

## V. TECHNICAL ANNEX

## GENERAL INFORMATION

### Country region codes used are as follows:

CAN: Canada	FIN: Finland	NOR: Norway
MEX: Mexico	FRA: France	POL: Poland
USA: United States	DEU: Germany	PRT: Portugal
JPN: Japan	GRC: Greece	SVK: Slovak Republic
KOR: Korea	HUN: Hungary	ESP: Spain
AUS: Australia	ISL: Iceland	SWE: Sweden
NZL: New Zealand	IRL: Ireland	CHE: Switzerland
AUT: Austria	ITA: Italy	TUR: Turkey
BEL: Belgium	LUX: Luxembourg	UKD: United Kingdom
CZE: Czech Republic	NLD: Netherlands	DAC: OECD Development Assistance
DNK: Denmark		Committee Member countries

### ➤ Country aggregates

OECD: All OECD Member countries, which include the OECD Europe — i.e. Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey and United Kingdom — plus Canada, Mexico, the United States, Japan, Korea, Australia and New Zealand.

OECD\* Partial OECD total.

### ➤ Signs

..: n.a. not available	. decimal point	% percentage
- nil or negligible	n. app. not applicable	USD US dollar

### ➤ Abbreviations

BOD - biochemical oxygen demand	HCFC - hydrochlorofluorocarbon	ODA - official development assistance
Cap - capita	HM - heavy metal	PAC - pollution abatement & control
CFC - chlorofluorocarbon	Inh - inhabitant	PCB - polychlorinated biphenyls
CO - carbon monoxide	kcal - kilocalorie	PFC - private final consumption
CO <sub>2</sub> - carbon dioxide	l - litre	Pop - population
CH <sub>4</sub> - methane	Mtoe - million tonnes of oil equivalent	ppb - parts per billion
DAC - Development Assistance Committee	N - nitrogen	PPP - purchasing power parities
GCV - gross calorific value	N <sub>2</sub> O - nitrous oxide	ppt - parts per trillion
GDP - gross domestic product	NO <sub>x</sub> - nitrogen oxides	SO <sub>x</sub> - sulphur oxides
GNP - gross national product	NMVOG - non-methane volatile organic compounds	t - tonne
GHG - greenhouse gas		veh-km - vehicle-kilometre

### ➤ Units

cal - calorie (1 cal = 4.1868 joules)	kWh - kilowatt hour	m <sup>3</sup> - cubic metre (1 m <sup>3</sup> = 1.3079 cubic yards)
Dobson - see Ozone Layer Depletion notes	(1 kWh = 103 Wh = 0.8598 kilocalories)	Toe - tonne of oil equivalent
g - gram (1 g = 0.0353 ounces)	litre - (1 l = 1 dm <sup>3</sup> = 0.001 m <sup>3</sup> )	(1 Toe = 10 <sup>7</sup> kcal = 41.868*10 <sup>9</sup> joules)
µg - microgram (1 µg = 10 <sup>-6</sup> g)	km - kilometre	tonne - metric ton
mg - milligram (1 mg = 10 <sup>-3</sup> g)	(1 km = 1 000 m. = 0.6214 miles)	(1 t = 1 000 kg = 0.9842 long ton = 1.1023 short ton)
ha - hectare (1 ha = 0.01 km <sup>2</sup> )	km <sup>2</sup> - square kilometre	
kg - kilogram	(1 kg = 1 000 g = 2.2046 pounds)	
	(1 km <sup>2</sup> = 0.3861 square miles)	

### ➤ Per capita values

All per capita information uses OECD and Food and Agriculture Organization (FAO) population data.

### ➤ Per unit of GDP values

All per unit of GDP information uses OECD GDP data at 2000 prices and purchasing power parities (PPPs). The use of PPPs appears preferable to the use of exchange rates in conjunction with environmental questions, as the objective of comparing measures of economic activity such as GDP is to reflect underlying volumes and physical processes as closely as possible.

PPPs are defined as the ratio between the amount of national currency and the amount of a reference currency needed to buy the same bundle of consumption goods in the two countries. In this publication, the reference currency is USD. Typically, PPPs differ from exchange rates as the latter reflect not only relative prices of consumer goods but also a host of other factors, including international capital movements, interest rate differentials and government intervention. As a consequence, exchange rates exhibit much greater variations over time than PPPs.

## CLIMATE CHANGE

- ◆ A number of gases have direct effects on climate change and are considered responsible for a major part of global warming: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), methyl bromide (CH<sub>3</sub>Br) and sulphur hexa fluoride (SF<sub>6</sub>). Other air pollutants, such as NMVOC, NO<sub>x</sub> and CO, have indirect effects on climate change as their reactions in the atmosphere result in the production of tropospheric ozone which effectively a GHG. Sulphur-containing trace gases also play a role. A major part of these emissions stems from combustion of fossil fuels and biomass. Other sources are industrial processes, agriculture and changes in land use.

### CO<sub>2</sub> EMISSION INTENSITIES

Data sources: IEA-OECD

- ◆ Data refer to gross direct emissions: CO<sub>2</sub> removal by sinks, indirect emissions from land use changes and indirect effects through interactions in the atmosphere are not taken into account.
- ◆ Data refer to CO<sub>2</sub> emissions from fossil fuel combustion. Man-made emissions by other sources (industrial processes, biomass burning) are not included.
- ◆ Data are estimates based on the default methods and emission factors from the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* and on the IEA-OECD data for total

primary energy supply.

- ◆ Oil and gas for non-energy purposes such as feedstocks in the chemical and petrochemical industries are excluded.
- ◆ Oil held in international marine and aviation bunkers is excluded at national level; world emissions include marine and aviation bunkers, amounting to 463 million tonnes and 354 million tonnes in 2002.
- ◆ Further details on calculation methods and conversion factors can be found in *IEA-OECD (2004), CO<sub>2</sub> Emissions from Fuel Combustion, 1971-2002*.
- ◆ For details on fuel supply and energy prices see Energy notes.
- ◆ Energy prices: % change refer to 1980-2002 period.

### GREENHOUSE GAS EMISSIONS

Data sources: UNFCCC

- ◆ Data refer to the sum of all six "Kyoto gases" expressed in CO<sub>2</sub> equivalents: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), Perfluorocarbons (PFCs); hydrofluorocarbons (HFCs), and sulphur hexa fluoride (SF<sub>6</sub>).
- ◆ Data do not directly relate to Kyoto targets; they refer to domestic emissions, i.e. emitted within the national territory, and exclude CO<sub>2</sub> emissions and removals from land-use change and forestry. They do not account for international transactions to purchase emission reduction units or certified emission reductions through the international market.

- ◆ Depending on the country commitment, the base year reference may differ from 1990 GHG emissions, e.g. base year is 1985-1987 for Hungary and 1988 for Poland.
  - ◆ The individual country targets for Annex I Parties as listed in the Kyoto Protocol's Annex B, add up to a total cut in greenhouse-gas emissions of at least 5% from 1990 levels in the commitment period 2008-2012
- OECD • OECD total is for Annex I countries, and therefore does not include Korea, Mexico and Turkey.

### GREENHOUSE GAS CONCENTRATIONS

Data sources: CDIAC (Carbon Dioxide Information Analysis Center).

- ◆ Although gas concentrations at any given time vary among monitoring sites, the data reported reflect global trends. CO<sub>2</sub> data refer to Mauna Loa, Hawaii (19°32' N, 155°35' W). Data for other gases are from values monitored at Cape Grim, Tasmania (45°41' S,

144°41' E) under the Atmospheric Lifetime Experiment (ALE) and Global Atmospheric Gases Experiment (GAGE).

- ◆ Total gaseous chlorine concentrations: calculated by multiplying the number of chlorine atoms in each of the chlorine-containing gases (carbon tetrachloride (CCl<sub>4</sub>), methyl chloroform (CH<sub>3</sub>CCl<sub>3</sub>), CFC-11 (CCl<sub>3</sub>F), CFC-12 (CCl<sub>2</sub>F<sub>2</sub>), CFC-22 (CHClF<sub>2</sub>), and CFC-113 (C<sub>2</sub>Cl<sub>3</sub>F<sub>3</sub>)) by the concentration of that gas.

## OZONE LAYER DEPLETION

- ◆ Ninety six (96) chemicals are presently controlled by the Montreal Protocol, including: halo carbons, notably chlorofluorocarbons (CFCs) and halons, carbon tetrachloride, methyl chloroform (1,1,1 trichloroethane), hydrobromofluorocarbons (HBFCs), hydrochlorofluorocarbons (HCFCs), methyl bromide (CH<sub>3</sub>Br) and bromochloromethane (BCM).
- ◆ The phase out schedules for developed countries are as follows: phase out Halons by 1994; phase out CFCs, carbon tetrachloride, methyl chloroform, and HBFCs by 1996; reduce methyl bromide by 25% by 1999, 50% by 2001, 70% by 2003, and phase out by 2005; reduce HCFCs by 35% by 2004, 65% by 2010, 90% by 2015, and 99.5% by 2020, with 0.5% permitted for maintenance purposes only until 2030; phase out HBFCs by 1996 and phase out BCM immediately.

### Atmospheric lifetimes, emissions and ODP of halogen source gases\*

Halogen source gases	Lifetime (years)	2000 global emissions (1000 t/year)	Ozone Depletion Potential (ODP)
<i>Chlorine</i>			
CFC-12	100	130-160	1
CFC-113	85	10-25	1
CFC-11	45	70-110	1
Carbon tetrachloride	26	70-90	0.73
HCFCs	1-26	340-370	0.02-0.12
Methyl Chloroform	5	~20	0.12
Methyl chloride	1.3	3000-4000	0.02
<i>Bromine</i>			
Halon-1301	65	~3	12
Halon-1211	16	~10	6
Methyl bromide	0.7	160-200	0.38

\*includes both human activities and natural sources.

### OZONE DEPLETING SUBSTANCES

Data sources: UNEP Ozone Secretariat, Montreal Protocol on Substances that Deplete the Ozone Layer (<http://www.unep.org/ozone>)

- ◆ Consumption: production plus imports minus exports of controlled substances.

- ◆ Production: production minus the amount destroyed minus the amount entirely used as feedstock in the manufacture of other chemicals.
- ◆ Negative values for calculated production imply that quantities destroyed or export for feedstock uses exceeded production for that year. Similarly, negative values for calculated consumption indicate

## Technical Annex

that exports for the year exceeded production and imports, implying that the exports come from stockpiles.

- ◆ Data are weighted with the ozone depleting potentials of the substances.
- ◆ **CFCs**: Annex A Group I substances (chlorofluorocarbons).
- ◆ **Halons**: Annex A Group II substances (halons).
- ◆ **HCFCs**: Annex C Group I substances (hydrochlorofluorocarbons).
- ◆ **Methyl bromide**: Annex E.

- ◆ **Total consumption and total production** refer to CFCs, halons, other fully halogenated CFCs, carbon tetrachloride, methyl chloroform, HCFCs, HBFCs, bromochloromethane and methyl bromide.
- ◆ Regional totals include OECD Secretariat estimates; may not add up to the sum of individual countries due to internal OECD trade.
- ◆ Dotted lines (graphics) refer to data not available.
- KOR • Data refer to 2002.
- CHE • Data refer to 2002.
- OECD • Excludes Mexico, Korea and Turkey (Article 5 countries).

## STRATOSPHERIC OZONE

Data sources: Column ozone: WOUDC (World Ozone and Ultraviolet Radiation Data Center). Global ozone levels: Ozone Processing Team of NASA/Goddard Space Flight Center.

- ◆ Data refer to **total column ozone** (i.e. tropospheric plus stratospheric ozone) in Dobson units. Stratospheric ozone represents the majority of total column ozone, e.g. comprises on average about 90% of total column ozone in Canada. **Dobson unit**: measure used to estimate the thickness of the ozone layer. 100 Dobson units represent a quantity equivalent to a 1-mm-thick layer of ozone at 0 degrees Celsius and at a pressure of 1013 hectopascal (sea level).

- ◆ Ozone levels over selected cities: data presented are annual averages of daily values taken from the WOUDC database calculated by the OECD Secretariat.
- ◆ Global ozone levels: data are annual averages generated from daily ozone measurements. Ozone was measured by the Total Ozone Mapping Spectrometer (TOMS) on the Nimbus-7 (1979-1993) and the Earth Probe (1996-2002) satellites, referring to latitudes between 70° N and 70° S. At latitudes above 70°, ozone data are not collected during the winter months and there is increasing seasonal and interannual variability.

## AIR QUALITY

### SO<sub>x</sub> AND NO<sub>x</sub> EMISSIONS

Data sources: OECD Environmental Data Compendium 2004, UN-ECE EMEP, UNFCCC

- ◆ Man-made emissions only. SO<sub>x</sub> and NO<sub>x</sub>: given as quantities of SO<sub>2</sub> and NO<sub>2</sub> respectively.
- ◆ Excludes emissions from international transport (aviation, marine).
- ◆ Data may include provisional figures and Secretariat estimates.
- ◆ % change: change with respect to latest available year from 1990 on.
- MEX • SO<sub>x</sub> and NO<sub>x</sub>: No data available.
- USA • SO<sub>x</sub> and NO<sub>x</sub>: Excludes emissions from fires (SO<sub>x</sub>: 82280 tonnes in 2002, NO<sub>x</sub>: 309510 tonnes in 2002).
- KOR • SO<sub>x</sub> and NO<sub>x</sub>: No data available.

- AUS • NO<sub>x</sub>: excludes emissions from prescribed burning of savannas (1410330 tonnes in 2002).
- NZL • NO<sub>x</sub>: excludes emissions from prescribed burning of savannas (10 tonnes in 2002).
- CZE • SO<sub>x</sub> and NO<sub>x</sub>: 2002 expert estimates from EMEP.
- HUN • SO<sub>x</sub> and NO<sub>x</sub>: 1990, 2002: expert estimates from EMEP.
- LUX • SO<sub>x</sub> and NO<sub>x</sub>: 2002: expert estimates from EMEP.
- POL • SO<sub>x</sub> and NO<sub>x</sub>: 1990, 2002: expert estimates from EMEP.
- SVK • SO<sub>x</sub> and NO<sub>x</sub>: 1990, 2002: expert estimates from EMEP.
- TUR • SO<sub>x</sub>: expert estimates from EMEP.
- OECD • Secretariat estimates.

### Emission ceilings relating to the provision of article 3, paragraphs 1 and 10 of the Gothenburg protocol (a)

Emission ceilings relating to the provision of article 3, paragraphs 1 and 10 of the Gothenburg protocol (a)					Nitrogen oxide emissions (1 000 tonnes of NO <sub>x</sub> per year)				
Sulphur emissions (1 000 tonnes of SO <sub>2</sub> per year)					Nitrogen oxide emissions (1 000 tonnes of NO <sub>x</sub> per year)				
Party	Levels 1980	Levels 1990	Ceilings for 2010	% reductions for 2010 (base year 1990)	Protocol Status (b)	Levels 1990	Ceilings for 2010	% reductions for 2010 (base year 1990)	Party
Canada national *	4643	3236	..	..	S	2104	..	..	Canada *
PEMA (SOMA)	3135	1873	..	..		..	..	..	
USA *	..	..	..	..	R	..	..	..	USA *
Austria	400	91	39	-57%	S	194	107	-45%	Austria
Belgium	828	372	106	-72%	S	339	181	-47%	Belgium
Czech Republic	2257	1876	283	-85%	R	742	286	-61%	Czech Republic
Denmark	450	182	55	-70%	R	282	127	-55%	Denmark
Finland	584	260	116	-55%	R	300	170	-43%	Finland
France	3208	1269	400	-68%	S	1882	860	-54%	France
Germany	7514	5313	550	-90%	R	2693	1081	-60%	Germany
Greece	400	509	546	7%	S	343	344	0%	Greece
Hungary	1633	1010	550	-46%	S	238	198	-17%	Hungary
Ireland	222	178	42	-76%	S	115	65	-43%	Ireland
Italy	3757	1651	500	-70%	S	1938	1000	-48%	Italy
Luxembourg	24	15	4	-73%	R	23	11	-52%	Luxembourg
Netherlands	490	202	50	-75%	R	580	266	-54%	Netherlands
Norway	137	53	22	-58%	R	218	156	-28%	Norway
Poland	4100	3210	1397	-56%	S	1280	879	-31%	Poland
Portugal	266	362	170	-53%	R	348	260	-25%	Portugal
Slovakia	780	543	110	-80%	S	225	130	-42%	Slovakia
Spain *	2959	2182	774	-65%	R	1113	847	-24%	Spain *
Sweden	491	119	67	-44%	R	338	148	-56%	Sweden
Switzerland	116	43	26	-40%	S	166	79	-52%	Switzerland
United Kingdom	4863	3731	625	-83%	S	2673	1181	-56%	United Kingdom
European Community	26456	16436	4059	-75%	R	13161	6671	-49%	European Community

- (a) The 1980 and 1990 emission levels and the % emission reductions listed are given for information purposes only in the Annex II of the Gothenburg protocol. See the protocol text for details and country notes (<http://www.unece.org/env/lrtap/>).
- (b) As of 7 February 2005. The Protocol enters in force in May 2005. S: signed, R: ratified.

# URBAN AIR QUALITY (SO<sub>2</sub> AND NO<sub>2</sub>)

Data sources: OECD Environmental Data Compendium 2002, EEA (AirBase), national statistical websites

- ♦ Data: average annual concentrations of sulphur and nitrogen dioxides. The number of monitoring stations considered for the average may change over the years.
- ♦ Trends: index 100 refers to 1990 unless otherwise specified.

CAN • Measurement temperature -15.6°C.  
JPN • Fiscal year. Measurement temperature 20°C.  
CZE • NO<sub>2</sub> Praha: index 100 refers to 1992.  
FIN • Measurement temperature 20°C. NO<sub>2</sub>: traffic sites near city centre.  
FRA • Paris (SO<sub>2</sub>): Paris agglomeration.  
ISL • Data represent the average concentration for a part of the year, months may differ from year to year. NO<sub>2</sub>: station near busy street corner and unusually close to traffic in 1995.

IRL • NO<sub>2</sub>: index 100 refers to 1996.  
LUX • NO<sub>2</sub>: data refer to city centre.  
NLD • Fiscal year.  
NOR • SO<sub>2</sub>: winter measurements. NO<sub>2</sub>: October to March.  
PRT • SO<sub>2</sub>: in 1992 six UV Fluor. stations were incorporated. NO<sub>2</sub>: data after 1991 refer to more than one station.  
ESP • Madrid: city centre.  
SWE • Monitoring period from October to March.  
TUR • NO<sub>2</sub>: index 100 refers to 1994.  
UKD • Fiscal year. Measurement method follows British Standard 1747 Part. 3. NO<sub>2</sub> Newcastle: index 100 refers to 1993.

SO2					NO2				
	Cat. (a)	City or area	Measurement method	No. Stn. (b)		Cat. (a)	City or area	Measurement method	No. Stn. (b)
Canada	A	Montreal	UV Fluor.	7-8	Canada	A	Montreal	Chem.	3-10
	B	Hamilton	UV Fluor.	3-4		B	Hamilton	Chem.	2-4
Mexico	A	Mexico City	Pulsed fluor.	26	Mexico	A	Mexico City	Chem.	19
USA	A	New York	UV Fluor.	6	USA	A	New York	Chem.	2
	A	Los Angeles	UV Fluor.	4		A	Los Angeles	Chem.	13
Japan	A	Tokyo	Conduct. c.	1	Japan	A	Tokyo	Chem.	1
	B	Kawasaki	Conduct. c.	1		B	Kawasaki	Saltzman	1
Korea	A	Seoul	UV Fluor.	20	Korea	A	Seoul	Chem.	20
	A	Pusan	UV Fluor.	9		A	Pusan	Chem.	9
Austria	A	Wien	UV Fluor.	12	Austria	A	Wien	Chem.	16
	B	Linz	UV Fluor.	7		B	Linz	Chem.	7
Belgium	A	Brussels	UV Fluor.	4	Belgium	A	Brussels	Chem.	3
	B	Antwerpen	UV Fluor.	4		B	Antwerpen	Chem.	1
Czech. R.	A	Praha	UV Fluor./manual	11-27	Czech. R.	A	Praha	Chem./manual	11
	A	Brno	UV Fluor./manual	2-16		A	Brno	Chem./manual	2
Denmark	A	Köbenhavn	KOM Imp. F.	1-6	Denmark	A	Köbenhavn	Chem.	1-3
	C	Aalborg	KOM Imp. F.	1		C	Aalborg	Chem.	1-2
Finland	A	Helsinki	UV Fluor.	2	Finland	A	Helsinki	Chem.	2
France	A	Paris	UV Fluor.	4-46	France	A	Paris	Chem.	5-19
	B	Rouen	UV Fluor.	3-9		B	Rouen	Chem.	3-6
Germany	A	Berlin	UV Fluor.	9-31	Germany	A	Berlin	Chem.	9-13
	A	München	UV Fluor.	5		A	München	Chem.	5
Greece	A	Athens	UV Fluor.	5	Greece	A	Athens	Chem.	5
Hungary	A	Budapest	UV Fluor.	35	Hungary	A	Budapest	Chem./Saltz.	35
	B	Miskolc	UV Fluor.	8		B	Miskolc	Chem.	8
Iceland	A	Reykjavik	UV Fluor.	1	Iceland	A	Reykjavik	Chem.	1
Ireland	A	Dublin	Total acid titration	24	Ireland	A	Dublin	Chem.	3
Italy	B	Milano	UV fluor/Cuol.	3-5	Italy	B	Milano	Chem.	3-9
Luxemb.	A	Luxembourg	UV Fluor.	2	Luxemb.	A	Luxembourg	Chem.	1
Netherl.	A/B	Rotterdam	UV Fluor.	1	Netherl.	A/B	Rotterdam	Chem.	1
Norway	A	Oslo	Thorin/H2O2	1	Norway	A	Oslo	TGS a. s./Canyon s	1
Poland	A	Łódź	Colorimetry	4-12	Poland	A	Łódź	Saltzman	3-4
	C	Warszawa	Colorimetry	5-6		C	Warszawa	Saltzman	2-3
Portugal	A	Lisboa	UV Fluor.	5-7	Portugal	A	Lisboa	Sod.Ars./Chem.	1-11
Spain	A	Madrid	UV Fluor.	10-24	Spain	A	Madrid	Chem.	6-14
	A	Barcelona	Thorin	1-4		A	Barcelona	Chem.	2-6
Sweden	A	Göteborg	UV Fluor./Ion.c.	1-5	Sweden	A	Göteborg	Chem. c.	1-3
	B	Stockholm	UV Fluor.	2		B	Stockholm	Chem. c.	2
Switzerl.	A	Zurich	UV Fluor. c.	1	Switzerl.	A	Zurich	Chem. c.	1
	B	Basel	UV Fluor. c.	1		B	Basel	Chem. c.	1
Turkey	A	Ankara	Conduct.	7-8	Turkey	A	Ankara	Chem.	1-2
UK	A	London	UV Fluor.	15	UK	A	London	Chem.	1
	B	Newcastle	UV Fluor.	1		B	Newcastle	Chem.	1

- (a) Categories: A - city in which a notable portion (5-10%) of national population is concentrated; B - industrial city in which a significant number of inhabitants is considered to be exposed to the worst level of pollution in 1980; C - city with residential and service functions and with intermediate pollution level.  
(b) Number of monitoring stations may change over the years.

## WASTE

### MUNICIPAL WASTE

Data sources: OECD

- ◆ Municipal waste is waste collected by or on the order of municipalities. It includes waste originating from households, commercial activities, office buildings, institutions such as schools and government buildings, and small businesses that dispose of waste at the same facilities used for municipally collected waste. Household waste is waste generated by the domestic activity of households. It includes garbage, bulky waste and separately collected waste. National definitions may differ.
  - ◆ Values per capita are rounded.
  - ◆ Management of municipal waste: categories may overlap because residues from some types of treatment (incineration, composting) are landfilled; categories do not necessarily add up to 100% since other types of treatment may not be covered.
- CAN • 2002 data. 860 kg/cap. of non hazardous w. were generated from households, institutions, commercial establishments and industries (excluding construction and demolition w.). Management: % based on household waste and composted waste.
- MEX • Landfill: controlled, non-controlled and open landfills.
- USA • 2001 data. Incineration: after recovery; landfill: after recovery and incineration.
- JPN • 2001 data. Municipal waste: data cover municipal w. collection, w. directly delivered and in-house treatment. It excludes separate collection for recycling by the private sector (22 kg/cap.). Management: % based on w. treated by municipalities and separate collection for recycling by the private sector. Recycling: amounts directly recycled (incl. private collection) and recovered from intermediate processing. Landfill: direct disposal (excluding residues from other treatments).
- KOR • Hous. w. and management: 2002 data.
- AUS • Estimated data referring to the late 1990s; municipal w. may include significant amounts of commercial and industrial waste. Management: % based on amounts including about 8 million t. of construction and demolition w..
- NZL • 1999 data referring to household waste landfilled (excluding construction and demolition w.) and packaging waste recycled; 1990 data refer to 1986-91.
- AUT • 2003: Secretariat estimates. Municipal w.: exclude construction site w. which are included in national definition; household w.: includes small part of w. from commerce and trade. Management data: 1999. Landfill: direct delivery without any pretreatment.
- BEL • Data are NSI (2003) and Secretariat (1990) estimates. Household w.: 2001 data including w. from small enterprises. Management data: 2001; landfill: includes residues from incineration.
- CZE • Management: % based on total excluding amounts undergoing mechanical sorting before treatment/disposal.
- DNK • Municipal waste change: Secretariat estimate. Household w.: domestic w., bulky w., garden w. and other in Danish classification.
- FIN • Municipal and household waste: 2003 preliminary data.

- FRA • Municipal and household waste 2003: Secretariat estimates. 1990 data refer to 1989; data include DOM; municipal w.: includes similar hous. w. from commerce and trade, bulky w. and w. from municipal services; household w.: excludes similar w. from commerce and trade and bulky w.. Management: 2002 data.
- DEU • Municipal waste 2003; estimate; waste according to the European Waste Catalogue; household w. and management: 2002 data; household w.: hous. and similar w. collected with hous. w., bulky, compostable w. from biocontainers, separate collection.
- HUN • 2003: estimates. Municipal w.: includes estimates for population not served by municipal waste services. Management: percentages based on collected amounts; 2002 data.
- ISL • Municipal waste: 2002 data; % change: 2002/1992; household waste and management: 2003 preliminary data.
- IRL • Municipal waste change: Secretariat estimate; household w.: include estimated arisings from household not served by waste collection. Management: percentages based on collected amounts.
- ITA • Municipal waste 2003: estimate. Management: 2002 data. Recycling/composting: % overestimated as recycling includes waste from sorting operations which are sent to landfill and composting: includes mechanical-biological treatment.
- LUX • 2003: estimates. Mun. w.: includes separate collection. Management: 2001 data.
- NLD • Municipal w.: include separate collection for recycling purposes. Household w.: include w. paper collected by schools, churches, sportclubs. Management: % based on total excluding amounts undergoing mechanical sorting before treatment/disposal.
- NOR • Municipal w.: include about 20 kg/cap. of construction and demolition waste. Per capita amounts adjusted to population served by municipal waste services. Management: household waste only; incineration: excluding residues landfilled.
- POL • Data refer to waste collected.
- PRT • Includes Azores and Madeira Islands. Incineration and landfill: excluding residues from other operations.
- ESP • 2002 data. Municipal w. include household and similar w. from small businesses, bulky w., w. from municipal services and separate collection. Mun. w. % change: refer to household w. Includes Balears and Canary Islands.
- CHE • Municipal w.: includes separately collected waste for recycling.
- TUR • 2003: estimate: 1990 data refer to 1991; amounts collected in municipalities served by w. service (76.3% of the population in 2002) as a share of total population. Management: 2002 data.
- UKD • Estimates; household w.: includes hazardous and clinical w. from households and w. from street cleansing and litter bins. Management: 2002 data.
- OECD • Estimates which can differ from the sum of national data presented. Do not include Czech and Slovak Rep., Hungary, Poland and Korea.

### INDUSTRIAL / NUCLEAR / HAZARDOUS WASTE

Data sources: OECD

- ◆ Industrial waste refers to waste generated by the manufacturing industry. National definitions often differ. Rounded data.
- ◆ Nuclear waste refers to spent fuel arisings in nuclear power plants. The data are expressed in tonnes of heavy metal. It should be noted that these data do not represent all radioactive waste generated.
- ◆ Hazardous waste refers to waste streams controlled according to the Basel Convention on Transboundary Movements of Hazardous Wastes and their Disposal (see Annex IV of the convention for complete definition and methods of treatment, movement and disposal). National definitions often differ, and caution should be

exercised when using these figures. Imports, exports: should refer to actual amounts moved, but may in some cases refer to total authorisations (notifications).

- CAN • 1.1 million tonnes of hazardous waste were treated and disposed of in Canada in the year 2000.
- MEX • Haz. w.: data based on surveys covering 27 280 enterprises; includes biological infectious waste. Amounts to be managed: capacity building granted.
- USA • Haz. w.: includes some waste water. Amounts to be managed: quantity managed by storage only is excluded.

JPN	• Ind. w.: 2000 data. Nuc. w.: for fiscal year. Haz. w.: production: data refer to national law; movements: data refer to Basel definition.	IRL	• Ind. w.: 1998 data. Haz. w.: total figure includes 296 kt of reported and 74 kt of unreported waste.
KOR	• Ind. w.: 2002 data. Includes hazardous w. and cover ISIC 01-02, 10-14, 40 and 41. Nuc. w.: LWR fuel and HWR fuel only. Haz. w.: movements: data refer to Basel definition.	ITA	• Ind. w.: 2001 data. Haz. w.: National definition refers to haz. w. according to the European Waste Catalogue. Amount to be managed include stored waste from earlier years and is therefore higher than the amount generated.
NZL	• Ind. w.: 1999 data including landfilled waste.	NLD	• Ind. w.: 2001 data. Haz. w.: all waste defined as special waste in Dutch legislation; production: excluding contaminated soil.
AUT	• Haz. w.: primary waste.	NOR	• Ind. w.: 2002 data including hazardous waste.
BEL	• Ind. w.: NSI estimates for 2000.	POL	• Ind. w.: 2001 data according European waste catalogue. Haz. w.: data refer to a classification based on the European Waste Catalogue.
CZE	• Ind. w.: 2002 data including hazardous waste. Haz. w.: data include municipal hazardous waste.	PRT	• Ind. w.: 2001 data on Portugal continental. Haz. w.: movements: according to the Basel definition.
DNK	• Ind. w.: 2000 data. Haz. w.: according to the European Waste Catalogue. Production: primary waste. Movements: subject to mandatory notification. Amounts to be managed: primary and secondary waste.	SVK	• Ind. w.: 1999 data.
FIN	• Ind. w.: 2000 data. Haz. w.: amounts to be managed: amounts generated and treated excluding preparatory activities (239 kt); movements: waste regulated according to the regulation 259/93/EC.	ESP	• Ind. w.: 2000 data. Haz. W.: production data according to the European Waste Catalogue.
FRA	• Ind. w.: 1999 data including hazardous w. and w. from construction and services. Nuc. w.: 2002 Secretariat estimate. Haz. w.: amount generated: estimates for all waste defined as special industrial waste in French legislation.	SWE	• Ind. w.: 1998 data excluding ISIC 37.
DEU	• Ind. w.: 2001 preliminary data referring to primary waste. Haz. W.: from off-site management (with consignment note); movements data based on Basel Convention.	CHE	• Ind. w.: 2000 data; recovered/landfilled industrial waste including some special waste. Haz. w.: amount generated: all waste defined as special waste in Swiss legislation; includes imports.
HUN	• Ind. w.: 2000 data excluding hazardous waste; firms with more than 10 employees.	TUR	• Ind. w.: 1997 data.
ISL	• Ind. w.: 2002 data. Waste from slaughterhouses.	UKD	• Ind. w.: 1998/99 estimates referring to England and Wales. Haz. W.: special wastes as defined by the Hazardous Waste List (94/904/EC) and implemented by the Special Waste Regulations, 1996. Movements: under the Transfrontier Shipments of Waste Regulations 1994.
		OECD	• Ind. w.: rough Secretariat estimate. Nuc. W.: 2002 data.

## WASTE RECYCLING

Data sources: OECD, Fédération Européenne du Verre d'Emballage (Brussels), Confederation of European Paper Industries (Brussels), FAO

- ♦ Recycling is defined as reuse of material in a production process that diverts it from the waste stream, except for recycling within industrial plants and the reuse of material as fuel. The recycling rate is the ratio of the quantity collected for recycling to the apparent consumption (domestic production + imports - exports).
  - ♦ Table: data may refer to the years immediately preceding or following the columns' header: 2003: or latest available year; data prior to 1999 were not taken into account.
- |     |   |
|-----|---|
| CAN | • Paper: recovered paper/paper and board consumption; glass: packaging glass only.  |
| MEX | • Data for 2003 refer to 2001. Recycling rates are based on amounts of waste generated and refer to municipal waste only.   |
| USA | • Data for 2003 refer to 2001. Data refer to the material diverted from the municipal waste stream; recycling rates are based on amounts of waste generated.  |
| JPN | • Glass: returnable bottles are excluded; data refer to reuse of glass as cullet compared to national production of glass bottles.  |
| KOR | • Data for 2003 refer to 2001.  |
| AUS | • Data for 2003 refer to 2000. Paper: data refer to newsprint, cardboard, and paper packaging; definitions of recycling vary according to the material collected (e.g. may include amounts incinerated to divert them from landfill). |
| NZL | • Data refer to packaging only.   |

## WATER QUALITY

### RIVER QUALITY

Data sources: OECD Environmental Data Compendium 2004

- ♦ Measurement locations are at the mouth or downstream frontier of rivers.
- ♦ Data: refer to three year averages around 1980, 1985, 1990, 1995 and 2001.

- |     |   |
|-----|---|
| AUT | • Glass: data for 1980 and 1995 refer to 1981 and 1994.   |
| BEL | • Glass: data for 1980 and 1990 refer to 1981 and 1991.   |
| CZE | • Paper: figure for 1995 refers to 1996.  |
| DNK | • Glass: data for 1980 and 1990 refer to 1981 and 1991.   |
| FRA | • Paper: ratio of the quantity recycled in the country to the apparent consumption. Glass: amounts collected as a percentage of apparent consumption (FEVE); data for 1980 and 1990 refer to 1981 and 1991. |
| DEU | • 1980, 85, (and 90 for glass): western Germany; latest years: total Germany; glass: recycling rate is based on total sales.  |
| HUN | • Paper: figure for 1990 refers to 1991. Glass: figure for 2003 refers to 1999.   |
| ISL | • Data for 2003 refer to 2002.  |
| ITA | • Paper: figure for 1980 refers to 1981. Glass: figure for 1990 refers to 1991.   |
| NLD | • Glass: glass collected in bottle banks as % of sale of products in disposable glass on domestic market.   |
| NOR | • Glass: excludes considerable amounts of glass recovered before entering the waste stream (deposit/reuse of bottles); figure for 1990 refers to 1991.  |
| SWE | • Paper: figure for 2003 refers to 2002. Glass: figure for 1990 refers to 1991.   |
| CHE | • Glass: figure for 1980 refers to 1981.  |
| UKD | • Glass: Great Britain only; glass collected in bottle banks and from industrial sources (bottlers and packers) and flat glass. Figure for 2003 refers to 2001.   |

- ♦ Nitrates: total concentrations unless otherwise specified.

- |     |   |
|-----|---|
| CAN | • Nitrates: NO <sub>2</sub> + NO <sub>3</sub> .     |
| MEX | • Lerma: since 2000, data refer to another station. |
| DNK | • Nitrates: NO <sub>2</sub> + NO <sub>3</sub> .     |

## Technical Annex

- FRA • Seine: station under marine influence. Rhône: since 1987, data refer to another station. Nitrates Loire and Seine: dissolved concentrations.
- DEU • Nitrates: dissolved concentrations.
- ITA • Po: until 1988: Ponte Polesella (76 km from the mouth); since 1989: Pontelagoscuro (91 km from the mouth).
- LUX • Moselle 1980 and 1985: one year average (1980, 1985).
- NLD • Nitrates Rijn-Lobith and Maas-Keizersveer: dissolved concentrations.

### WASTE WATER TREATMENT

Data sources: OECD Environmental Data Compendium 2004

- ♦ Total served: national population connected to public sewage treatment plants. Includes: primary treatment - physical and mechanical processes which result in decanted effluents and separate sludge (sedimentation, flotation, etc.); secondary treatment - biological treatment technologies, i.e. processes which employ anaerobic or aerobic micro-organisms; tertiary treatment - advanced treatment technologies, i.e. chemical processes.
  - ♦ Sewerage connection rates: refers to population connected to public sewage network with or without treatment.
  - ♦ Early 2000s: data refer to 2002 unless otherwise specified.
- CAN • Data refer to 1983 and 1999, secretariat estimates based on MUD Municipal Waste Water Database. Secondary treatment includes waste stabilisation ponds. The population not connected to public sewerage are connected to private or independent treatment.
- MEX • Early 2000s: 2000 data. Among the 38.6% of population not connected to public sewerage, 15.1% are connected to private or independent treatment.
- USA • Data refer to 1982 and 1996. Primary: may include ocean outfalls and some biological treatment. Tertiary: includes 2-3% of non-discharge treatment, e.g. lagoons, evaporation ponds. Excludes rural areas served by on-site disposal systems.
- JPN • Early 2000s: 2001 data. Secondary: may include primary treatment and some tertiary treatment. Among the 36% of population not connected to public sewerage, 7 % are connected to private or independent treatment (1999 data).
- KOR • Early 2000s: 2000 data. Connection rates may include population not connected by pipe.
- AUS • Early 2000s: 2001 data. Sewerage network connection rates refer to reticulated sewerage.
- NZL • Early 2000s: 1999 data.
- AUT • Early 2000s: 2001 data. The population not connected to public sewerage are connected to private or independent treatment.
- BEL • Early 2000s: 1998 data.
- DNK • Data refer to 1983 and 1998. The population not connected to public sewerage are connected to private or independent treatment.
- FIN • Early 2000s: 2001 data. Secondary: 50-80% removal of BOD; tertiary: 70-90% removal of BOD.
- FRA • Early 2000s: 2001 data. Among the 18.5% of population not connected to public sewerage, 16.2% are connected to private or independent treatment.

### PUBLIC EXPENDITURE ON WATER

Data sources: OECD (2003), Pollution abatement and control expenditure in OECD countries.

- ♦ Data refer to public pollution abatement and control (PAC) expenditure (see Expenditure item) at current prices and purchasing power parities for the latest available year. PAC activities for soil and water comprise collection and purification of waste water, combating of pollution in the marine environment, prevention, control and monitoring of surface water pollution, combating of pollution of inland surface waters, prevention and combating of thermal pollution of water, abatement of groundwater and soil pollution, and regulation and monitoring. Excludes the supply of drinking water.

- POL • Data 1980 and 1985: one year average (1980, 1985).
- PRT • Guadiana: since 1997, data refer to another station.
- ESP • Guadalquivir: from 1990 onwards data refer to another station closer to the mouth and farther away from Sevilla influence. Nitrates: dissolved concentrations.
- UKD • Nitrates: when the parameter is unmeasurable (quantity too small) the limit of detection values are used when calculating annual averages. Actual averages may therefore be lower. Mersey 1980: one year average (1980).

- DEU • 1980 data refer to 1979 and to w. Germany only. Early 2000s: 2001 data, total public sewage treatment connection rates are based on classification by residence, treatments are based on classification by plant. Among the 5.5% of population not connected to public sewerage, 4% are connected to private or independent treatment.
- GRC • Early 2000s: 1997 data. In 1993 a new waste water plant in Athens city started working; data include connections still under construction.
- HUN • Early 2000s: 2000 data. Among the 48.8% of population not connected to public sewerage, 17.1% are connected to private or independent treatment.
- ISL • Early 2000s: 2001 data. Among the 10% of population not connected to public sewerage, 6% are connected to private or independent treatment.
- IRL • Early 2000s: 2000 data.
- ITA • Early 2000s: 1999 data.
- LUX • Early 2000s: 1999 data. The population not connected to public sewerage are connected to private or independent treatment.
- NLD • Early 2000s: 2000 data. Tertiary: incl. dephosphatation and/or disinfection.
- NOR • Early 2000s: 2000 data. The population not connected to public sewerage are connected to private or independent treatment.
- POL • Early 2000s: 2001 data.
- PRT • Data refer to 1981 and 1998. Among the 35.7% of population not connected to public sewerage, 4.7% are connected to private or independent treatment.
- ESP • Early 2000s: Secretariat estimates.
- SWE • Early 2000s: 2000 data, change in methodology. Primary: may include removal of sediments. Secondary: chemical or biological treatment. Tertiary: chemical and biological plus complementary treatment. Among the 14% of population not connected to public sewerage, 13% are connected to private or independent treatment.
- CHE • Early 2000s: 2000 data.
- TUR • Early 2000s: 1998 data. Data result from an inventory covering municipalities with an urban population over 3000 inhabitants, assuming that the sewerage system and treatment facilities serve the whole population of the municipalities.
- UKD • Early 2000s: 2000 data. Data refer to England and Wales and to financial year (April to March). Primary: removal of gross solids. Secondary: removal of organic material or bacteria under aerobic conditions. Tertiary: removal of suspended solids following secondary treatment.

- ♦ Data includes expenditure by public specialised producers of environmental protection services.

- MEX • Public sector: Federal government, capital city government, and two public enterprises are included.
- CZE • Investment only.
- DEU • End-of-pipe investments only, except for public specialised producers.
- HUN • Investment only.
- NOR • Only covers municipal departments. Investments: end-of-pipe only.
- ESP • Secretariat estimate for 2000.



CHE • Provisional data.

## WATER RESOURCES

### INTENSITY OF USE OF WATER RESOURCES

Data sources: OECD Environmental Data Compendium 2004, FAO (FAOSTAT database)

- ♦ Abstractions: accounts for total water withdrawal without deducting water that is reintroduced into the natural environment after use.
- ♦ Abstractions as % of available resources: data refer to total abstraction divided by total renewable resources, except for total, where the internal resource estimates were used to avoid double counting.
- ♦ Renewable water resources: net result of precipitation minus evapotranspiration (internal) plus inflow (total). This definition ignores differences in storage capacity, and represents the maximum quantity of fresh water available on average.
- ♦ Inflow: water flows from neighbouring countries. Includes underground flows.
- ♦ Water stress (source: CSD, "Comprehensive Assessment of the Freshwater Resources of the World") is based on the ratio of water withdrawal to annual water availability.
  - ♦ Low (less than 10 per cent): generally there is no major stress on the available resources.
  - ♦ Moderate (10 to 20 per cent): indicates that water availability is becoming a constraint on development and significant investments are needed to provide adequate supplies.
  - ♦ Medium-high (20 to 40 per cent): implies the management of both supply and demand, and conflicts among competing uses need to be resolved.
  - ♦ High (more than 40 per cent): indicates serious scarcity, and usually shows unsustainable water use, which can become a limiting factor in social and economic development.

National water stress levels may hide important variations at subnational (e.g. river basin) level; in particular in countries with extensive arid and semi-arid regions.

- ♦ Freshwater abstractions by major sector
  - ♦ "Public water supply" refers to water supply by waterworks, and may include other uses besides the domestic sector.
  - ♦ "Irrigation" refers to self supply (abstraction for own final use).
  - ♦ "Others": include industry and electrical cooling (self supply).
  - ♦ Freshwater abstractions data: refers to 2002 or latest available year (data prior to 1994 have not been considered).
- ♦ Cultivated land: refers to arable and permanent crop land.

- CAN • 1980 and early 2000s: 1981 and 1996 data. 1996 data include Secretariat estimates for electrical cooling.
- MEX • 1980: includes Secretariat estimates for electrical cooling based on electricity generation in power stations. Early 2000s: 2001 data.
- USA • Early 2000s: 2000 data.
- JPN • Early 2000s: 2000 data.
- KOR • Partial totals excluding electrical cooling. Abst. for public supply: data refer to domestic sector only. Early 2000s: 1998 data.
- AUS • In Australia the intensity of use of water resources varies widely among regions; one third of the country is arid, one third semi-arid and the high rainfall areas in the north are far from the densely populated areas in the south. 1980: 1977 data adjusted for an average climatic year. Early 2000s: 1996/97 data, abst. for public supply includes Secretariat estimates.
- AUT • Partial totals. Early 2000s: 1997 data.
- BEL • Data include Secretariat estimates. Early 2000s: 1998 data.
- CZE • Early 2000s: 2002 data.
- DNK • 1980 and early 2000s: 1977 and 2001 data.
- FIN • Partial totals. Early 2000s: 1999 data.
- FRA • 1980 and early 2000s: 1981 and 2002 data.

- DEU • Excluding agricultural uses other than irrigation. Early 2000s: 2001 data. Change since 1980: ratios for total Germany compared to ratios for western Germany (1979).
- GRC • Partial totals excluding agricultural uses besides irrigation. Includes data for public water supply which refer only to data from 42 out of 75 great water distribution enterprises. Early 2000s: 1997 data.
- HUN • Early 2000s: 2000 data.
- ISL • Fish farming is a major user of abstracted water after 1985. Abst. for public supply: includes the domestic use of geothermal water. Early 2000s: 2002 data.
- IRL • Early 2000s: 1994 data; totals include 1980 data for electrical cooling.
- ITA • Excluding agricultural uses besides irrigation. Early 2000s: 1998 data.
- LUX • Early 2000s: 1999 data.
- NLD • 1980: 1981 data, partial totals excluding all agricultural uses. Early 2000s: 2001 data.
- NOR • Early 2000s: 1996 data, including Secretariat estimates for industry.
- POL • Totals include mining and construction water discharged without use and abstractions for agriculture which refer to aquaculture (areas over 10 ha) and irrigation (arable land and forest areas greater than 20 ha); animal production and domestic needs of rural inhabitants are not covered. Early 2000s: 2002 data.
- PRT • Excluding agricultural uses other than irrigation. Early 2000s: 1998 data.
- ESP • 1980: excluding agricultural uses other than irrigation. Early 2000s: 2001 data.
- SWE • 1980: include data from different years. Early 2000s: 2002 data.
- CHE • Partial totals excluding agricultural uses. Early 2000s: 2001 data.
- TUR • 1980: partial totals; excluding agricultural uses other than irrigation and electrical cooling. Early 2000s: 2001 data.
- UKD • Partial totals. England and Wales only. Data include miscellaneous uses for power generation, but exclude hydroelectric power water use. Early 2000s: 2000 data.
- OECD • Rounded figures, including Secretariat estimates and considering England and Wales only.

### IRRIGATION

- CAN • Abst. for irrigation: 1996 data.
- MEX • Abst. for irrigation: 2001 data.
- USA • Abst. for irrigation: 2000 data.
- JPN • Abst. for irrigation: Secretariat estimates for 2000. Irrigated land: rice irrigation only.
- KOR • Abst. for irrigation: 1998 data, includes other agricultural abstractions. Irrigated land: rice irrigation only.
- AUS • Abst. for irrigation: 1996/97 data.
- AUT • Abst. for irrigation: refers to groundwater, 1997 data.
- BEL • Data for Belgium and Luxembourg. Abst. for irrigation: 1998 (Belgium) and 1999 (Luxembourg) data.
- DNK • Abst. for irrigation: 2001 data, includes fish farming.
- FIN • Abst. for irrigation: 1999 data.
- FRA • Abst. for irrigation: includes other agricultural uses but irrigation is the main use.
- DEU • Abst. for irrigation: 1998 data.
- GRC • Abst. for irrigation: 2001 data.
- HUN • Abst. for irrigation: 2000 data.
- IRL • Abst. for irrigation: irrigated area is negligible.
- ITA • Abst. for irrigation: 1998 data.
- LUX • Data for Belgium and Luxembourg. Abst. for irrigation: 1998 (Belgium) and 1999 (Luxembourg) data.

## Technical Annex

- NLD • Abst. for irrigation: 2001 data.
- NOR • Abst. for irrigation: 1996 data.
- PRT • Abst. for irrigation: 1998 data.
- ESP • Abst. for irrigation: 2001 data.

### WATER PRICES

Data sources: IWSA (International Water Supply Association), 2004, International Statistics for Water Services

- ♦ Prices calculated on the basis of a family of four (two adults and two children) living in a house with garden rather than an apartment.

- CHE • Abst. for irrigation: 2001 data.
- TUR • Abst. for irrigation: 2001 data.
- UKD • England and Wales only. Abst. for irrigation: 2000 data.
- OECD • Secretariat estimates considering England and Wales only.

Where there are water meters, the price is based on annual consumption of 200 m<sup>3</sup>. Where supply is normally unmeasured the average price has been used. Prices at current exchange rates. VAT is not included.

## FOREST RESOURCES

### INTENSITY OF USE OF FOREST RESOURCES

Data sources: OECD Environmental Data Compendium 2002, FAO (FAOSTAT database), national statistical yearbooks

- ♦ Intensity of use: data refer to annual growth (gross increment) divided by annual harvest (fellings).
- ♦ 2000s: 2000 or latest available year.
- ♦ Data exclude Iceland as there is no traditional forestry in this country.
- CAN • 1990s and 2000s: 1991 and 1994 data.
- MEX • 2000s: 1995 data.
- USA • 1980s: estimates. 1990s: annual harvest 1992 data, annual growth 1987-1992 data.
- JPN • Annual harvest 2000s: 1995 data. Annual growth: national annual growth; 1990s and 2000s: 1990-1995 data.
- KOR • 2000: 1997 data.
- AUS • 1980s and 2000s: 1985 and 1994 data.
- NZL • 2000s: 1996 data. Annual growth 1990s: current annual increment for plantation estate only. Growth of natural forests is considered to be near zero with a growth rate equal to mortality. Harvest from natural forests is less than 3 % of harvest.
- AUT • 2000s: 1992-96 data. Annual growth: 1980s and 1990s: 1971-1980 and 1986-1990.
- BEL • Intensity of use based on annual harvest for 1986-1995 and annual growth for 1982-1997.
- CZE • 2000s: 1995 data.
- DNK • 1980s: Secretariat estimates. 2000s (1996 data): expected mean annual volume increment for 1990-2000.
- FIN • 2000s annual harvest 1991-1996 data, annual growth 1986-1996 data.
- FRA • 2000s: annual harvest 1996 data, annual growth 1997 data.
- DEU • 2000s: 1996 data.

- GRC • 1990s and 2000s: 1992 and 1995 data.
- HUN • 2000s: 1996 data.
- IRL • 2000s: annual harvest 1996 data, annual growth 1998 data.
- LUX • 1980s and 1990s: 1985 and 1989 data. 2000s: annual harvest 1995 data, annual growth 1992 data.
- NLD • Before 1995 data refer to total exploitable forest. 1980s and 2000s: 1985 and 1995 data (break in time series, TBFRA 2000 data).
- NOR • 2000s: 1994-1996 data.
- POL • Harvest: decrease in 1990 was a result of decreased demand for wood in the economic transition period. Until 1990: data refers to the whole forest area. 2000s: 1992-1996 data.
- PRT • 2000s: 1995 data, break in time series due to a change in definitions (TBFRA 2000), data refer to continental Portugal, Azores and Madeira Islands.
- SVK • 2000s: 1996 data.
- ESP • Growth and intensity of use 1980s: Secretariat estimates. Annual growth 1990s: 1989 data. 2000s: 1994 data.
- SWE • 1980s and 1990s data refer to 1971-80 and 1986-90. Data refer to total forest including other wooded land and trees outside the forests. 2000s: 1992-96 data, break in time series due to a change in definitions (TBFRA 2000).
- CHE • 1990s and 2000s: 1985-1995 data, break in time series due to a change in definitions (TBFRA 2000).
- TUR • Annual growth 1980s and 1990s: estimates. 2000s: 1999 data.
- UKD • 2000s: 1995 data.
- OECD • Secretariat estimates; excludes Germany and Iceland.

### FOREST AND WOODED LAND

Data sources: OECD Environmental Data Compendium 2004, FAO (FAOSTAT database)

- ♦ Data include Secretariat estimates.
- ♦ Latest available year: data refer to early 2000s unless otherwise specified.
- CAN • Numerical differences between successive national inventories do not necessarily reflect real changes. Accordingly, forest in Canada has been considered as constant, taking into account 1994 data.
- MEX • 1970: refers to the Mexican inventory 1961-85. 1980: Secretariat estimates. Data exclude scrubs, perturbed areas and other vegetation types of the Mexican inventory.
- USA • Includes low productivity forest land (less than 1.4 m<sup>3</sup>/ha/year). Latest available year refers to 1992.
- JPN • Data refer to areas under the management of the Minister of Forestry. 1980: 1981 data.
- AUS • Forest only. Latest available year: change is primarily due to improvements in mapping.
- NZL • Latest available year refers to 1999.
- BEL • Change in methodologies after 1970.
- DNK • 1970 and 1980: 1976 data. Latest available year refers to 1990.

- FIN • Latest year available: 1997 data based on National Forest Inventory 1986-97; includes all the wooded land (forest and scrub land) where the annual potential wood production exceeds 0.1 m<sup>3</sup>/ha.
- FRA • 1970 and 1980: Secretariat estimates.
- DEU • 1970 and 1980: Secretariat estimates based on data for western Germany and eastern Germany (former GDR).
- GRC • Data refer to Agriculture and Livestock census. Latest available year refers to 1991.
- ISL • Data refer to land outside arable areas.
- ITA • Data refer to land with tree crown cover of more than 50% and area of more than 0.5 ha. Since 1986 some agricultural land has been reclassified as forest land; since 1985 Mediterranean maquis has been included in mixed forest.
- LUX • Latest available year refers to 1998.
- NOR • 1970: Secretariat estimates.
- POL • Data refer to the public ground register.
- PRT • Data refer to continental Portugal, Azores and Madeira Islands. Latest available year refers to 1998.
- SWE • Latest available year refers to 1995, change in definitions.
- CHE • Latest available year refers to 1995.
- TUR • Latest available year refers to 1999.

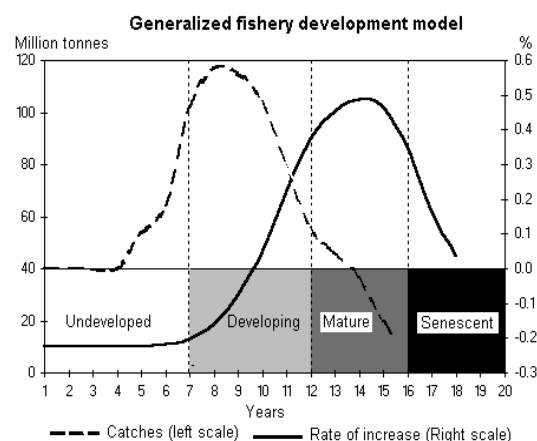
## FISH RESOURCES

### FISH CATCHES AND CONSUMPTION

Data sources: FAO

- ♦ **Total catches:** data refer to capture fisheries in inland and marine waters, including freshwater fish, diadromous fish, marine fish, crustaceans, molluscs and miscellaneous aquatic animals; excludes aquaculture.
  - ♦ **Marine catches:** include marine fish, crustaceans, and molluscs.
  - ♦ **World marine fish resources by phase of fishery development:** the figure illustrates the process of intensification of fisheries since 1950 and the increase in the proportion of world resources which are subject to declines in productivity. The resources refer to the top 200 species-area combinations for marine fish, selected for analysis on the basis of average landings over the whole time period. These 200 major resources account for 77% of world marine fish production. The process of development of a fishery is schematically represented in the figure next column. The relative rate of increase during the development process, which varies significantly as the maximum long-term yield is approached, reached and "overshot" has been used here to provide a rough assessment of the state of marine resources.
- For further details, please refer to: "Review of the state of world fishery resources: marine fisheries", FAO, Rome 1997.
- ♦ **Fish consumption:** Total food supply = production - non-food use + imports - exports + stock variations. Data refer to 2002 or latest available year.
  - ♦ Following a recommendation of the 19<sup>th</sup> Session of the Coordinating Working Party on Fishery Statistics, the names and composition of former groups 33, 34 and 37 of the FAO International Classification of

Aquatic Animals and Plants (ISSCAP) were revised. The species formerly included in group 34 "Jacks, mullets, sauries" were moved to group 37 "Mackerels, snoeks, cutlassfishes", which was renamed "Miscellaneous pelagic fishes".



- BEL • Data include Luxembourg.  
DNK • Excludes Greenland and Faroe Islands.

## BIODIVERSITY

### THREATENED SPECIES

Data sources: OECD

- ♦ **Threatened species:** "Threatened" refers to the sum of species "critically endangered", "endangered" and "vulnerable" (new IUCN categories), or to the sum of species "endangered" and "vulnerable" (old IUCN categories). Extinct species are excluded unless otherwise specified.
  - ♦ **"Critically endangered":** species that are facing an extremely high risk of extinction in the wild in the immediate future.
  - ♦ **"Endangered":** species that are not "critically endangered" but are facing a very high risk of extinction in the wild in the near future.
  - ♦ **"Vulnerable":** species that are not "critically endangered" or "endangered" but are facing a high risk of extinction in the wild in the medium-term future.
  - ♦ When interpreting these tables, it should be borne in mind that the number of species known does not always accurately reflect the number of species in existence; and that the definitions are applied with varying degrees of rigour in countries, although international organisations such as the IUCN and the OECD are promoting standardisation.
- CAN** • Species: any indigenous species, subspecies, variety, or geographically or genetically distinct population of wild fauna and flora; data include extinct and extirpated species. All reptile and amphibian species are declining somewhat due to urbanisation and agriculture.
- MEX** • Excludes extinct species; birds: resident and migratory species; fish: freshwater and marine species. Threatened: "Endangered/Vulnerable" species and "species facing risk of extinction" of the national classification.
- USA** • Including Pacific and Caribbean islands; data refer to indigenous species; fish: freshwater species only.
- JPN** • Known species: estimated data; fish: brackish and fresh water species only.
- KOR** • Threatened: "endangered" and "critically endangered".
- AUS** • Mammals: include monotremes and marsupials; birds: estimated data; threatened species of vascular plants refer to threatened species of all plants.
- NZL** • Indigenous species only; mammals: land-breeding and marine mammals.
- AUT** • Fish, reptiles, amphibians and plants: indigenous species only; Birds: breeding species on national territory only; fish: freshwater only.
- BEL** • Mammals and birds: breeding species only, including reintroduced species; fish: freshwater only, including artificially sustained species; reptiles and amphibians: breeding species, including reintroduced species; plants: indigenous species only.
- CZE** • Data include extinct species; birds: nesting species only; fish: freshwater only, includes lampreys; reptiles and amphibians: data refer to indigenous species.
- DNK** • Data refer to indigenous species; fish: freshwater only.
- FIN** • Mammals: indigenous sp. only out of 65 total known sp.; fish: excludes introduced species and occasionally present marine fish; vascular plants: resident wild sp., subspecies, varieties and independent hybrids.
- FRA** • Metropolitan France; birds: breeding sp. and other regular visitors and passage migrants. Fish: include fish and cyclostomes; threatened marine species are calculated using data available only.
- DEU** • Species known: species assessed for German Red List; birds: number of breeding species. Birds, fish, reptiles and amphibians: data refer to indigenous species only.

## Technical Annex

GRC	<ul style="list-style-type: none"> <li>Fish: freshwater only; vascular plants: threatened: includes eight extinct species.</li> </ul>	
HUN	<ul style="list-style-type: none"> <li>Threatened mammals: protected and highly protected species; fish: freshwater species of which 2 indigenous species; "Threatened" fish species include indeterminate species; "Threatened" reptiles and amphibians refer to protected and highly protected species.</li> </ul>	
ISL	<ul style="list-style-type: none"> <li>Mammals: terrestrial species only, 26 marine species are known; birds: breeding species only; about 350 species have been recorded one or more times on national territory; fish: freshwater species only.</li> </ul>	
IRL	<ul style="list-style-type: none"> <li>Mammals: exclude marine mammals; because total of known species includes some sp. for which status is not evaluated, threatened % is underestimated. Birds: resident sp., regular visitors and passage migrants, includes 193 wintering species, endangered birds: 5 or 6, vulnerable: 18 to 28. Fish: Freshwater only, the smelt is included although it is estuarine. Vascular plants: approx. 2 100 known species, indigenous: between 815 and 1000.</li> </ul>	
ITA	<ul style="list-style-type: none"> <li>Vascular plants: indigenous species out of 6459 known species.</li> </ul>	
LUX	<ul style="list-style-type: none"> <li>Birds: breeding species only.</li> </ul>	
NLD	<ul style="list-style-type: none"> <li>Birds: breeding sp. only; fish: freshwater only; vascular plants include extinct species.</li> </ul>	
NOR	<ul style="list-style-type: none"> <li>Mammals: include 53 indigenous terrestrial sp.; birds: number of regular breeding sp. on national territory (total number of breeding</li> </ul>	<ul style="list-style-type: none"> <li>sp.: 247); fish: 45 freshwater sp. (of which 9 introduced), 150 marine sp..</li> </ul>
		<ul style="list-style-type: none"> <li>POL • Birds: breeding species only (total number of species recorded so far in Poland: 418); fish: include anadromous and lampreys.</li> </ul>
		<ul style="list-style-type: none"> <li>PRT • Fish: indigenous freshwater species only; reptiles and amphibians: indigenous species only.</li> </ul>
		<ul style="list-style-type: none"> <li>SVK • Mammals: total species known refer to taxons; fish: freshwater only.</li> </ul>
		<ul style="list-style-type: none"> <li>ESP • Threatened: endangered and vulnerable listed in the red book; mammals: threatened species from the CNEA (national catalogue); fish: freshwater species only.</li> </ul>
		<ul style="list-style-type: none"> <li>SWE • Fish: freshwater species only.</li> </ul>
		<ul style="list-style-type: none"> <li>CHE • Includes indigenous species only, birds: all breeding sp. on national territory; fish: indigenous species of pisces and cyclostomata.</li> </ul>
		<ul style="list-style-type: none"> <li>TUR • Fish: freshwater sp. only; marine sp.: 400-450 (estimated number); vascular plants: indigenous species.</li> </ul>
		<ul style="list-style-type: none"> <li>UKD • Data refer to Great Britain; mammals: terrestrial and marine sp., excluding cetaceans; "threatened" refers to national standard; birds: (of which 247 indigenous) number of native sp. recorded by Avian Population Estimates Panel; "threatened": globally threatened and rapidly declining birds of conservation concern; fish: freshwater species only, including those that leave the sea to breed in fresh water (e.g. salmon); plants: approximate figures.</li> </ul>

## PROTECTED AREAS

Data sources:	WDPA Consortium. "World Database on Protected Areas" 2005 – Copyright World Conservation Union (IUCN) and UNEP-World Conservation Monitoring Centre (UNEP-WCMC), 2005 ( <a href="http://www.unep-wcmc.org/index.html">http://www.unep-wcmc.org/index.html</a> )	<ul style="list-style-type: none"> <li>♦ For further details on management categories please refer to "Guidelines for Protected Area Management Categories", IUCN, 1994.</li> <li>♦ See also the Recommendations established at the IVth World Congress on National Parks and Protected Areas.</li> </ul>
♦ Terrestrial and marine areas. IUCN management categories I-VI and protected areas without IUCN category assignment. National classifications may differ.		
♦ Major protected areas: IUCN management categories I-VI:		
♦ Ia: strict nature reserves, managed mainly for science;		
♦ Ib: wilderness areas, managed mainly for wilderness protection;		
♦ II: national parks, managed mainly for ecosystem protection and recreation;		
♦ III: natural monuments, managed mainly for conservation of specific natural features;		
♦ IV: habitat/species management areas, managed mainly for habitat and species conservation through management intervention;		
♦ V: protected landscapes/seascapes, managed mainly for landscape/seascape conservation and recreation;		
♦ VI: managed resource protected areas, managed mainly for the sustainable use of natural ecosystems.		
		<ul style="list-style-type: none"> <li>USA • Includes Alaska. Excludes American Samoa, Guam, Minor Outlying Islands, Northern Mariana Islands, Puerto Rico and Virgin Islands.</li> <li>AUS • Includes the Great Barrier Reef Marine Park totalling 344 360 km<sup>2</sup> (cat. VI).</li> <li>DNK • Excludes Greenland: one national park of 972 000 km<sup>2</sup>, one national reserve of 10 500 km<sup>2</sup>.</li> <li>FRA • Excludes non-metropolitan France.</li> <li>NLD • Excludes the Netherlands Antilles.</li> <li>NOR • Excludes Svalbard, Jan Mayen and Bouvet islands.</li> <li>PRT • Includes Azores and Madeira.</li> <li>ESP • Includes Balears and Canaries.</li> <li>UKD • Excludes Bermuda, British Virgin Islands, Cayman Islands, Falkland Islands, St. Helena and Dependencies, South Georgia and the South Sandwich Islands, Turks and Caicos Islands.</li> </ul>

## GDP AND POPULATION

### GROSS DOMESTIC PRODUCT

Data sources:	OECD Economic Outlook 76 database; <i>National Accounts of OECD Countries</i> , OECD, Paris, 2004.	
♦ <u>Gross Domestic Product</u> :	expressed at 2000 price levels and purchasing power parities.	<ul style="list-style-type: none"> <li>♦ <u>Value added</u>: early 2000s: 2002 or latest available year; agriculture: also includes hunting, forestry and fishing; industry: includes mining and quarrying, manufacturing, gas, electricity and water, and construction; value added excludes financial intermediation services indirectly measured.</li> </ul>

### POPULATION GROWTH AND DENSITY

Data sources:	System of National Accounts, OECD database; Main Economic Indicators, OECD database; OECD Economic Outlook 75 database.	<ul style="list-style-type: none"> <li>♦ <u>Population</u>: all nationals present in or temporarily absent from a country, and aliens permanently settled in the country.</li> <li>♦ <u>Unemployment rate</u>: commonly used definitions.</li> </ul>
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## CONSUMPTION

### PRIVATE FINAL CONSUMPTION EXPENDITURE

Data sources: OECD Economic Outlook 76 database; System of National Accounts, OECD database

- ◆ Private final consumption expenditure: the sum of (i) the outlays of resident households on new durable and non-durable goods and services less their net sales of second-hand goods, scraps and wastes; (ii) the value of goods and services produced by private non-

profit institutions for own use on current account; expressed at 2000 price levels and purchasing power parities. Consumption patterns: data refer to 2002 or latest data available.

OECD • Change since 1990: excludes Hungary and Slovak Republic.

### GOVERNMENT FINAL CONSUMPTION EXPENDITURE

Data sources: OECD Economic Outlook 76 database; System of National Accounts, OECD database

- ◆ Government final consumption expenditure: the value of goods and services produced by governments for their own use on current

account; expressed at 2000 price levels and purchasing power parities.

OECD • Change since 1990: excludes Hungary and Slovak Republic.

## ENERGY

### ENERGY SUPPLY

Data sources: IEA-OECD

- ◆ see IEA (2001-2002) *Energy Balances of OECD Countries* for conversion factors from original units to Toe for the various energy sources.

- ◆ Total primary energy supply: indigenous production + imports - exports - international marine bunkers and ± stock changes. Primary energy comprises hard coal, lignite and other solid fuels, crude oil and natural gas liquids, natural gas, and nuclear, hydro, geothermal and solar electricity. Electricity trade is also included.

### ENERGY PRICES AND TAXES

Data sources: IEA-OECD

- ◆ see IEA (2004), *Energy prices and taxes, third quarter, 2004*
- ◆ Oil: light fuel oil only.
- ◆ Oil and electricity: USD using current exchange rates.

- ◆ Natural gas: USD per 10<sup>7</sup> kcal (GCV basis) using current exchange rates.
- ◆ Real energy end-use prices: refers to real energy end-use prices for industry and households. % change refer to 1980-2002 period.
- USA • Electricity prices: exclude taxes.

## TRANSPORT

### ROAD TRAFFIC

Data sources: OECD, ECMT, EUROSTAT, International Road Federation (IRF), national statistics

- ◆ Traffic volumes are expressed in billions of kilometres travelled by road vehicle; they are usually estimates and represent the average annual distance covered by vehicles, in kilometres, multiplied by the number of vehicles in operation. In principle, the data refer to the whole distance travelled on the whole network inside the national boundaries by national vehicles, with exception of two- and three-wheeled vehicles, caravans, and trailers.
- ◆ Data include Secretariat estimates and provisional data.
- ◆ Data for 2002 or 2001.
- JPN • Traffic by light vehicles, vans, pick-ups and road tractors is excluded. Fiscal year ending 31 March.

- BEL • Including motor vehicles with 2 or 3 wheels (about 1%) and ambulances.
- CZE • Excludes buses.
- DEU • Except for military vehicles, traffic by special vehicles is included.
- GRC • Data refer to inter-city traffic only.
- ISL • Traffic by local and urban buses is excluded. Toll roads and national roads only.
- NLD • Traffic by trams and subways is included.
- PRT • Provisional data, under revision.
- ESP • Data refer only to traffic on motorways and national roads.
- SWE • Data include traffic by Swedish passenger cars abroad and goods vehicles with load capacity > 3.5 tonnes.
- TUR • Data refer only to traffic on motorways and national roads.
- UKD • Data refer to Great Britain only.

### MOTOR VEHICLES

Data sources: OECD, European Conference of Ministers of Transport (ECMT), EUROSTAT, IRF, American Automobile Manufacturers' Association (AAMA), national statistics

- ◆ Total stock includes passenger cars, goods vehicles, buses and coaches. Data refer to autonomous road vehicles with four or more wheels, excluding caravans and trailers, military vehicles, special vehicles (for emergency services, construction machinery, etc.) and agricultural tractors.
- ◆ Private car ownership is expressed as passenger cars per capita. Data refer to passenger cars seating not more than nine persons

(including the driver), including rental cars, taxis, jeeps, estate cars/station wagons and similar light, dual-purpose vehicles.

- ◆ Data describe the situation as of 31 December of the year.
- ◆ Data include Secretariat estimates and provisional data.
- JPN • Include recreational vehicles. Fiscal year ending 31 March.
- AUS • Figures reported on 31<sup>st</sup> October of the reference year.
- AUT • Includes special vehicles and agricultural tractors.
- BEL • Data are reported on 1 August of the reference year.
- CZE • Includes delivery vans.
- HUN • Change in methodology in 1998. Include special-purpose vehicles.
- LUX • Figures are reported on 1<sup>st</sup> January of the reference year.

## Technical Annex

- NOR • Exclude lorries registered as mobile homes and lorries with capacity of more than 30 tonnes.  
PRT • Include recreational vehicles and vans.

### ROAD INFRASTRUCTURE

Data sources: OECD, ECMT, EUROSTAT, IRF, national statistics

- ♦ Roads refer to motorways, main or national highways, secondary or regional roads, and others. In principle, the data refer to all public roads, streets and paths in urban and rural areas, but not private roads.
  - ♦ Motorways refer to a class of roads differing from main or national, secondary or regional, and other roads.
  - ♦ Data describe the situation as of 31 December of the year.
  - ♦ Data include Secretariat estimates and provisional data.
  - ♦ Data for 2002 or 2001.
- CAN • Data refer to public network only. Figures expressed in 2-lane equivalent kilometres. Total road network in the latest years: 1408.8 thousands 2-lane equivalent km.
- MEX • Break of time series in 1994.
- USA • Exclude Bureau of Land Management roads.
- JPN • Fiscal year ending 31 March.
- AUS • Roads types taken into account changed in 1985.
- NZL • Fiscal year ending 31 March.
- AUT • Include Motorways, State, Provincial and Communal roads.

### ROAD FUEL PRICES AND TAXES

Data sources: IEA-OECD

- ♦ see IEA (2004), *Energy Prices and Taxes, Third Quarter 2004*
- ♦ **Taxes:** includes taxes that have to be paid by the consumer as part of the transaction and are not refundable.
- ♦ **Diesel fuel:** diesel for commercial use.
- ♦ **Leaded premium:** 2003 or latest available year.
- ♦ **Unleaded gasoline:** unleaded premium (95 RON) except as noted.
- ♦ **Prices:** expressed in USD at 1995 prices and PPPs.
- ♦ **Total energy consumption by road traffic:** all fuels used in road vehicles (including military) as well as agricultural and industrial

- ESP • Exclude road tractors (454445 in 2001).  
CHE • Data are reported on 30 September of the reference year.  
UKD • Total stocks include special purpose vehicles.

- BEL • Including unpaved municipal roads. Exclude agricultural roads and paths.
- CZE • Exclude approximately 70000 km of local roads.
- FIN • Urban streets, ramps and ferry routes are excluded.
- FRA • Exclude 700000km of rural roads.
- DEU • After 1992, includes an estimated 413000km of communal roads.
- GRC • Figures are based on motorways, main or national roads, and secondary or regional roads. Describes the situation as of April 30 each year.
- HUN • Figures are based on motorways, main or national roads, and secondary or regional roads. Prior 1996: include unpaved roads. 2002: exclude municipal roads.
- NLD • Include unpaved roads.
- PRT • Exclude Madeira and Azores.
- SVK • From 1995, include urban roads.
- ESP • National Road Network only. Exclude urban and interurban roads.
- SWE • Private roads are excluded.
- TUR • National and provincial roads only. Village roads are excluded.
- UKD • Data refer to Great Britain only prior to 1990.

highway use; excludes gasoline used in stationary engines, and diesel oil in tractors that are not for highway use.

- CAN • Unleaded gasoline: unleaded regular.
- MEX • Unleaded gasoline: unleaded regular.
- JPN • Unleaded gasoline: unleaded regular.
- KOR • Unleaded gasoline: unleaded regular.
- AUS • Unleaded gasoline: unleaded regular.
- BEL • Leaded premium: 2003: 2002.
- ISL • Data from Statistics Iceland.

## AGRICULTURE

### INTENSITY OF USE FROM NITROGEN AND PHOSPHATE FERTILISERS

Data sources: OECD, FAO, International Fertilizer Industry Association, national statistical yearbooks, UN/ECE, UNEP

- ♦ **Use of nitrogen and phosphate fertilisers:** data refer to the nitrogen (N) and phosphoric acid (P2O5) content of commercial fertilisers, and relate to apparent consumption during the fertiliser year (generally 1 July to 30 June) per unit of agricultural land.
  - ♦ **Agricultural land:** refers to arable and permanent crop land and permanent grassland. "Arable I." refers to all land generally under rotation, whether for temporary crops or meadows, or left fallow. "Permanent crops I." comprises those lands occupied for a long period that do not have to be planted for several years after each harvest. "Permanent grassland" includes land used for five years or more for herbaceous forage, either cultivated or growing wild.
  - ♦ Data include estimates.
  - ♦ **Phosphate fert.:** includes ground rock phosphates.
- MEX • Fertiliser year: calendar year.
- USA • Includes data for Puerto Rico.
- KOR • Fertiliser year: calendar year.
- BEL • Data for Belgium include Luxembourg.  
Phosphate fert.: excludes other citrate soluble phosphates.
- DNK • Fertiliser year: August-July.
- FRA • Phosphate fert.: fertiliser year: May-April.
- GRC • Fertiliser year: calendar year.
- HUN • Fertiliser year: calendar year.

- ISL • Fertiliser year: calendar year.
- ESP • Fertiliser year: calendar year.
- SWE • Fertiliser year: June-May. Nitrogen fert.: data include forest fertilisation.
- TUR • Fertiliser year: calendar year.
- UKD • Fertiliser year: June-May.

### AGRICULTURAL PRODUCTION

Data sources: OECD, FAO

- ♦ Data refer to indices of agricultural production based on price-weighted quantities of agricultural commodities produced for any use except as seed and feed. The commodities covered are all crops and livestock products originating in each country.
  - ♦ Data may differ from national data due to differences in concepts of production, coverage, weights, time reference and methods of calculation.
- BEL • Data for Belgium include Luxembourg. Crops % of change: 1980-2000. Total agricultural % of change: 1980-2002

### AGRICULTURAL VALUE ADDED

Data sources: OECD

- ♦ Data also include hunting, forestry and fishing.
- ♦ Data refer to 2002 or latest year available.

OECD • Secretariat

estimate.

**NITROGEN BALANCES**

Data sources: OECD

- ♦ **Nitrogen balance:** the annual total quantity of inputs includes mainly livestock manure and chemical fertilisers. The annual total quantity of outputs includes mainly crop and forage. The indicator provides information on the potential loss of nitrogen to the soil, air and to surface or groundwater. However, nitrogen loss through the volatilisation of ammonia to the atmosphere from livestock housing and stored manure is excluded from the calculation.

- ♦ **Nitrogen efficiency:** in agriculture, measures the physical nitrogen input/output ratio.
- ♦ **Nitrogen soil surface balances** over the last decade show a downward or stable trend for most OECD countries, although in a few countries nitrogen surpluses have risen. The spatial variations within countries can be considerable: even in countries with relatively low national nitrogen surplus, nitrate pollution is experienced in some localities, while soil nutrient deficits occur in others. Unfortunately, the update of Nitrogen balance will be available during the 2005 summer. For more information see the OECD website: <http://www.oecd.org/>.

**LIVESTOCK DENSITIES**

Data sources: OECD, FAO, UN/ECE

- ♦ **head of sheep equivalent:** based on equivalent coefficients in terms of manure: 1 cattle= 6 sheep; 1 sheep=1 goat=1 pig; 1 chicken= 0.06 sheep.

Coefficients used to estimate nitrogen from livestock		
	kg of dry matter per year	Coefficients for N content in excrement (% of dry matter)
Cattle	1 500	5.0
Horses	1 200	4.4
Sheep and goats	250	3.0
Pigs	250	4.4
Poultry (hens)	15	5.3

Source: IEDS-UN/ECE

- BEL • Data for Belgium include Luxembourg. Chickens density: 2003: 2002 data. Livestock % of change: 1980-2000. Total agricultural production % of change: 1980-2002.
- CZE • Selected livestock densities % of change since 1980: Data used for 1980 are Secretariat estimates.
- DNK • Sheep and goats: sheep only.
- IRL • Sheep and goats: sheep only.

Coefficients used to estimate phosphate from livestock		
	kg of dry matter per year	Coefficients for P2O5 content in excrement (% of dry matter)
Cattle	1 500	1.8
Horses	1 200	1.4
Sheep and goats	250	0.6
Pigs	250	2.5
Poultry (hens)	15	3.5

Source: IEDS-UN/ECE

- POL • Sheep and goats: sheep only.
- SVK • Selected livestock densities % of change since 1980: Data used for 1980 are Secretariat estimates. Chickens density: 2003: 2002 data.
- SWE • Sheep and goats: sheep only.
- UKD • Sheep and goats: sheep only.

**INTENSITY OF USE OF PESTICIDES**

Data sources: OECD, FAO, national statistical yearbooks, European Crop Protection Association

- ♦ Unless otherwise specified, data refer to active ingredients.
  - ♦ Unless otherwise specified, data refer to total consumption of pesticides, which include: insecticides (acaricides, molluscicides, nematocides and mineral oils), fungicides (bactericides and seed treatments), herbicides (defoliant and desiccants), and other pesticides (plant growth regulators and rodenticides).
  - ♦ Unless otherwise specified, data refers to three year averages around 2001 (2000 to 2002) and 1990 (1989 to 1991).
- CAN • Data 2000s: estimate based on Crop Life Canada's sales, average for 1999 and 2000. Survey coverage has varied greatly (different active ingredients, registrants and products); survey trends may therefore not reflect actual trends but simply changes in the survey coverage. Total includes animal repellents and fumigants. 1990: one-year average (1990).
- MEX • Data refer to national production. Early 2000s: average 1998-2000.
- USA • Data refer to agricultural pesticides only. Early 2000s: average 1997-1999.
- JPN • Data refer to sales of agricultural chemicals and are estimates from formulation weight amounts. Early 2000s : average 1999-2001.
- KOR • Data refer to national production. Early 2000s : average 1999-2001.
- AUS • Early 2000s: one-year average (1999). 1990: one-year average (1992)
- NZL • Data refer to use in agriculture. Early 2000s: one-year average (1998).
- AUT • Data refer to sales. Early 2000s : average 1999-2001.
- BEL • Data refer to sales. Early 2000s: average 1998-2000.

- CZE • Data refer to agricultural pesticides and sales of chemical pesticides. Include: animal repellents, additives, adhesives and other pesticides.
- DNK • Sales for use in plant production in open agriculture.
- FIN • Data include forest pesticides and refer to sales.
- FRA • Data refer to quantities sold to agriculture.
- DEU • Data refer to sales.
- GRC • Data refer to sales. 1990: average of 1989, 1991 and 1992.
- HUN • Data refer to sales in active ingredients, estimated as 50% of the formulated weight.
- ISL • Early 2000s: average 1999-2001.
- IRL • Data refer to sales. Early 2000s: average 1999-2001. 1990: average 1990-1992.
- ITA • Data refer to sales. Early 2000s: average 1999-2001. 1990: two years average (1992 and 1993)
- LUX • Data refer to sales. Early 2000s: average 1997-1999. 1990: two years average (1991 and 1993)
- NLD • Data refer to sales of chemical pesticides. Data include soil disinfectants, which correspond to about the half of the total consumption.
- NOR • Data refer to sales from importers to dealers/distributors.
- POL • Data include animal repellents and other pesticides.
- PRT • Data refer to sales. Early 2000s: average 1999-2001. 1990: average 1991-1993.
- SVK • Data refer to sales. 1990: average 1991-1993.
- ESP • Data refer to sales.
- SWE • A tax was applied to pesticides in 1995. Data refer to sales.
- CHE • Data refer to sales and have been estimated to represent 95 per cent of the total market volume; Liechtenstein included.
- TUR • Data refer to sales. Powdered sulphur and copper sulphate excluded. Early 2000s: average 1999-2001

UKD • Great Britain only. Data include sulphuric acid, which represents

approx. 40% (1995) of the total.

## EXPENDITURE

### POLLUTION ABATEMENT AND CONTROL EXPENDITURE

Data source: OECD

- ◆ Pollution abatement and control (PAC) expenditure according to the abater principle. PAC activities are defined as purposeful activities aimed directly at the prevention, reduction and elimination of pollution or nuisances arising as a residual of production processes or the consumption of goods and services. Excludes expenditure on natural resource management and activities such as the protection of endangered species, the establishment of natural parks and green belts and activities to exploit natural resources (such as the supply of drinking water).
- ◆ Public sector: includes public specialised producers of environmental protection services.
- ◆ Total expenditure: the sum of public, business and specialised producers expenditure (excluding households); values in USD per capita: at current prices and purchasing power parities.
- CAN • 2000 data. Business sector: excludes construction, agriculture, aquaculture, fishing and trapping, education services, health and social services; includes expenditure on pollution abatement and control and pollution prevention, environmental monitoring, environmental assessment and audits, reclamation and decommissioning, purchased waste management and sewerage service and other. Includes Secretariat estimates for other manufacturing industries.
- MEX • 2000 data. Public sector: data refer to expenditure by the federal government, the capital city government, and two public enterprises
- JPN • 1999 data. Business sector: data include a Secretariat estimate for current expenditure.
- KOR • 2000 data.
- AUS • 1996 data.
- AUT • 1999 data. Private specialised producers: Secretariat estimates.
- BEL • 2000 data.

- CZE • 2002 data. Public and business sectors: investment only. Private specialised producers: includes internal current expenditure by public producers.
- DNK • 2000 data.
- FIN • Public sector: 2000 data. Business sector (1999): data include payments for bought services.
- FRA • 2002 data.
- DEU • Public sector and total: 1999 data. Business sector: 2000 data. Partial total not including investments in integrated technologies and expenditure by private specialised producers.
- GRC • 1999 data.
- HUN • 1998 data. Public and business sectors: investment only. Private specialised producers: internal current expenditure by public and private producers.
- ISL • 2000 data including expenditure on wastewater and waste only.
- IRL • 1998 data.
- ITA • Public sector (2000): Eurostat estimate derived from National accounts data reported under the COFOG category 05 "Environmental protection". Business sector (1997): data refer to enterprises with 20 employees or more and do not include investments in integrated technologies. Total: 1997 data.
- LUX • 1997 data.
- NLD • 1998 data.
- POL • 2000 data.
- PRT • 2000 data.
- SVK • 2000 data.
- ESP • 1999 data. Business sector and total: Secretariat estimates.
- SWE • Secretariat estimates for 2002.
- CHE • 1999 provisional data.
- TUR • 1997 data.
- UKD • 2000 data. Business sector: data refer to enterprises within ISIC/NACE 10-41 only.

### OFFICIAL DEVELOPMENT ASSISTANCE

Data source: OECD-DAC

- ◆ Data refer to loans (except military loans), grants and technical co-operation by the public sector to developing countries. Data cover

OECD Development Assistance Committee (DAC) Member countries. The new System of National Accounts (SNA) tends to depress donors' ODA/GNP ratios in the mid-1990s.



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2004-2005

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Ms F. ZEGEL  
Consultant: Ms M. J. SANTOS

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