend with tropospheric ozone under addition of (an) urban air quality indicator (s))

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
Will emission reduction targets of the CLRTAP/national emission ceilings be reached?	Emission of SO2, vs target (+ country detail)	Distance to target	P	C
	Emission of NOx, vs target (+ country detail)	Distance to target	P	C
	Emission of NOx, vs target (+ country detail)	Distance to target	P	C
	Emission of NH3, vs target (+ country detail)	Distance to target	P	C
Are acidifying emissions still decoupled form economic development	Aggregate indicarot of the three substances next to DDP		P	B
How far are we inportecting the environment against acid precipitation?	Area with exceedance of cirtical loads of acid. Substances.		S	B
Wat have been the most successful instruments/measures in reducing emissions?	Response indicator under consideration:could be the effect of various measures on emissions of SO2 vx reference scenario.		R	C

Chapter 5: Troposheric Ozone

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
Will emission reduction targets of the CLRTAP/national emission ceilings be reached?	Emission of NOx, vs target (+ country detail)		P	B
	Emission of VOC, vs target (+ country detail)	Distance to target	P	B
Do all sectors contirbute?	VOC emissions per sector (1990-1996)	5EAP sectors; Area diagram. Link to sectoral developments	P	A
Are emissions of ozone precursors linked with economic development?	Aggregate indicator of the substances (+NO, +CO?) next to GDP	Aggregation key?	P	C
And how in that with transport?	Ozone precursor emissions from transport per transport volume (in tonkm and passkm)	NOTE: This is part of an indicator in the sector transport. We could refer.	P	C
How far are we protecting the environment aginst the effects of photochemical substances?	Population potentially exposed to 03>60 ppb 8 h average.	Maybe together with an effect on health indicator (FEV, hospital admittance)	I	C
Waht reduction strategies and measures have actually been taken by the countries and what where the costs? Compared with earlier projections/analysis.	Response indicator under consideration. Could be the effect of various measures on emissions of Nox vs reference scenario. (if data can be found)		R	

Chapter 6: waste

generation	Indicator	Notes and assessment	DPSIR	ABC type
How much waste becomes available each year? (and what do we do with it?)	Total waste generation	Depending on outcomes OECD/Euorstat questionnaire	P	A
How is the amount of household waste developing?	Development of the generation of waste: specific waste streams from households	As amounts of household waste are less reliable, some important components of household waste will be presented.	P	A
Is the amount of industrial waste being decoupled from the level of activity? (Is prevention of waste occurring?)	Development of the generation of waste: manufacturing waste versus index of industrial production	Depending on outcomes OECD/Eurostat questionnaire	P	C
treatment				
How much of biodegradable household waste is still ending up on waste dumps?	Landfill of biodegradable waste on munincipal landfills.		P-R	A
How is the recycling of packaging waste developing?	Teatment of packaging waste		P-R	A
How is the re-use/recycling of construction and demolition waste developing?	Teatment of construction and demolition waste		P-R	A
Where does sludge from waste water treatment installations end up?	Destination and treatment of sewage sludge (1984-1996)	Categories: reuse in agriculture, landfill, incineration	P-R	A
Are taxes being used to correct the negative signal given by relatively lower prices for landfilling?	Taxes on landfilling (use of taxes, and tax levels)	Categories: reuse in agriculture, landfill, incineration	R	A

Hazardous waste left for 2000 edition. Other topics for 2000: waste from electronic equipment, and end-of-life vehicles.

Chapter 7: water quantity

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
Does oveexploitation of groundwater take place? Where and how severe?	Areas with water scarcity/water stress (as Q90)	Map!	S	A
What are the causes?	Intensity of use of the water resource (abstraction as % of total renewable freshwater resources)	(By country grouping)	P	A
Is water conservation and sustainable use integrated in other policies? (or How do varioous sectors contribute to the problem?)	Water use by sectors/Water abstraction by municipalities/public water supply.	(By country groupings)	D-P	A
What is the scope for economic instruments to encourage water conservation?	Water price-leakage	(By country groupings)	R	A

Selected headline indicator is surrogate for Total water abstraction in Europe .

Chapter 8: Eutrophication

Isussue/question	Indicator	Notes and assessment	DPSIR	ABCtype
How is the total load of N and P in Europe/a sub-area developing?	No indicator yet	Refer to consumption of fertilisers, agricultural nutrient balances for partial picture of developments.		
What have been contributions by main source categories?	Source appointment of loading with N and P	Maybe with time series for Nox and NH3 emissions.	P	A
Has the balance of in-and outputs of mutrients in agriculture been realised?	Nutrient balanes (in agriculture)		P	A
Is the incidence of mitrate concentrations > 50mg/l in surface waters decreasing?	Nitrate in rivers		S	C
How big is the area where groundwater quality aims for nitrate and phosphate are exceeded?	Nitrate and phosphate in groundwater		S	C
What is the trend in marine eutrophication?	Nitrate in coastal waters		S	A
Are targets for N and P flows in the seas being reached?	Inflow of N and P in Northsea, Baltic Sea (and mediterranean Sea) compared with reduction targets		P	C
What has been the effect of the UWWT-directive?	Waste water treatment, 1980-1996		R	A
Continued ....(How did that influence the emissions?)	Point source emissions (1980-mid 1990s)		P	A
Continued ....(What other measures have been taken?)	Consumption of phosphate in detergents (¿)	Positive indicator	P	A

The most appropriate headline indicator would be Total load with N and P in Europe , but as this indicator is not available, the policy relevant indicator Nitrate concentration in rivers is proposed as headline indicator for this chapter.

Chapter 9: Wetlands (NOTE: contents list based on Peter s notes from meeting with ETC/NC. The ETC will soon send further suggestions and more precise descriptions of the indicators. More indicators like % of population in designated areas and species diversity in 50km grid could be considered.)

Isussue/question	Indicator	Notes and assessment	DPSIR	ABC type
How much wetlands have we already lost or damaged?	Loss of wetlands		S	A
How much wetlands (of international importance) are portected form damage or loss?	%of wetlands in designted areas		R	A
And is with this the existence and distribution of the associated flora and fauna ensured?	Trends in waterfowl	Several indicators	S	A

Chapter 10: Integrated Coastal Zone Management

Isussue/question	Indicator	Notes and assessment	DPSIR	ABCtype
What is the status of developing ICZM schemes?	% of coastline per country for which ICZM is established/there is continuous progress towards/discontinuous or short term progress towards/no progress.		R	A
What is the status of knowledge concerning integrated managemetne of the coasts?	% of coastline per country for which integrated analyses and plans exist regarding the coast/sea relations and management		R	A
What is the status of making integrated plans?	% of coastline per country for which an integrated approach has been/is being applied in developing physical planning, indluding environment and economy		R	A
What is the status in integrating those that will execute/are executing the plans?	% of coastline per country for which administrative bodies are working together under the umbrella of ICZM.		R	A
What is the status of involving the inhabitants in planning	% of coastline per country in which ICZM projects are being executed..		R	A

Chapter 11: Environmental taxes (rotating)

Isussue/question	Indicator	Notes and assessment	DPSIR	ABCtype
How many?	Nr of taxes, split by sector	Evaluation a bit difficult: the aim is not more and more in numbers, but still it gives a rough first picture of progress.	R	A
How much revenue?	Revenue from taxes as % of total tax income (energy, environment, transport)	With a supplementary small indicator showing the development of taxes on all production factors (1980-1997), compared with the total.	R	A
Progress in ecotax reform?	Table summarising developments in European countries. % of tax revenue shifting from labour to environment.		R	A

Summary of the list of headline indicators per chapter: Peter bosch, 17-03-1999

ANNEXE I:
LIST OF PRIMARY INDICATORS

ANNEXE II:
SOME SYSTEMS OF
ENVIRONMENTAL INDICATORS

ANNEXE III:
LIST OF SOME ENVIRONMENTAL DATA SOURCES WITH EUROPEAN COVERAGE

- 1:1.000.000 Soil Geographical Database (European Soil Bureau)
- 1:250.000 Georeferenced Soil Database of Europe (European Soil Bureau)
- AIRBASE
- APIS, Air Pollution Information System
- Common Database on Designated Areas
- CORINAIR 90/94
- CORINE BIOTOPES DATABASE
- CORINE BIOTOPES SITES DATABASE
- CORINE COASTAL EROSION DATA BASE
- CORINE Land Cover 10 km statistics
- CORINE Land Cover database
- CORINE Land Cover NUTS 3 statistics
- CORINE land resources data base
- CORINE SOIL EROSION RISK DATA BASE
- CORINE/WATER: CORINE information system / water
- Digital Map of European Ecological Regions; DMEER
- Emissions and Concentrations of other Pops
- European Atlas of Flora
- European Atlas of Mammals
- European Atlas on Amphibians and Reptiles
- European Breeding Birds Atlas
- European Earthquake Catalogues
- European Invertebrates Survey
- European Network for Forest Damage Monitoring
- Forest Fires. Total area burned
- GIRAFE, Guide d'Information sur les Résaux de Qualité de l'Air Fonctionnant en Europe
- GISCO: Geographic Information System of the European Commission, EUROSTAT
- GTOPO30. Global 30 arc second elevation data set. USGS
- HYDRO 1K elevation derivative database. USGS
- Large Rivers Database
- NATURA 2000 database
- Pesticides in groundwater
- Prototype Nationally Designated Protected Areas Data base; WCMC
- REGIO: Regional Data Bank, EUROSTAT