

# Environment statistics Pocketbook

**Data 1980-1999**



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THEME 8  
Environment  
and energy



A great deal of additional information on the European Union is available on the Internet.  
It can be accessed through the Europa server (<http://europa.eu.int>).

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## Foreword

Welcome to the second edition of Eurostat's environment pocketbook. This booklet contains data selected on the basis of relevance to Community environmental policy and availability of solid data and time series. In reference to the DPSIR model (Driving forces, Pressure, State, Impact, Response), this edition includes:

- Driving forces data for agriculture, energy, transport and tourism;
- Pressure data on air pollution, water and waste;
- Response data on water and waste treatment, and more generally on environmental protection expenditure.

Data sets cover the European Union and have been extended to EU Candidate Countries and EFTA countries whenever possible. More detailed data on the same topics can be found in electronic form in Eurostat's 2001 edition of the Environment Statistics Yearbook on CD-Rom (Office for Official Publications of the European Communities, Luxembourg, KS-40-01-658-3A-Z).

Data on waste, water and environmental expenditure were collected through the OECD/Eurostat Questionnaire on the State of the Environment and were compiled jointly by both organisations. Data from other sources were added when necessary, in particular air emissions data from the EEA. Data on driving forces are the result of regular data collections or surveys by Eurostat and the National Statistical Offices.

We believe that this booklet gives valuable and objective information to our citizens on a number of environmental problems of general concern. It will also help to support the European Sustainable Development Strategy as approved at the Gothenburg Council in Spring 2001.

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## Symbols and abbreviations

### Symbols

:	no data available
0	figure less than half of the unit used
-	nil (zero)
%	percentage
	break in series
&	and

### Units of measurement

ECU	European Currency Unit
GWh	Gigawatt hour
ha	hectare
kg	kilogram
km	kilometre
m <sup>3</sup>	cubic metre
mio	million (10 <sup>6</sup> )
pkm	passenger-kilometre
t	tonne
toe	tonne of oil equivalent

### Chemical and related symbols

CFC	Chlorofluorocarbons
CH <sub>4</sub>	Methane
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
HFC	Hydrofluorocarbons
K <sub>2</sub> O	Potassium oxide (Potash)
N	Nitrogen
NH <sub>3</sub>	Ammonia
NMVOOC	Non-methane volatile organic compounds
N <sub>2</sub> O	Nitrous oxide
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
PCF	Perfluorocarbons
P <sub>2</sub> O <sub>5</sub>	Phosphate
SF <sub>6</sub>	Sulphur hexafluoride
SO <sub>2</sub>	Sulphur dioxide

### **Abbreviations of countries (EU)**

EU-15	The fifteen Member States of the EU
EURO-ZONE	The 12 Member States that adopted the EURO as the national currency from the 1st January 2001: B, D, EL, E, F, IRL, I, L, NL, A, P, FIN.
B	Belgium
DK	Denmark
D	Germany
EL	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	Netherlands
A	Austria
P	Portugal
FIN	Finland
S	Sweden
UK	United Kingdom

### **Other countries**

IS	Iceland
NO	Norway
CH	Switzerland
LI	Liechtenstein
AL	Albania
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
EE	Estonia
HU	Hungary
LV	Latvia
LT	Lithuania
MT	Malta
PL	Poland
RO	Romania
SK	Slovak Republic
SI	Slovenia
TK	Turkey

### **Other Abbreviations**

EEA	European Environment Agency
EPE	Environmental Protection Expenditure
F	Forest
FAO	Food and Agricultural Organisation of the United Nations
FAWS	Forest available for wood supply
FOWL	Forest and other wooded land
GDP	Gross Domestic Product
NACE	Statistical Classification of economic activities in the European Community
OECD	Organisation for Economic Cooperation and Development (Paris)
O.J.	Official Journal of the European Union
OWL	Other wooded land
UAA	Utilised Agricultural Area
UN	United Nations
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change



# AIR POLLUTION AND CLIMATE CHANGE

There are four main areas of concern related to air emissions:

- The increase of greenhouse gases, mainly carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), in the atmosphere leads to an increase of the global temperature, with potential impact on the climate;
- Pollutants such as sulphur dioxides (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and ammonia (NH<sub>3</sub>) increase acidification of soil and water and damage buildings;
- Human and animal health is affected directly through high concentrations of particles and non-methane volatile organic compounds (NMVOC) and indirectly through the so-called ozone-precursors (NMVOC, NO<sub>x</sub>, CH<sub>4</sub> and carbon monoxide (CO), responsible for high ozone concentrations in the troposphere;
- The ozone layer in the stratosphere, responsible for filtering out harmful UV rays contained in the sunlight, is depleted by artificial gases such as halons, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).

International and EU bodies have addressed these concerns by setting clear targets for reduction of air emissions:

- Under the Kyoto protocol of the UN Framework Convention for Climate Change (1997), the EU agreed to reduce emissions of greenhouse gases by 8% by 2008-2012 compared with 1990 levels. This is one key priority for the 6th Environmental Action Program as a first step to the long term target of a 70% cut;
- In 1999, a new protocol of the Long Range Transboundary Air Pollution (LRTAP) Convention on the reduction of pollutants was signed. The reduction targets from 1990 levels are 75% for SO<sub>2</sub>, 50% for NO<sub>x</sub>, 58% for NMVOCs and 12% for NH<sub>3</sub> by 2010;
- In the 5th Environmental Action Program (and confirmed in the 6th EAP) the EU set reduction targets of 35 % for SO<sub>2</sub> by 2000 compared to 1985, of 30% for NO<sub>x</sub> by 2000 compared to 1990, and of 30% for NMVOC by 1999 compared to 1990;
- The 1987 Montreal Protocol required the use of halons to be phased out by 1994, CFCs by 2010. In the EU, halons have been completely phased out, and the production and consumption of CFCs are limited to essential (medical and laboratory) uses. Production of HCFCs, which are viewed as a transitional alternative to CFCs, should be phased out between 2008 and 2025.

Tables included here show that objectives for the reduction of acid emissions are likely to be met. For the greenhouse gases further efforts will be necessary to meet the objectives. Data on CFCs and HCFCs available for international publications are scarce and therefore is not included.



## 1. Air pollution and climate change

### Emissions of acidifying pollutants by country

(Acid equivalents 1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	1 130	1 023	858	811	773	726	686	669	636
B	25	25	22	21	21	20	19	19	18
DK	24	19	18	17	16	18	15	13	12
D	363	270	177	159	142	122	111	103	98
EL	27	28	29	28	30	29	29	30	30
E	120	117	112	113	108	103	103	103	103
F	135	127	117	114	112	112	107	107	102
IRL	13	15	14	15	15	14	15	16	15
I	123	121	109	106	107	101	96	93	87
L	1	1	2	1	1	1	1	1	1
NL	35	32	28	25	24	24	25	23	22
A	15	12	10	10	10	10	10	9	9
P	14	24	25	24	25	24	24	26	26
FIN	20	17	12	12	11	11	11	11	10
S	21	17	16	15	14	13	11	11	11
UK	194	197	167	151	137	125	110	106	91
IS	1	2	2	2	2	2	1	1	1
NO	9	8	7	7	7	7	7	7	7

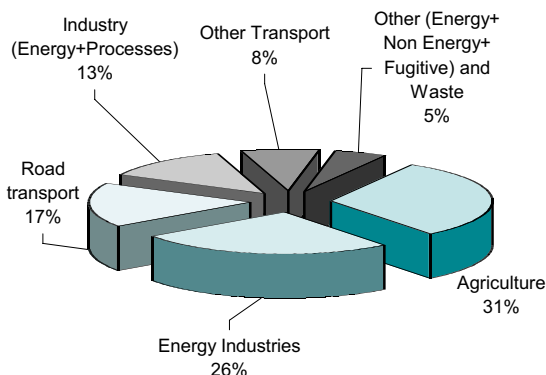
Includes SO<sub>2</sub>, NO<sub>x</sub> and NH<sub>3</sub> emissions.

Source: EEA

### EU-15 emissions of acidifying pollutants by sector

(SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>)

1999



Fugitive emissions: unintended gas leaks from the processing, transmission, and/or transportation of fossil fuels.

Source: EEA



### Total man-made emissions of sulphur dioxide (SO<sub>2</sub>)

(1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	19 370	16 362	12 346	11 151	10 190	8 843	7 793	7 488	6 734
B	400	371	296	253	246	240	221	212	187
DK	340	183	158	156	149	180	110	77	56
D	7 397	5 323	2 945	2 472	1 993	1 403	1 126	900	832
EL	550	506	551	526	551	542	528	541	541
E	2 393	2 048	1 920	1 875	1 722	1 497	1 497	1 497	1 497
F	1 268	1 279	1 053	989	933	912	766	807	682
IRL	186	186	161	175	161	147	166	176	157
I	1 901	1 653	1 333	1 272	1 322	1 205	1 076	1 038	923
L	16	15	15	13	9	8	6	4	4
NL	261	203	164	146	147	135	118	107	100
A	190	91	60	57	56	53	51	47	42
P	343	360	360	339	366	324	341	375	375
FIN	260	259	122	114	95	105	99	90	87
S	132	132	103	98	93	83	52	52	64
UK	3 734	3 754	3 105	2 665	2 348	2 010	1 637	1 567	1 187

Source: EEA

### Total man-made emissions of nitrogen oxides (NO<sub>x</sub>)

(1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	13 233	13 284	12 227	11 824	11 446	11 209	10 701	10 371	9 936
B	319	339	343	343	337	315	306	314	291
DK	294	272	268	271	251	292	250	232	210
D	3 328	2 705	2 188	2 038	1 967	1 877	1 781	1 710	1 637
EL	412	326	331	343	341	358	362	382	382
E	929	1 156	1 200	1 212	1 213	1 192	1 192	1 192	1 192
F	1 875	1 865	1 771	1 732	1 699	1 684	1 635	1 592	1 529
IRL	118	118	119	115	115	120	119	122	119
I	1 614	1 938	1 900	1 791	1 768	1 745	1 664	1 594	1 485
L	21	23	25	23	21	22	18	17	16
NL	573	580	535	510	498	501	469	438	424
A	217	193	175	182	170	166	172	171	171
P	306	317	342	345	358	354	361	369	369
FIN	284	299	282	281	258	268	259	251	247
S	398	398	391	379	361	302	270	255	261
UK	2 545	2 756	2 358	2 260	2 088	2 013	1 844	1 732	1 603
NO	210	219	217	214	214	223	224	225	231

Source: EEA



## 1. Air pollution and climate change

### Total man-made emissions of ammonia (NH<sub>3</sub>)

(1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	3 921	3 791	3 513	3 501	3 491	3 506	3 569	3 568	3 555
B	74	107	97	95	97	98	98	102	103
DK	152	128	117	112	105	101	100	101	96
D	845	764	638	641	635	637	627	633	623
EL	79	79	75	73	86	73	71	74	74
E	424	473	449	471	466	518	518	518	518
F	813	790	768	774	782	795	803	808	804
IRL	112	112	117	119	120	122	123	127	127
I	493	466	449	459	461	429	443	437	448
L	8	8	9	7	7	7	7	7	7
NL	259	226	191	166	147	146	189	164	169
A	82	80	76	76	74	73	72	72	70
P	98	105	99	93	102	99	101	103	103
FIN	41	41	39	38	38	39	41	38	35
S	74	74	71	58	61	61	62	61	55
UK	366	338	317	319	311	308	315	323	322
NO	23	23	25	25	26	27	26	27	27

Source: EEA

### Emissions of tropospheric ozone precursors by country

(tropospheric ozone formation potential TOFP)

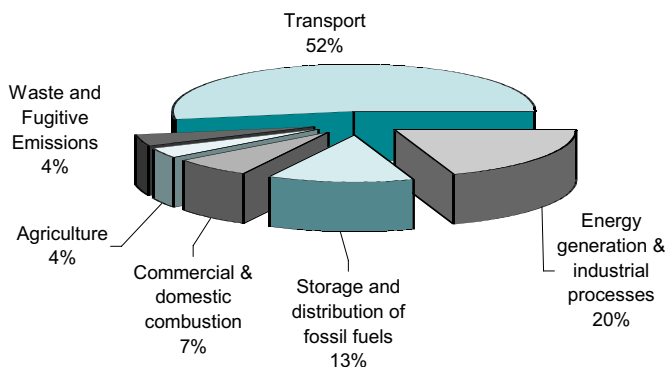
	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	38 110	37 183	33 593	32 539	31 509	30 274	29 098	28 150	26 983
B	1 215	887	849	838	817	768	756	775	738
DK	676	582	562	553	524	575	508	487	448
D	8 599	7 832	5 903	5 479	5 211	4 923	4 668	4 445	4 239
EL	1 140	883	905	928	932	974	988	1 036	1 036
E	4 139	3 742	3 636	3 730	3 623	3 591	3 592	3 591	3 594
F	6 432	5 961	5 533	5 279	5 148	4 998	4 813	4 680	4 478
IRL	274	306	301	292	287	299	302	307	280
I	4 834	5 444	5 518	5 391	5 404	4 859	4 653	4 431	4 177
L	62	67	72	62	54	55	46	40	39
NL	1 391	1 359	1 180	1 128	1 087	1 089	988	928	889
A	801	731	619	614	590	571	575	558	541
P	440	898	1 009	1 008	1 039	1 008	1 073	1 063	1 063
FIN	618	639	592	582	551	554	544	531	532
S	1 257	1 171	1 107	1 048	1 012	939	860	842	848
UK	6 235	6 680	5 808	5 605	5 231	5 072	4 732	4 437	4 082
IS	38	54	55	60	61	55	49	48	48
LI	2	3	3	3	3	3	3	3	3
NO	585	660	686	696	707	719	712	691	694

Includes CH<sub>4</sub>, CO, NMVOC and NO<sub>x</sub> emissions.

Source: EEA



## EU emissions of tropospheric ozone precursor gases by sector (NO<sub>x</sub>, NMVOC, CO and CH<sub>4</sub>) 1999



Source: EEA

## Total man-made emissions of carbon monoxide (CO)

(1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	51 119	50 104	43 905	41 605	40 269	38 691	36 887	35 605	34 065
B	1 112	1 112	1 105	1 054	1 032	1 008	948	967	944
DK	741	704	662	622	605	624	567	601	541
D	12 438	11 213	7 704	7 064	6 668	6 234	5 830	5 341	4 953
EL	1 328	1 328	1 317	1 310	1 339	1 385	1 406	1 500	1 500
E	3 476	3 899	3 884	3 860	3 446	3 661	3 661	3 661	3 661
F	10 870	10 773	9 657	8 981	8 862	8 276	7 853	7 614	7 179
IRL	401	401	350	329	304	307	312	318	285
I	7 692	7 822	7 753	7 549	7 755	6 971	6 682	6 317	6 051
L	193	176	233	145	107	103	81	51	50
NL	1 306	1 196	961	907	893	904	767	740	696
A	1 549	1 307	1 177	1 151	1 049	1 024	1 024	970	865
P	1 042	1 114	1 268	1 234	1 201	1 178	1 143	1 095	1 095
FIN	556	558	457	444	436	460	473	451	546
S	1 347	1 347	1 236	1 108	1 081	1 090	956	1 020	939
UK	7 068	7 155	6 140	5 847	5 492	5 468	5 184	4 960	4 760
NO	943	821	746	738	701	670	635	601	566

Source: EEA



## 1. Air pollution and climate change

### Total man-made emissions of non-methane volatile organic compounds (NMVOC)

(1 000 t)

	1985	1990	1993	1994	1995	1996	1997	1998	1999
EU-15	15 357	15 173	13 577	13 275	12 854	12 087	11 733	11 336	10 872
B	660	343	300	295	284	265	270	277	271
DK	198	169	159	151	147	147	137	134	128
D	3 274	3 220	2 326	2 159	2 023	1 897	1 805	1 724	1 651
EL	627	333	350	359	362	378	385	398	398
E	1 690	1 880	1 720	1 802	1 738	1 707	1 707	1 707	1 707
F	2 535	2 459	2 267	2 135	2 056	1 990	1 914	1 860	1 785
IRL	110	110	108	107	104	110	114	115	95
I	1 992	2 192	2 322	2 349	2 367	1 936	1 860	1 764	1 672
L	15	19	16	18	16	17	15	13	13
NL	538	502	405	389	365	362	316	297	281
A	359	345	269	259	260	249	246	236	231
P	315	380	444	443	462	437	499	484	484
FIN	209	209	195	188	185	173	173	172	168
S	533	533	489	460	448	446	421	414	422
UK	2 302	2 479	2 209	2 162	2 037	1 974	1 872	1 739	1 566
NO	228	302	340	354	369	373	369	350	351

Source: EEA



## Emissions of greenhouse gases by country

(mio t global warming potentials)

	1990	1995	1996	1997	1998	1999
EU-15	4 199	4 080	4 161	4 095	4 112	4 034
B	136	149	153	145	145	145
DK	70	77	90	80	76	73
D	1 207	1 061	1 076	1 039	1 020	982
EL	105	111	114	119	124	123
E	306	337	332	349	358	380
F	546	538	553	544	557	545
IRL	53	57	59	61	64	65
I	518	525	519	525	536	541
L	11	8	8	7	6	6
NL	216	233	241	237	237	230
A	77	78	79	81	79	79
P	65	73	71	74	77	79
FIN	77	75	81	79	77	76
S	70	73	77	71	73	71
UK	742	685	706	683	682	638

Includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC and SF<sub>6</sub>.

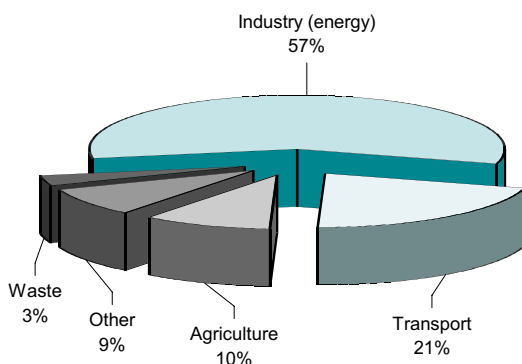
CO<sub>2</sub> emissions without land use change, and forestry.

Source: EEA.

## EU emissions of greenhouse gases

(CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC and SF<sub>6</sub>)

1999



Source: EEA



## 1. Air pollution and climate change

### Total man-made emissions of carbon dioxide (CO<sub>2</sub>)

(1 000 t)

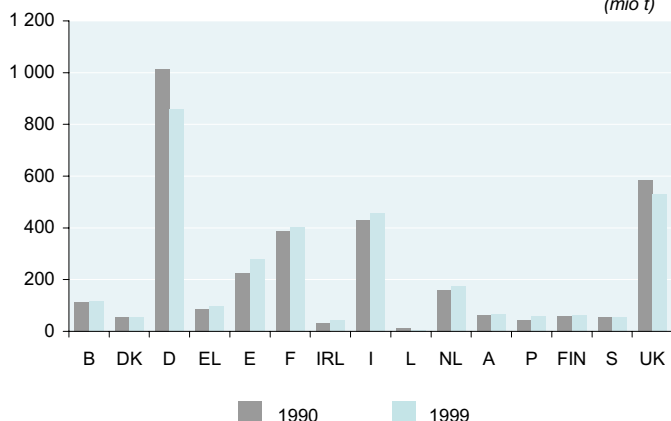
	1990	1995	1996	1997	1998	1999
EU-15	3 325 370	3 258 070	3 332 938	3 272 091	3 316 965	3 270 520
B	113 997	125 576	129 654	121 340	121 975	116 998
DK	53 045	60 686	74 035	64 540	60 203	56 976
D	1 014 500	903 737	924 621	893 524	888 264	858 511
EL	84 346	87 778	90 208	94 757	99 345	98 452
E	226 057	252 958	240 848	257 713	268 479	281 059
F	385 490	381 996	395 858	389 579	410 684	404 695
IRL	31 575	34 501	35 700	38 071	40 019	41 887
I	437 750	442 457	437 405	440 170	454 200	456 533
L	10 152	7 078	7 098	6 086	5 179	5 449
NL	161 173	177 130	184 721	181 166	180 913	174 126
A	62 132	63 754	64 889	66 829	65 489	65 778
P	44 134	52 019	50 386	52 633	55 743	57 882
FIN	62 466	62 684	68 130	66 911	64 601	64 186
S	55 074	58 521	63 001	57 087	58 142	56 458
UK	583 479	547 194	566 383	541 686	543 729	531 529

CO<sub>2</sub> emissions without land use change and forestry.

Source: EEA.

### Carbon dioxide (CO<sub>2</sub>) emissions

(mio t)



Source: EEA





### Total man-made emissions of methane (CH<sub>4</sub>)

(1 000 t)

	1990	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	20 955	19 895	19 353	18 842	18 782	18 447	18 051	17 636	17 445
B	612	613	624	598	597	597	584	581	581
DK	279	281	286	281	279	279	272	287	269
D	5 571	4 654	4 267	4 022	3 894	3 570	3 477	3 353	3 271
EL	450	463	464	473	476	490	497	519	514
E	1 654	1 723	1 749	1 796	1 843	1 938	2 028	1 935	2 145
F	3 109	3 179	3 209	3 212	3 265	3 220	2 967	2 939	2 841
IRL	611	620	624	627	634	646	655	649	634
I	1 915	1 849	1 838	1 894	1 915	1 924	1 963	1 963	1 965
L	24	24	24	22	22	24	24	23	23
NL	1 293	1 256	1 225	1 203	1 172	1 163	1 103	1 062	1 034
A	538	514	508	500	489	481	470	459	454
P	613	607	593	605	604	603	607	605	604
FIN	292	256	238	222	221	213	204	193	187
S	324	328	325	320	316	316	311	304	294
UK	3 670	3 528	3 380	3 068	3 053	2 984	2 891	2 763	2 631

Source: EEA.

### Total man-made emissions of nitrous oxide (N<sub>2</sub>O)

(1 000 t)

	1990	1992	1993	1994	1995	1996	1997	1998	1999
EU-15	1 272	1 234	1 187	1 219	1 224	1 254	1 244	1 167	1 092
B	31	30	31	35	36	37	33	34	34
DK	36	33	33	33	33	32	31	31	31
D	214	215	206	207	209	215	201	160	141
EL	33	39	32	32	31	33	33	34	33
E	133	128	120	127	124	139	132	133	142
F	306	294	281	287	292	295	298	272	254
IRL	29	29	29	30	31	31	31	32	33
I	128	130	131	127	132	130	134	126	129
L	1	1	1	1	1	1	1	1	1
NL	64	69	69	71	72	72	74	73	73
A	7	7	7	7	7	7	7	7	7
P	25	26	25	25	26	26	27	27	28
FIN	27	24	24	24	25	25	26	26	25
S	23	22	22	23	22	23	23	24	23
UK	216	187	176	190	182	188	194	188	138

Source: EEA.

## 2 WATER

A wide range of human activities affects water availability and quality especially in areas of high population density, concentrated industrial activity and intense agriculture. Water availability is mainly a problem in southern countries, where water reserves are limited and large amounts are used for irrigation. Water quality is affected by industrial production, animal husbandry, arable farming, household discharges, etc. Effective waste water treatment is essential to reduce pollution.

The targets for the EU Sixth Environmental Action Program (Environment 2010: Our future, Our Choice) as proposed by the Commission to the Council and to the Parliament, are the following for the year 2010:

- to achieve levels of water quality that do not give rise to unacceptable impacts on, and risks to, human health;
- to ensure that the rates of extraction from water resources are sustainable over the long term;
- to prevent the pollution of ground water from any sources.

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000, establishes a framework for Community action in the field of water policy and has the objective to establish a Community framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater, in order to prevent and reduce pollution, promote sustainable water use, protect the aquatic environment, improve the status of aquatic ecosystems and mitigate the effects of floods and droughts.

The following tables give information on the availability and use of water and on the waste water treatment in many European countries.



## 2. Water

### Water resources - long term annual average (LTAA)

	Precipitation	Evapo-transpiration	Internal resources	Inflow	Outflow	Total fresh water resources 1-2+3	
	1	2	1-2	3	4	(mio m <sup>3</sup> )	(m <sup>3</sup> /capita)
B	27 100	14 700	12 400	4 100	8 400	16 500	1 639
DK	28 761	22 646	6 115	0	6 000	6 115	1 176
D	278 000	167 000	111 000	71 000	178 000	182 000	2 257
EL	115 000	55 000	60 000	12 000	:	72 000	6 971
E	346 000	235 000	111 000	0	80 825	111 000	2 842
F	475 000	295 000	180 000	11 000	168 000	191 000	3 318
IRL	80 825	31 627	49 198	3 000	40 000	52 198	14 581
I	296 000	129 000	167 000	8 000	155 000	175 000	3 067
L	2 030	1 125	905	739	1 600	1 644	4 150
NL	30 100	19 500	10 600	80 400	86 000	91 000	5 966
A	98 000	43 000	55 000	29 000	84 000	84 000	10 620
P	81 456	43 571	37 885	35 000	34 000	72 885	7 351
FIN	222 000	115 000	107 000	3 200	110 000	110 000	21 749
S	335 600	165 600	170 000	9 000	179 000	179 000	20 588
UK	263 645	118 617	145 028	2 301	164 579	143 850	2 474
IS	200 000	30 000	170 000	:	170 000	170 000	647 666
NO	458 000	76 000	382 000	11 000	393 000	393 000	91 103
CH	60 100	19 950	40 150	13 100	53 500	53 250	7 721
CY	4 700	:	:	:	:	790	1 124
CZ	54 653	39 416	15 237	740	15 977	15 977	1 547
HU	58 000	52 000	6 000	114 000	120 400	120 000	11 669
LV	43 443	26 569	16 874	17 350	34 224	34 224	13 281
LT	44 010	28 500	15 510	8 990	25 897	24 500	6 600
PL	193 100	138 300	54 800	8 300	63 100	63 100	1 644
RO	154 000	114 585	39 415	39 415	17 930	42 293	1 852
SK	37 352	24 278	13 074	67 252	81 680	80 326	15 079
SI	22 298	14 892	7 406	13 405	29 855	20 811	10 442
TR	501 000	274 000	227 000	7 000	226 000	234 000	3 889

NL: excludes underground flows (estimated at 2 km<sup>3</sup>).

FIN: national estimates.

CH: excludes inflow from Liechtenstein (about 1%).

Source: Eurostat / New Cronos.



## Water abstraction by source

(mio m<sup>3</sup>)

	% of total abstraction of renew. water resour.	Water abstraction							
		Surface water				Groundwater			
		1985	1990	1995	1999	1985	1990	1995	1999
B	45.1	:	:	7 466	6 802	:	:	679	641
DK	12.3	:	:	:	20	:	1 261	887	734
D	23.8	:	39 180	35 751*	:	:	7 092	7 623*	:
EL	10.7	:	5 827*	4 614*	:	:	2 009*	3 119*	:
E	36.8	40 840	31 400	27 880	35 323	5 410	5 500	5 408	5 532
F	15.9	28 714	31 485	34 644	24 240	6 173	6 201	6 027	6 101
IRL	2.3	:	:	951	:	:	:	225	:
I	29.7	40 000	:	:	:	12 000	:	:	:
L	3.7	22	:	28	29	45	:	29	32
NL	5.1	8 242	6 751	3 502	:	1 108	1 049	1 153	:
A	4.2	2 195	2 561	2 285	2 496	1 168	1 174	1 083	1 065
P	15.2	:	4 223	:	4 800	:	3 065	:	6 290
FIN	2.1	3 680	2 087	2 298	2 043	320	240	258	285
S	1.5	2 348	2 360	2 068	:	622	608	643	:
UK	22.4	10 426	11 528	9 482	12 828	2 521	2 709	2 634	2 428
IS	0.1	8	7	6	4	104	160	158	152
NO	0.5	1 620	:	:	:	405	:	:	:
CH	4.8	1 693	1 724	1 679	1 689	953	941	892	877
BG	:	:	3 257	2 034	2 645	:	1 513	942	835
CY	47.3	:	66	:	:	:	309	:	:
CZ	12.4	2 873	2 787	2 024	1 419	806	836	719	557
EE	:	2 620	2 720	1 430	1 228	427	495	350	299
HU	4.7	4 880	5 266	5 079	4 822	1 386	1 026	897	831
LV	0.9	:	352	222	174	:	303	195	133
LT	19.0	2 329	3 813	4 278	4 461	481	498	304	183
PL	17.9	13 076	11 928	10 078	9 339	2 377	2 320	1 988	1 936
RO	20.3	:	14 670	9 020	7 436	:	2 840	1 280	1 134
SK	1.4	1 389	1 388	808	684	671	728	578	465
SI	1.6	337	279	222	169	160	165	164	159
TR	15.2	14 100	25 600	27 500	29 552	5 300	6 600	7 600	6 000

\*: Eurostat estimates

NL: the fall in surface water abstractions in 1995 is due to a reduction of water abstraction for electricity cooling purposes.

UK: data refer to England and Wales. The fall in surface water abstractions in 1995 is largely a result of reduced abstractions for electricity generation.

Source: Eurostat / New Cronos.



## 2. Water

### Water abstraction by source per capita

(m<sup>3</sup>/capita)

	Water abstraction							
	Surface water				Groundwater			
	1985	1990	1995	1999	1985	1990	1995	1999
B	:	:	737	665	:	:	67	63
DK	:	:	:	4	:	245	170	138
D	:	494	438*	:	:	89	93*	:
EL	:	573*	441*	:	:	198*	298*	:
E	1 063	808	711	896	141	142	138	140
F	519	555	596	411	112	109	104	103
IRL	:	:	264	:	:	:	62	:
I	707	:	:	:	212	:	:	:
L	60	:	68	67	123	:	71	73
NL	569	452	227	:	76	70	75	:
A	290	331	284	308	154	152	135	132
P	:	427	:	481	:	310	:	630
FIN	751	419	437	396	65	48	51	55
S	281	276	234	:	74	71	73	:
UK	184	200	162	216	44	47	45	41
IS	33	27	22	14	431	628	591	548
NO	390	:	:	:	98	:	:	:
CH	262	257	238	236	147	140	127	123
BG	:	362	242	322	:	168	112	102
CY	:	96	:	:	:	453	:	:
CZ	278	269	196	138	78	81	70	54
EE	1 714	1 731	964	851	279	315	236	207
HU	461	508	497	479	131	99	88	83
LV	:	132	88	72	:	113	78	55
LT	657	1 024	1 152	1 206	136	134	82	49
PL	351	313	261	242	64	61	52	50
RO	:	632	398	331	:	122	56	50
SK	269	262	151	127	130	137	108	86
SI	171	140	112	85	81	83	83	80
TR	:	456	454	459	:	118	125	93

\*: Eurostat estimates.

NL: 1995: the fall in surface water abstractions is due to a reduction of water abstraction for electricity cooling purposes.

UK: data refer to England and Wales only.

1995: the fall in surface water abstractions is largely a result of reduced abstractions for electricity generation.

Source: Eurostat / New Cronos.



## Water abstraction by sector, latest available year

(mio m<sup>3</sup>)

	Year	Public Water Supply	Production of electricity	Agriculture	Manufacturing Industry
B	1998	730	4 244	18	1 404
DK	1996	514	:	360	53
D	1995	5 810	27 777	616	6 043
EL	1997	861	124	7 600	110
E	1997	5 393	5 679	27 863	1 920
F	1997	5 890	17 211	3 350	3 890
IRL	1994	470	277	179	250
I	1998	10 116	10 678	25 852	9 554
L	1999	38	:	:	14
NL	1996	1 267	2 411	230	740
A	1997	604	1 571	100	1 286
P	1998	759	1 237	8 767	373
FIN	1999	404	256	50	1 569
S	1995	936	69	137	1 440
UK	1998	6 119	232	2 149	907
IS	1999	74	:	70	10
NO	1996	860	:	293	:
CH	1998	1 063	1 503	:	:
BG	1998	2 416	539	28	399
CY	1994	55	:	180	0.5
CZ	1999	830	544	13	429
EE	1999	:	1 124	38	52
HU	1998	720	4 263	407	119
LV	1999	24	20	50	51
LT	1999	:	4 595	94	53
PL	1999	2 393	6 781	1 045	800
RO	1999	2 770	3 640	1 027	949
SK	1999	431	:	24	671
SI	1997	254	:	:	72
TR	1997	4 650	48	27 204	3 500

Agricultural data refers mainly to irrigation.

UK: data refer to England and Wales.

EE: data refer to water supply.

LT: data refer to water supply.

Source: Eurostat / New Cronos.



## 2. Water

### Population connected to public sewerage system - Total

(% of total population)

	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
B	:	:	:	:	:	:	81.1	81.1	81.2	82.4	:
DK	89.3	86.1	86.7	86.6	86.9	86.6	87.3	87.5	88.3	89.0	:
D	:	:	90.2	:	:	:	92.1	:	:	93.2	:
EL	:	:	:	:	:	:	:	:	:	:	:
E	:	:	:	55.3	:	:	:	:	:	:	:
F	:	:	:	:	:	:	81.0	:	:	:	:
IRL	:	66.0	66.0	:	:	:	:	:	:	:	:
I	:	:	:	:	:	:	:	:	:	:	:
L	:	90.4	90.4	:	:	87.3	87.5	:	:	:	93.0
NL	93.1	95.0	95.5	96.2	96.9	97.0	97.2	97.4	97.5	97.7	97.9
A	65.0	72.0	:	:	75.7	:	75.7	:	:	81.5	:
P	:	55.3	:	:	:	60.7	:	:	:	82.1	:
FIN	73.0	76.0	78.0	78.0	78.0	78.0	78.0	78.0	78.0	79.0	80.0
S	100.0	94.0	94.0	95.0	:	:	93.0	:	:	93.0	:
UK	96.0	95.0	96.0	96.0	96.0	97.0	96.0	96.0	94.0	:	:
IS	:	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
NO	:	77.0	:	:	80.0	80.0	80.0	80.0	80.0	80.0	80.0
CH	:	:	91.0	91.0	:	:	94.0	:	95.0	95.5	95.8
BG	:	:	66.3	66.5	66.5	66.5	66.5	66.5	66.5	66.7	:
CZ	70.4	72.6	72.3	72.7	72.8	73.0	73.2	73.3	73.5	74.4	74.6
EE	:	:	:	:	:	:	:	:	:	70.0	70.0
HU	:	:	:	35.0	42.7	43.5	45.0	45.0	46.0	48.0	:
PL	:	:	:	:	:	:	52.0	53.0	54.0	56.0	58.0
RO	:	:	:	51.4	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	53.0	54.0	54.0	:
SI	:	:	:	:	:	:	:	:	:	53.0	53.0
TR	:	:	:	:	:	61.6	62.5	:	:	:	:

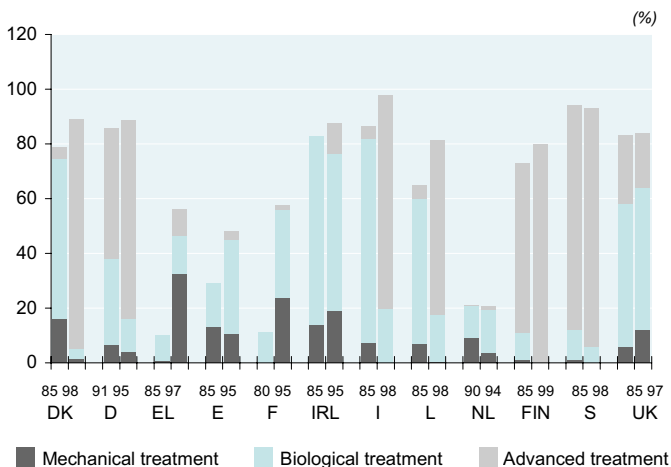
NL: 1999: national estimates.

UK: 1995: data refer to Great Britain (Scotland, England and Wales).

Source: Eurostat / New Cronos.

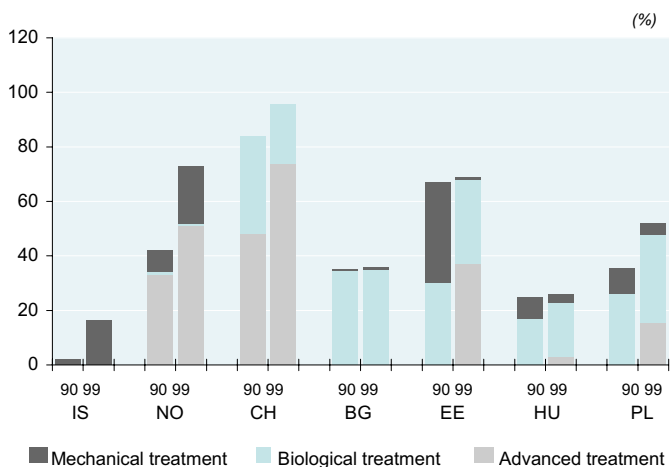


### Evolution of the population connected to public sewerage system with treatment - EU-15



Source: Eurostat / New Cronos

### Evolution of the population connected to public sewerage system with treatment - Other European countries



Source: Eurostat / New Cronos





## 2. Water

### Sewage sludge production - Total

(mio kg dry solids)

	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
B	:	:	:	58	:	72	88	80	85	78	:
DK	:	:	:	170	210	170	167	162	151	154	:
D	:	:	2 956	:	:	:	2 642	:	:	:	:
EL	:	48	:	:	:	:	:	:	38	:	:
E	:	219	270	528	404	404	:	686	689	:	:
F	:	:	:	865	:	:	900	:	814	:	:
IRL	:	:	:	:	37	:	29	:	:	:	:
I	:	816	:	:	2 177	:	:	:	:	:	:
L	15	:	:	:	:	:	:	:	:	:	17
NL	217	320	329	330	340	347	362	368	359	358	:
A	:	:	:	:	:	:	:	:	216	212	:
P	:	:	8	25	:	:	:	:	:	:	:
FIN	137	157	162	150	:	158	141	130	136	:	:
S	:	217	:	:	:	:	230	:	:	231	:
UK	:	1 052	1 072	1 019	1 014	1 039	1 124	1 079	1 005	1 058	:
NO	:	:	45	:	70	72	76	79	88	93	104
CH	230	260	:	:	200	200	:	190	:	200	:
CZ	149	166	167	168	169	169	170	178	176	186	198
HU	:	:	:	:	:	84	87	81	81	87	:
LT	:	:	:	:	:	:	:	400	485	486	535
PL	:	:	:	:	:	:	318	327	363	340	354
SK	:	:	:	:	:	:	84	83	89	117	:
SI	:	:	:	:	:	:	:	:	:	7	:

B: data refer to total sludge disposal.

DK: 1992: data refer to total sludge disposal.

I: 1990: different coverage of surveys.

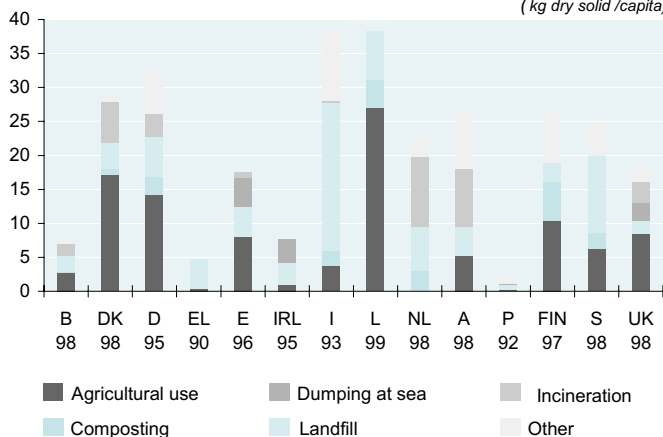
NO: data refer to total sludge disposal.

Source: Eurostat / New Cronos.



### Sewage sludge disposal per capita - EU-15 latest available year

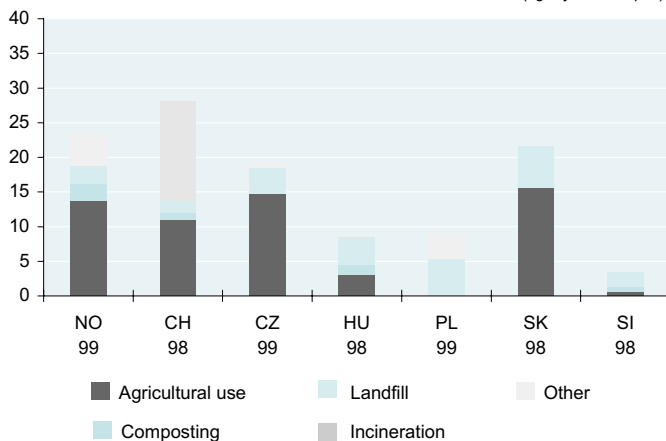
(kg dry solid /capita)



Source: Eurostat / New Cronos

### Sewage sludge disposal per capita - Other European countries, latest available year

(kg dry solid /capita)



Source: Eurostat / New Cronos

# 3

## WASTE

As a result of expanding patterns of consumption, the amount of waste has increased over the last decades and continues to increase.

Waste presents several risks for the environment:

- Pollution of ground and surface water;
- Soil contamination and nature deterioration;
- Impact on health from emissions of hazardous gases (e.g. dioxins) and dust;
- Global warming, through emissions of greenhouse gases from landfill sites (methane) and waste-incineration installations;
- Pollution through odours and disruption of scenic views.

Wastes which are considered particularly dangerous for man and the environment have been classified as hazardous waste.

The EU Waste Framework Directive (OJ L 19, 25.7.1975, p.39) requires Member States to take the necessary steps to recycle waste and prevent waste generation, and to ensure that waste is disposed of in a way that does not harm human health and the environment.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) sets out rules for the treatment of hazardous wastes and bans export to non-OECD countries. The EU directive on hazardous waste (OJ L 377, 31.12.1991, p.20) sets out further rules for the collection, handling and recycling of this type of waste. Specific directives exist on batteries and accumulators, used oils, sewage sludge, packaging waste and PCBs (halogenated transformer liquids), as well as shipment, the landfill of waste, incineration of waste and on end-of-life vehicles.

In December 2001 the Commission adopted an amended proposal for a Regulation of the European Parliament and of the Council on Waste Statistics. Adoption by Council and Parliament is foreseen later in 2002. The objective of this Regulation is to establish a framework for the production of Community statistics on the generation and treatment of waste. The statistics shall cover waste according to the Statistical waste classification, i.e. the substance-oriented aggregation of the European Waste Catalogue (OJ L 266, 6.9.2000, p.3). Waste generation shall cover economic activities according to NACE, and households. Waste treatment shall cover waste recovery and waste disposal according to the list of operations in the Waste Framework Directive.



### 3. Waste

#### Amount of waste generated in Europe

(1 000 t)

	1993	1994	1995	1996	1997	1998	1999
B	34 475	33 106	34 852	:	:	:	:
DK	:	11 105	11 466	12 912	12 857	12 233	:
D	:	:	:	385 668	:	:	:
EL	:	:	:	33 129*	:	:	:
E	:	:	:	:	:	:	77 005*
F	138 700*	:	135 700*	:	:	:	:
IRL	:	:	41 022*	:	:	58 412*	:
I	:	:	:	:	87 482	:	:
L	:	:	:	:	:	:	:
NL	:	:	:	34 943*	:	39 214*	:
A	:	:	:	46 083*	:	:	:
P	:	:	:	:	:	22 359	:
FIN	:	:	:	:	:	:	:
S	64 190*	:	:	:	:	87 598*	:
UK	:	:	377 000*	369 000*	:	:	377 000*
IS	206	209	212	216	223	231	241
NO	6 428	6 551	6 341	6 455	6 380	6 532	:
CH	4 168	4 187	4 226	4 271	4 319	4 394	4 581
CZ	:	:	32 522	41 149	42 643	47 139	41 453
EE	:	:	14 196	14 687	14 398	12 984	10 848
HU	:	65 450*	84 190*	70 380*	79 040*	79 980*	:
PL	131 129	131 908	133 647	136 166	136 652	144 931	138 572
RO	:	:	352 087	117 986	216 337	83 164	80 217
SK	:	:	25 668	20 200	:	19 800	:
SI	:	:	2 659	:	:	:	:

\*: Eurostat estimates based on amounts reported by the countries.

B: estimates from NSI. Data not validated by Belgium regional authorities.

NO: does not include soil, gravel, stone, etc. Includes sewage sludge, but only selected parts of Agricultural and Mining & quarrying wastes.

PL: excluding agriculture waste.

Source: Eurostat / New Cronos.

### 3. Waste



	1993	1994	1995	1996	1997	1998	1999
B	4 668	4 897	5 014	5 047	5 386	5 373	5 462
DK	:	2 803	2 959	3 253	3 104	3 141	3 329
D	:	:	:	39 152	40 451	39 801	:
EL	:	:	3 200	:	3 900	:	:
E	14 256	14 296	14 914	15 308	17 179	22 423	24 470
F	33 700	:	34 700	:	:	31 817	31 818
IRL	:	:	1 550	:	:	1 933	:
I	:	:	25 780	25 960	26 605	26 846	28 364
L	201	196	240	242	253	266	278
NL	8 563	8 652	8 465	8 782	9 143	9 221	9 359
A	:	:	3 476	4 110	4 241	4 249	4 436
P	3 563	3 800	3 884	4 030	4 109	4 304	4 364
FIN	:	2 100	:	:	2 200	2 300	2 400
S	:	3 200	:	:	:	4 000	:
UK	:	:	25 200	25 979	27 166	27 912	29 332
IS	162	163	166	169	174	180	189
NO	2 217	2 366	2 722	2 761	2 721	2 858	2 650
CH	4 140	4 161	4 200	4 246	4 294	4 369	4 555
BG	:	:	4 495	4 031	3 628	3 197	:
CY	369	:	:	:	:	:	:
CZ	:	:	:	3 200	3 280	3 017	3 365
EE	:	:	533	565	593	557	569
HU	:	3 688	3 811	4 023	4 258	4 292	4 376
LV	:	:	329	325	311	299	292
LT	1 866	1 671	1 546	1 445	1 510	1 578	1 236
PL	10 645	11 015	10 985	11 621	12 183	11 827	12 317
RO	:	:	5 758	5 202	3 410	5 050	5 699
SK	:	:	1 620	1 700	:	1 700	:
SI	:	:	1 024	:	:	:	:

B: estimates from NSI. Data not validated by Belgium regional authorities.

L: 1993-94: separately collected waste not included.

A: including construction site waste.

S: 1998: corresponds to the amount of municipal waste treated.

UK: 1999: based on a survey in England and Wales.

NO: waste from building and construction is included.

CY: data refer to municipal waste delivered to landfills.

Source: Eurostat / New Cronos.



### 3. Waste

#### Collection of municipal waste per capita, latest available year

	Year	Collected (1000 t)	Collected per capita (kg)
B	1999	5 462	535
DK	1999	3 329	627
D	1998	39 801	485
EL	1997	3 900	372
E	1999	24 470	621
F	1999	31 818	539
IRL	1998	1 933	523
I	1999	28 364	492
L	1999	278	648
NL	1999	9 359	594
A	1999	4 436	549
P	1999	4 364	437
FIN	1999	2 400	465
S	1998	4 000	452
UK	1999	29 332	558
IS	1999	189	685
NO	1999	2 650	596
CH	1999	4 555	639
BG	1998	3 197	495
CZ	1999	3 365	:
EE	1999	569	570
HU	1999	4 376	521
LV	1999	292	158
LT	1999	1 236	:
PL	1999	12 317	:
RO	1999	5 699	282
SK	1998	1 700	329
SI	1995	1 024	611

B: estimates from NSI. Data not validated by Belgium regional authorities.

Source: Eurostat / New Cronos.


**Generation of municipal waste by origin and type of collection,  
latest available year**

(1 000 t)

	Year	Origin			Type of collection			Population served (%)
		Households	Small business	Municipal services	Traditional (mixed)	Bulky waste	Separated waste	
B	1999	4 480	:	:	2 129	489	2 845	100
DK	1999	2 963	366	:	1 725	672	932	100
D	1998	:	:	:	17 188	3 195	19 418	100
EL	1997	:	:	:	:	:	:	100
E	1999	21 206	2 836	428	20 898	1 998	1 574	:
F	:	:	:	:	:	:	:	:
IRL	1998	1 163	689	81	1 686	:	167	:
I	1999	:	:	:	24 152	495	3 717	100
L	1998	221	53	3	179	13	85	100
NL	1999	8 255	207	897	:	753	4 053	100
A	1999	3 096	:	1 340	1 315	219	2 902	100
P	1999	:	:	:	4 174	67	123	98
FIN	1999	:	:	:	:	:	:	100
S	1998	:	:	:	:	:	1 000	100
UK	1999	25 147	3 081	1 104	17 625	7	682	100
IS	1999	71	118	:	:	:	:	99
NO	1999	1 397	:	:	:	:	781	99
CH	1999	:	:	:	1 820	:	1 955	99
BG	1998	:	:	:	:	:	:	78
CY	1993	307	61	:	369	:	:	:
EE	1999	260	300	8	:	:	:	69
HU	1999	2 813	1 563	:	4 376	:	:	83
LV	1999	:	:	:	292	:	:	50
PL	1999	8 343	:	:	:	:	:	:
RO	1999	4 120	1 087	492	5 699	:	:	90
SK	1998	1 100	:	:	:	:	:	:
SI	1995	573	:	:	962	45	17	84

B: estimates from NSI. Data not validated by Belgium regional authorities.

S: includes bulky waste.

IS: includes waste from municipal waste.

CH: includes bulky waste.

SI: includes bulky waste.

Source: Eurostat / New Cronos.



### 3. Waste

#### Waste generated by economic sector, latest available year

(1 000 t)

	Year	Agri- culture & forest	Mining & quarr- ying	Manu- factu- ring indus- try	Energy pro- duction	Water purifi- cation & distri- bution	Cons- truc- tion	Other sec- tors
		NACE 01-02	NACE 10-14	NACE 15-37	NACE 40	NACE 41	NACE 45	
B	1999	:	619	13 779	1 287	131	:	:
DK	1998	:	:	2 783	1 469	:	2 962	2 224
D	1993	:	67 813	65 119	25 310	:	131 645	1 023
EL	1997	7 781	3 900	6 682	9 320	:	1 800	:
E	1999	:	22 757	29 239	:	539	22 000	:
F	1995	377 000	:	101 000	:	:	13 700	:
IRL	1998	64 578	3 510	5 113	450	58	2 704	:
I	1997	242	350	22 993	:	1 183	20 587	15 523
L	1990	:	:	1 440	:	:	:	:
NL	1999	:	333	9 779	1 546	98	:	3 368
A	1996	:	:	14 284	:	:	25 392	13 690
P	1998	:	4 691	12 804	487	:	63	:
FIN	1997	24 000	28 000	15 910	1 274	:	35 000	136
S	1998	:	63 818	19 780	:	:	:	:
UK	1999	84 000	118 000	50 000	13 000	35 000	71 000	25 000
IS	1999	:	:	10	:	:	:	42
NO	1998	:	4 726	2 875	:	:	1 543	:
CH	1998	:	:	:	:	:	6 393	200
CZ	1999	12 443	2 484	9 107	6 945	1 146	4 835	1 128
HU	1998	62 000	182	2 028	7 884	:	81	10
LT	1999	:	1 201	:	:	:	:	3 797
PL	1999	:	49 480	58 176	16 684	1 325	68	522
RO	1999	1 240	48 050	11 795	6 811	1 322	271	3 605
SK	1998	4 375	944	4 342	2 920	417	68	4 972
SI	1995	118	70	1 212	1 044	44	126	152

Primary waste of Sewage and refuse disposal is included in "other sectors".

B: estimates from NSI. Data not validated by Belgium regional authorities. data for mining and quarrying (NACE 10-14) refers to 1996.

D: includes waste from water purification and distribution and part of waste from Mining & quarrying.

E: data refer to 1990.

F: data for agriculture & forest (NACE 01-02) refers to 1990. data for construction (NACE 45) refers to 1991.

IRL: data refers to 1995

I: data includes energy production (NACE 40).

A: Includes excavated soil and excludes construction site waste collected by municipalities.

P: includes water purification & distribution (NACE 41).

UK: data refers to 1996

NO: Mining and quarrying data (NACE 10-14) refer to 1993. construction (NACE 45) excludes soil, gravel and stones.

HU: includes waste generated in a coal mine of a power station.

SI: includes only public sector. Other sectors include secondary waste.

Source: Eurostat / New Cronos.





## Treatment of municipal waste, latest available year

(1 000 t)

	Year	Recovery operations			Disposal operations		
		Recycling	Composting	Incineration with energy recovery	Incineration without energy recovery	Landfill	
						of which: Controlled	
B	1998	1 982	831	1 149	233	1 473	:
DK	1998	710	420	1 654	:	357	357
D	1998	:	:	9 648	:	14 136	:
EL	1997	307	32	:	:	3 561	1 745
E	1999	4 390	:	2 603	57	17 477	:
F	1999	:	:	9 943	:	13 262	:
IRL	1998	161	:	:	:	1 766	1 776
I	1999	:	2 209	2 121	:	21 745	:
L	1999	1	33	133	0	60	60
NL	1999	2 292	2 230	3 859	0	1 136	1 136
A	1999	1 061	1 792	456	:	1 553	1 553
P	1999	190	228	349	0	2 603	:
FIN	1999	:	:	196	:	1 446	:
S	1998	1 000	300	1 400	:	1 300	:
UK	1999	2 884	758	2 576	10	28 846	:
IS	1999	14	2	4	11	147	140
NO	1999	579	202	410	:	1 459	:
CH	1999	1 448	510	2 130	0	1 070	600
BG	1998	:	:	:	:	3 167	2 320
CZ	1998	433	:	176	4	:	:
EE	1999	:	1	:	:	568	460
HU	1999	:	:	352	:	4 146	3 866
LV	1999	:	:	:	:	292	:
PL	1999	18	225	:	:	12 074	:
RO	1999	:	:	:	:	5 699	700
SK	1995	25	4	:	:	1 121	:
SI	1998	275	25	140	:	1 310	:

B: estimates from NSI. Data not validated by Belgium regional authorities.

DK: refers only to garden waste.

F: total incinerated (with and without energy recovery)

I: total incinerated (with and without energy recovery)

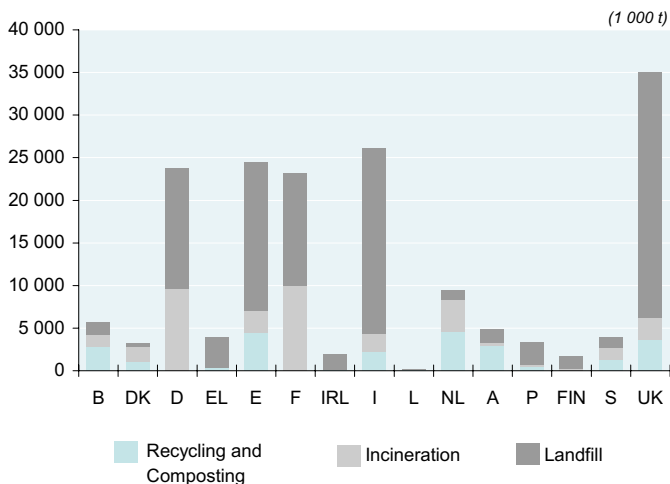
CZ: estimates.

Source: Eurostat / New Cronos.



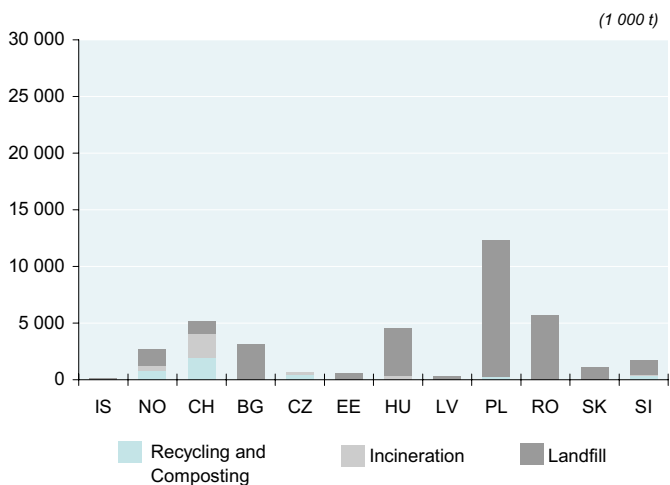
### 3. Waste

Treatment of municipal waste - EU-15  
latest available year



Source: Eurostat / New Cronos

Treatment of municipal waste - Other European countries  
latest available year



Source: Eurostat / New Cronos



## Treatment of hazardous waste - Recovery, latest available year

(1 000 t)

	Year	Recovery operations				
		Total	Incineration (with energy recovery)	Recycling and composting	Other recovery operations	Preparatory activities
B	1999	634	:	:	:	:
DK	1998	224	156	68	:	:
D		:	:	:	:	:
EL	1997	100	:	:	:	:
E	1996	:	168	1 197	208	:
F	1998	:	:	222	:	:
IRL	1998	153	5	:	:	:
I	1997	:	92	629	159	:
L	1998	:	-	:	:	:
NL	1998	227	:	:	:	:
A		:	:	:	:	:
P		:	:	:	:	:
FIN	1997	61	42	19	:	92
S		:	:	:	:	:
UK	1993	196	:	:	:	:
IS	1999	6	:	:	:	:
NO	1998	:	119	:	:	:
CH	1998	73	:	:	:	:
BG	1997	317	:	:	:	:
CZ	1999	:	37	28	316	:
EE	1999	78	:	:	:	:
HU	1996	365	:	:	:	:
PL	1999	400	:	:	:	8
RO	1999	414	3	411	:	:
SK	1998	:	68	158	:	:

B: estimates from NSI. Data not validated by Belgium regional authorities.

Include all hazardous wastes according to regional definitions.

DK: includes hospital waste.

F: excludes internal recovery.

IRL: estimates.

FIN: recycling includes other recovery operations. Preparatory activities include all preparatory activities and are not included in total.

Source: Eurostat / New Cronos.



### 3. Waste

#### Treatment of hazardous waste - Disposal. latest available year

(1 000 t)

	Year	Disposal operations					
		Total	Physico/ chemical treatment	Biological treatment	Incineration (without energy recovery)	Landfill	Other
B	1999	:	:	:	129	631	:
DK	1998	57	:	:	:	57	:
D		:	:	:	:	:	:
EL		:	:	:	:	:	:
E	1996	:	686	:	750	189	:
F	1998	:	302	:	1 361	803	:
IRL	1996	88	7	:	46	33	:
I	1997	:	:	1 132	282	791	620
L	1998	:	:	:	-	-	:
NL	1998	:	557	:	244	370	:
A	1996	:	:	:	106	:	:
P		:	:	:	:	:	:
FIN	1997	365	59	3	59	234	10
S		:	:	:	:	:	:
UK	1993	:	620	:	185	931	:
NO	1998	:	335	:	-	:	:
CH	1998	:	277	:	371	219	:
BG	1998	:	:	:	:	237	:
CZ	1999	:	1 071	128	5	217	576
EE	1999	:	7	:	0	5 748	6
HU	1996	:	1 015	:	1 110	1 035	:
PL	1999	734	:	:	:	113	:
RO	1999	1 759	416	:	5	1 318	436
SK	1998	:	592	103	68	292	25

B: estimates from NSI. Data not validated by Belgium regional authorities.

Include all hazardous wastes according to regional definitions

F: excludes internal disposal and includes incineration with energy recovery.

I: includes physico/chemical treatment.

Source: Eurostat / New Cronos.

# 4

## LANDSCAPE AND HUMAN SETTLEMENTS

The need for data on the use of space from an environmental point of view has been evident for some years and has stimulated statistical research work in this field. Landscapes fulfill an important support function to sustainable development. Nevertheless, a consistent picture of the use of space is still far from being possible due to the difficulties and costs of using the advanced technology needed to provide it.

In this chapter, relevant aspects of space use are brought together in order to give the user a general picture.

Europe is widely urbanised. Major environmental problems are land taken by construction, traffic-related noise and air pollution, traffic congestion, waste water and waste management. reliable statistics on urban issues are not yet available in the European Union. Therefore figures on population, population change and population density are included here.



## 4. Landscape and human settlements

### Land use by main category in % of land area

(%)

	Year	Arable land	Land under permanent crops	Land under permanent meadows	Other agricultural land	Total land under forest and other wooded land (FOWL)	Built-up and related land
B	1999	28	1	17	10	20	18
DK	1999	53	0	8	0	:	8
D	1999	:	:	:	:	29	12
EL	1985	30	:	40	:	22	:
E	1990	31	10	20	:	32	4
F	1999	32	2	18	4	31	8
IRL	1999	15	0	41	7	:	:
I	1995	27	9	12	6	23	:
L	1990	22	2	30	:	37	9
NL	1999	28	1	29	11	10	17
A	1999	17	1	23	0	47	5
P	1990	26	9	9	0	36	18
FIN	1995	7	0	0	1	76	2
S	1999	7	0	1	0	74	3
UK	1995	24	0	42	0	10	15
IS	1999	0	1	17	:	1	1
NO	1999	3	0	0	:	37	:
CH	1985	10	1	29	:	32	7
BG	1995	36	2	18	:	35	:
CY	1999	11	5	0	6	42	:
CZ	1999	39	3	12	:	33	10
LV	1999	28	0	8	:	44	3
LT	1999	45	1	8	:	30	3
PL	1999	45	1	13	:	29	7
RO	1999	39	2	20	:	28	4
SK	1999	30	3	17	2	41	8

DK: data for built-up area refer to 1995.

P: data for FOWL refer to 1995; and for built-up area refer to 1999.

S: data for FOWL refer to 1995; and for built-up area refer to 1990.

UK: data for FOWL refer to 1999; and for built-up area refer to 1999.

CH: data for built-up area refer to 1999.

Source: Eurostat / New Cronos.



## Total population and population density

	Population (1 000 inhabitants)						Population density (inhab./km <sup>2</sup> )	
	Total		Male		Female		1990	1998
	1990	1998	1990	1998	1990	1998		
EU-15	364 372	374 558	:	:	:	:	116	119
EURO-ZONE	293 261	301 166	:	:	:	:	119	123
B	9 967	10 204	4 870	4 988	5 097	5 216	327	334
DK	5 141	5 304	2 534	2 621	2 607	2 684	119	123
D	79 345	82 050	38 315	:	41 030	:	222	230
EL	10 161	10 516	5 004	5 183	5 157	5 333	77	80
E	38 958	39 371	19 121	19 253	19 837	20 118	77	78
F	56 710	58 398	26 931	:	29 804	:	104	107
IRL	3 506	3 705	1 743	1 839	1 763	1 866	50	53
I	56 672	57 588	27 031	27 959	29 641	29 629	188	191
L	381	427	186	210	195	217	147	165
NL	14 950	15 707	7 387	7 767	7 563	7 941	441	464
A	7 729	8 078	:	:	:	:	92	96
P	9 896	9 968	4 771	4 800	5 125	5 169	108	109
FIN	4 986	5 154	2 420	2 513	2 567	2 641	16	17
S	8 559	8 851	4 228	4 374	4 331	4 477	21	22
UK	57 411	59 237	28 013	:	29 398	:	236	243
BG	:	8 257	:	4 030	:	4 227	:	74
CZ	10 363	10 295	5 036	5 007	5 327	5 287	131	131
EE	1 571	1 450	735	675	836	775	36	33
HU	10 365	10 114	4 979	4 830	5 386	5 284	111	109
LV	2 671	2 449	1 243	1 134	1 428	1 315	41	38
LT	:	3 702	:	1 746	:	1 956	:	57
PL	:	38 666	:	18 802	:	19 864	:	124
RO	23 207	22 503	11 449	11 012	11 758	11 491	97	94
SK	:	5 391	:	2 623	:	2 768	:	110
SI	1 998	1 983	969	967	1 029	1 016	99	98

Source: Eurostat / New Cronos.

## 5

# FORESTRY

Forests and other wooded land cover about 36% of the total area in Europe. The territory occupied presents a great variety of forests with different structures, relying on parameters like age and species composition and crown coverage.

Benefits to nature and man originating in forests are wood growth, carbon sequestration, soil protection, recreation and maintenance of biodiversity. Man-made damages are reflected mainly in the loss of forest area and biodiversity as well as defoliation.

The European Union strategy (Council Resolution of 15th December 1998 on a forestry strategy for the European Union (1999/6 56/01)) is based on the protection and sustainable development of forests. Forestry forms an important part of the new multi-sectorial approach to rural development bringing together existing and new measures to improve the ecological stability of forests and the marketing of forestry products.

To implement this strategy, a number of regulations have been adopted. These aim to structural improvements under the CAP (Common Agricultural Policy) and are the following:

- The development of woodland in rural areas (Reg. (EEC) N° 1610/89);
- The development of the processing and marketing of forestry products (Reg. (EEC) N° 867/90);
- The protection of forests against atmospheric pollution (Reg. (EEC) N° 3528/86);
- The protection of forests against fires (Reg. (EEC) N° 2158/92);
- The development of forest information management (Reg. (EEC) N° 1615/89) and forestry research.





## 5. Forestry

### Distribution of forest and other wooded land (FOWL)

(1 000 ha)

	Total FOWL	Total (F)	Forest land (F)			Other wooded land (OWL)	OWL as (%) of FOWL
			F as (%) of FOWL	Forest available for wood supply (FAWS)	FAWS as (%) of FOWL		
EU-15	136 204	113 567	83	95 525	70	22 637	17
EURO-ZONE	102 918	83 389	81	71 741	70	19 529	19
B	672	646	96	639	95	26	4
DK	538	445	83	440	82	93	17
D	10 740	10 740	100	10 142	94	0	0
EL	6 513	3 359	52	3 094	48	3 154	48
E	25 984	13 509	52	10 479	40	12 475	48
F	16 989	15 156	89	14 470	85	1 833	11
IRL	591	591	100	580	98	0	0
I	10 842	9 857	91	6 013	55	985	9
L	89	86	97	86	97	3	3
NL	339	339	100	314	93	0	0
A	3 924	3 840	98	3 352	85	84	2
P	3 467	3 383	98	1 897	55	84	2
FIN	22 768	21 883	96	20 675	91	885	4
S	30 259	27 264	90	21 236	70	2 995	10
UK	2 489	2 469	99	2 108	85	20	1
IS	130	30	23	14	11	100	77
LI	7	7	100	4	57	1	14
NO	12 000	8 710	73	6 609	55	3 290	27
CH	1 234	1 173	95	1 060	86	61	5
AL	1 030	1 030	100	902	88	0	0
BA	2 710	2 276	84	1 305	48	434	16
BG	3 903	3 590	92	3 124	80	314	8
HR	2 105	1 775	84	1 690	80	330	16
CY	280	117	42	43	15	163	58
CZ	2 630	2 630	100	2 559	97	0	0
EE	2 162	2 016	93	1 932	89	146	7
HU	1 811	1 811	100	1 702	94	0	0
LV	2 995	2 884	96	2 413	81	111	4
LT	2 050	1 978	96	1 686	82	72	4
PL	8 942	8 942	100	8 300	93	0	0
RO	6 680	6 301	94	5 617	84	379	6
SK	2 031	2 016	99	1 706	84	15	1
SI	1 166	1 099	94	1 035	89	67	6

Source: TBFRA (Temperate and Boreal Forest Resource Assessment) - 2000.


**Assessment of the evolution of forest and other wooded land (FOWL) 1950, 1960, 1990**

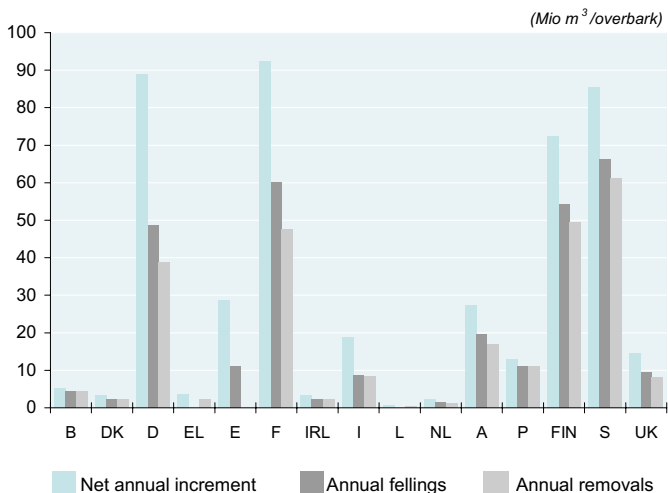
	Land area <i>(1 000 ha)</i>	FOWL			FOWL as % of land area		
		1950	1960	1990	1950	1960	1990
		<i>(1 000 ha)</i>			<i>(%)</i>		
EU-15	315 412	:	:	113 338	:	:	36
EURO-ZONE	245 627	:	:	83 139	:	:	34
B	3 052	601	604	646	20	20	21
DK	4 309	444	490	466	10	11	11
D	35 702	:	10 162	10 490	:	28	29
EL	13 163	2 000	2 578	3 359	15	20	26
E	50 479	12 550	:	13 509	25	:	27
F	54 396	11 407	11 608	15 156	21	21	28
IRL	7 027	89	268	591	1	4	8
I	30 132	5 648	5 781	9 857	19	19	33
L	259	81	82	86	31	32	33
NL	3 388	250	276	339	7	8	10
A	8 386	3 352	3 691	3 840	40	44	46
P	9 191	2 467	2 600	3 383	27	28	37
FIN	30 453	21 874	21 157	21 883	72	69	72
S	41 093	22 980	24 054	27 264	56	59	66
UK	24 382	1 252	1 623	2 469	5	7	10
IS	10 330	2	3	30	0	0	0
NO	32 376	7 500	8 520	8 710	23	26	27
CH	4 129	950	983	1 173	23	24	28

Source: TBFRA (Temperate and Boreal Forest Resource Assessment) - 1950, 1960, 1990



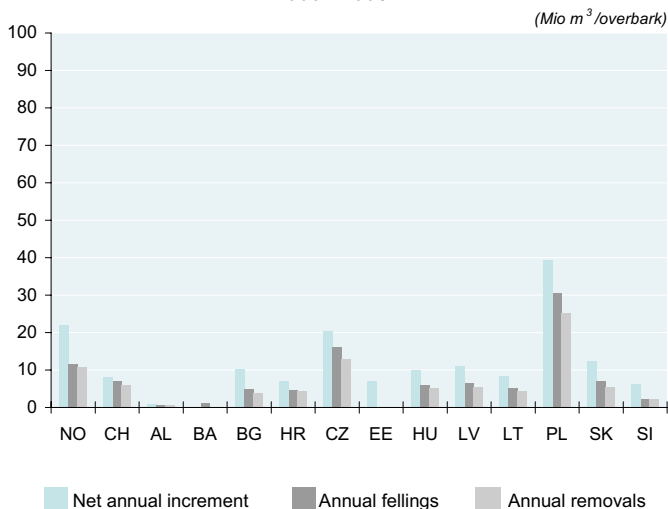
## 5. Forestry

### Net annual increment, fellings and removals - EU-15 1990 - 1998



Source: *TBFRA (Temperate and Boreal Forest Resource Assessment) 2000.*

### Net annual increment, fellings and removals - Other European countries 1990 - 1998



Source: *TBFRA (Temperate and Boreal Forest Resource Assessment) 2000.*



## Defoliation of all species by classes, 1998

	Area surveyed (1 000 ha)	Number of sample trees	Defoliation class				
			0 none (%)	1 slight (%)	2 moderate (%)	3+4 severe and dead (%)	2+3+4 damaged (%)
EU-15	72 651	97 237	:	:	:	:	:
EURO-ZONE	68 028	71 408	:	:	:	:	:
B	589	3 283	44	39	16	1	17
DK	417	1 224	45	33	20	2	22
D	10 264	13 178	38	41	20	1	21
EL	2 034	1 820	46	32	18	4	22
E	11 792	11 160	37	50	10	4	14
F	13 100	10 740	42	35	22	2	24
IRL	399	41	51	33	14	2	16
I	7 699	4 939	21	43	32	4	36
L	84	1 176	39	36	24	2	26
NL	210	4 675	48	21	28	3	31
A	3 481	7 348	66	28	6	1	7
P	3 370	4 290	50	40	9	1	10
FIN	15 006	8 758	60	29	11	1	12
S	2 050	15 798	56	30	13	2	15
UK	2 156	8 807	34	45	20	2	22
NO	12 000	8 480	32	37	26	4	30
CH	1 186	1 133	37	44	12	7	19
BG	3 314	5 115	12	28	44	16	60
CZ	2 630	13 942	12	39	48	1	49
EE	2 016	2 184	50	42	7	2	9
HU	1 748	26 187	43	39	15	4	19
LV	2 882	8 975	30	53	15	1	16
LT	1 858	5 328	18	66	14	2	16
PL	6 439	23 680	10	55	33	1	34
RO	6 244	126 207	66	21	11	1	12
SK	1 961	4 313	22	45	29	3	32
SI	1 099	984	29	44	24	4	28

Source: European Commission - DG Agriculture.

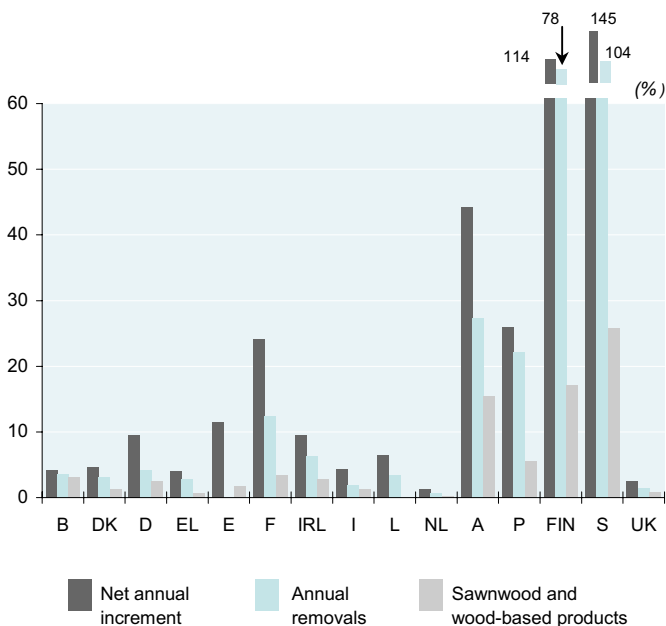


## 5. Forestry

### CO<sub>2</sub> equivalent of Increment, Removals and Wood-based products compared to total CO<sub>2</sub> emissions

1990 - 1999

Totals of national CO<sub>2</sub>-emissions correspond to 100%



Source: TBFRA (Temperate and Boreal Forest Resource Assessment) 2000.

## 6

## AGRICULTURE

As farmland accounts for 44% of all Europe's territory, it is clear that a strong link exists between the environment and agriculture.

On the one hand, crop yields can be heavily affected by environmental problems, such as atmospheric pollution (acid rain) or climate change.

On the other hand, agriculture may heavily affect the environment:

- intensive use of fertilisers and spreading of animal manure results in nitrate leaching to ground water and run-off to surface water;
- over-use of pesticides has a negative impact on biodiversity and increases the risk of pesticides finding their way into drinking water and the food chain;
- animal husbandry produces emissions of methane, a greenhouse gas, and ammonia;
- intensive irrigation can lead to the lowering of groundwater and river flow levels and can have a negative impact on flora and fauna or the gradual salinisation of ground water in coastal areas;
- monoculture in agriculture reduces biodiversity.

The Common Agriculture Policy today intends to reconcile the needs of the producers with environmental protection. First steps have already been taken, as for example compensation for less intensive use of land and for less intensive husbandry of cattle and sheep, for the transformation of arable land and pasture into meadows, for the safeguarding of biotopes and for reforestation.



## 6. Agriculture

### Agricultural land by main category

(1 000 ha)

	Arable land		Permanent crops		Permanent meadows and pastures		Total UAA	
	1990	1997	1990	1997	1990	1997	1990	1997
EU-15	:	73 645	:	10 164	:	44 730	:	128 691
B	756	852	16	20	573	511	1 345	1 383
DK	2 550	2 364	10	10	219	315	2 779	2 689
D	11 546	11 801	212	202	5 265	5 146	17 048	17 160
EL	2 015	1 981	976	1 026	658	478	3 661	3 499
E	12 007	12 884	4 049	4 171	8 448	8 570	24 531	25 630
F	17 410	18 480	1 169	1 148	9 563	8 675	28 186	28 331
IRL	598	1 049	2	0	3 840	3 293	4 442	4 342
I	8 073	8 192	2 734	2 721	4 106	3 860	14 947	14 833
L	56	60	1	1	69	65	127	127
NL	908	977	32	33	1 072	1 000	2 011	2 011
A	:	1 396	:	73	:	1 939	:	3 415
P	2 346	2 096	790	708	838	992	4 006	3 822
FIN	:	2 143	:	4	:	24	:	2 172
S	:	2 745	:	4	:	360	:	3 109
UK	6 740	6 625	47	42	9 711	9 501	16 499	16 169

Source: Eurostat / New Cronos

### Organic land, 1998

	Total UAA 1997	Agricultural area as % of total EU agricultural area	Organic land <sup>1</sup>	Organic land as % of UAA	Organic land as % of total EU organic land
	(ha)	(%)	(ha)	(%)	(%)
EU-15	128 690 214	100.0	2 289 653	1.8	100.0
B	1 382 740	1.1	11 744	0.8	0.5
DK	2 688 014	2.1	93 199	3.5	4.1
D	17 160 010	13.3	416 518	2.4	18.2
EL	3 498 660	2.7	15 402	0.4	0.7
E	25 630 130	19.9	269 465	1.1	11.8
F	28 331 330	22.0	219 792	0.8	9.6
IRL	4 342 380	3.4	24 411	0.6	1.1
I	14 833 110	11.5	577 475	3.9	25.2
L	126 630	0.1	744	0.6	0.0
NL	2 010 510	1.6	21 100	1.0	0.9
A	3 415 090	2.7	287 899	8.4	12.6
P	3 822 120	3.0	29 537	0.8	1.3
FIN	2 171 580	1.7	116 206	5.4	5.1
S	3 109 060	2.4	127 329	4.1	5.6
UK	16 168 850	12.6	78 833	0.5	3.4
NO	1 038 000	:	15 581	1.5	:

1) Includes total organic land in conversion, plus area fully converted

Source: Eurostat / New Cronos



## Main crops area, 1999

	Total UAA	Cereals exc. rice	Dried pulses in grain equivalent	Potatoes	Sugar beet	Oil- seeds	Annual green fodder
	(1 000 ha)	(%)					
EU-15	135 829	26.8*	:	1.0*	1.5*	:	:
B	1 394	20.2	0.2	4.8	7.3	1.4	13.0
DK	2 712	55.2	2.4	1.4	2.3	5.6	:
D	17 152	38.7	1.2	1.8	2.9	8.3	7.0
EL	5 109	24.7	0.3	0.9	0.8	:	:
E	28 882	22.6	:	0.5	0.5	:	:
F	29 937	29.8	1.7	0.6	1.5	7.6	10.8
IRL	4 418	6.6	0.1	0.4	0.8	0.1	:
I	15 401	25.6	:	0.6	1.9	:	:
L	127	21.7	0.4	0.7	0.0	3.2	13.3
NL	1 962	9.6	0.2	9.2	6.1	:	:
A	3 410	23.7	1.4	0.7	1.4	3.8	:
P	3 908	14.9	1.1	2.2	0.2	1.4	:
FIN	2 201	51.2	0.5	1.5	1.6	3.0	:
S	3 071	37.6	1.0	1.1	1.9	3.6	:
UK	16 145	19.4	1.3	1.1	1.1	3.9	0.7
NO	1 038	:	0.0	1.4	0.0	:	:

\*: Eurostat estimates

EL: data for Utilised agricultural area refers to 1996.

I: data for Utilised agricultural area refers to 1998.

Source: Eurostat / New Cronos

## Yields of main crops - Wheat, Barley, Potatoes, Sugar beets

1998

(100 kg/ha)

	Wheat	Barley	Potatoes	Sugar beets
EU-15	60.2	45.6	323.2	553.3
B	80.4	69.8	412.2	569.2
DK	72.5	52.0	404.4	528.2
D	72.0	57.4	381.4	532.2
EL	22.4	25.0	244.0	532.9
E	28.4	30.8	234.4	593.1
F	76.1	64.9	368.8	683.2
IRL	80.3	56.3	260.7	498.9
I	35.8	38.6	243.3	452.0
L	61.3	51.6	265.0	458.3
NL	77.0	54.8	414.9	501.8
A	50.7	45.6	283.1	668.2
P	10.1	10.0	142.6	535.3
FIN	29.4	23.9	186.3	272.0
S	56.5	37.9	355.8	437.7
UK	75.6	52.8	391.2	519.4
NO	:	:	268.4	:

Source: Eurostat / New Cronos





## 6. Agriculture

### Livestock - Cattle, Pig, Sheep and goat population

1998

(Heads / 1 000 ha\_UAA)

	Cattle	Pig	Sheep	Goat
EU-15	609*	923*	727*	88*
B	2 141	5 417	83	9
DK	726	4 421	40	0
D	871	1 533	132	7
EL	113	183	1 818	1 080
E	207	747	838	96
F	670	530	319	36
IRL	1 605	408	1 273	3
I	475	540	707	86
L	1 589	637	56	6
NL	2 133	6 839	663	74
A	637	1 117	106	16
P	324	599	882	203
FIN	500	700	44	3
S	557	756	137	2
UK	696	468	1 925	5

\*: Eurostat estimates

EL: data are calculated with UAA-total from 1996.

I: data are calculated with UAA-total from 1998.

Source: Eurostat / New Cronos

### Sales of pesticides by main type, 1998

(t of active ingredients)

	Fungicides	Herbicides	Insecticides	Other	TOTAL
EU-15	139 036	116 018	37 562	28 770	321 385
B	2 654	4 965	1 023	832	9 474
DK	770	2 619	55	175	3 619
D	10 530	17 269	6 276	4 809	38 884
EL	4 731	2 303	2 505	1 940	11 479
E	11 984	9 413	10 173	3 500	35 070
F	58 807	36 439	4 672	7 835	107 753
IRL	516	678	36	80	1 310
I	24 761	9 555	8 390	4 092	46 798
L	224	183	11	12	430
NL	5 127	2 921	1 577	1 097	10 722
A	1 336	1 583	85	301	3 305
P	10 475	1 914	1 079	914	14 382
FIN	209	844	46	77	1 176
S	300	1 269	27	33	1 629
UK	6 612	24 063	1 607	3 073	35 354

Source: Eurostat / New Cronos


**Consumption of commercial fertilisers - Total  
(Nitrogen, Phosphate, Potash)**

(1 000 t)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
EU-15	19 551	18 553	16 724	16 802	17 451	17 307	18 000	17 487	17 151
B	384	354	330	321	319	307	314	307	304
DK	633	581	507	484	466	438	449	436	403
D	3 272	2 969	2 844	2 673	2 906	2 820	2 819	2 857	2 938
EL	685	652	628	509	527	505	560	504	486
E	1 976	1 882	1 575	1 818	1 927	1 869	2 171	2 062	2 107
F	5 683	5 565	4 530	4 604	4 712	4 915	5 065	4 989	4 831
IRL	692	665	668	716	752	748	682	695	706
I	1 944	1 987	1 925	1 904	1 892	1 866	1 883	1 769	1 742
NL	559	561	546	520	545	535	538	494	465
A	303	289	267	262	250	237	265	253	252
P	278	258	242	250	248	244	258	236	248
FIN	443	339	342	338	370	340	313	311	305
S	328	282	318	329	317	293	308	309	280
UK	2 370	2 171	2 003	2 075	2 219	2 191	2 376	2 265	2 084
IS	22	23	20	23	20	19	19	19	19
NO	201	208	205	206	208	210	209	204	205
CH	168	159	152	151	145	135	125	113	329
AL	102	31	24	18	15	11	7	5	25
BA	:	:	:	:	:	15	9	9	31
BG	680	472	237	205	225	123	166	200	169
HR	:	:	184	139	191	185	202	247	203
CZ	1 303	425	390	256	337	348	347	326	301
EE	:	:	113	65	42	28	22	29	32
HU	671	326	189	292	314	368	457	430	456
LV	:	:	168	95	95	22	25	33	45
LT	:	:	156	87	79	118	119	137	140
MT	1	1	1	1	1	1	1	1	1
PL	1 752	1 009	1 192	1 282	1 428	1 512	1 595	1 590	1 627
RO	1 103	463	553	604	374	363	422	315	360
SK	:	:	:	81	109	108	119	107	106
SI	:	:	77	73	85	74	63	74	77

Source: FAO



## 6. Agriculture

### Total mineral fertiliser consumption by crop, 1997

(%)

	Cereals	Other arable	Fodder (inc. maize)	Fertilised grass land	Permanent crops (fruit, vineyard)
B	22	16	15	46	1
DK	55	9	17	19	0
D	48	16	9	27	0
EL	41	22	2	0	35
E	35	16	2	22	25
F	41	24	20	13	2
IRL	6	2	15	77	0
I	33	28	2	6	31
L	20	3	14	62	0
NL	10	15	3	72	1
A	40	24	10	25	2
P	16	20	16	21	27
FIN	40	6	53	1	0
S	45	8	36	11	0
UK	29	8	6	57	0

Source: Eurostat / New Cronos

### Sales of Pesticides - EU-15

1993 - 1998

(1 000 t of active ingredients)



Source: Eurostat / New Cronos

## 7

## ENERGY

Energy is an essential ingredient for our well-being and economic development, but it is also a source of major concern for the environment. Energy is by far the most important source of the air pollutants  $\text{NO}_x$ ,  $\text{SO}_2$  and  $\text{CO}$ . The emission of the greenhouse gas  $\text{CO}_2$  is essentially due to combustion of fossil fuels.

Any energy policy at national or regional level must ensure that energy is available to the consumer at competitive prices in an environmentally friendly manner. Therefore, essential elements of such a policy have always been:

- security of supplies
- diversity of supplies
- energy efficiency
- environmental effect
- prices and competition

The last two elements in particular have received higher attention over the last few years due to policies pursued at Union and international level.

The EU has launched several energy programmes, essentially to reduce dependence on fossil fuels and to limit  $\text{CO}_2$  emissions in order to meet the Kyoto and EU objectives. The main targets are to improve energy efficiency (the SAVE programme) and to increase the proportion of energy produced from renewable sources (the ALTENER programme). A  $\text{CO}_2$  energy tax has been introduced in some countries in order to raise the price of energy and to strengthen the incentive for energy saving.



## 7. Energy

### Gross Inland Consumption, EU-15 - All products

(1 000 toe)

	1990	1995	1996	1997	1998
Total	1 318 087	1 363 479	1 412 686	1 409 540	1 435 638
Solid fuels	301 152	237 774	234 887	223 487	222 719
Petroleum products	545 051	576 043	587 662	587 753	601 167
Gas	222 057	273 351	305 137	302 540	315 497
Nuclear energy	181 439	201 239	208 864	212 615	209 664

data for 1998 is provisional

Source: Eurostat / New Cronos

### Net electricity production, EU-15

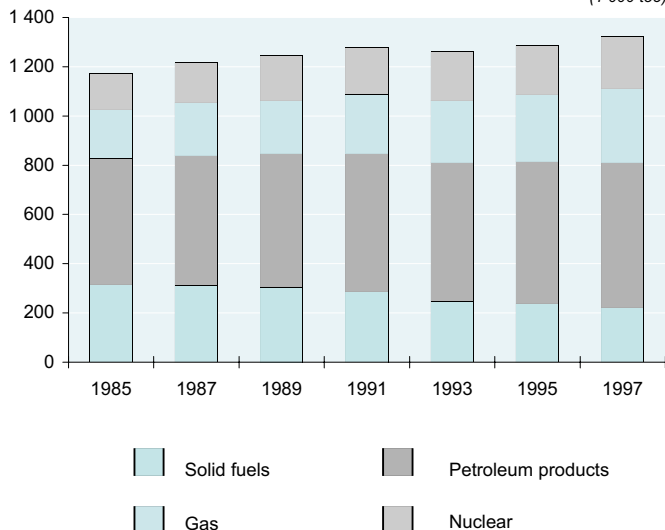
(GWh)

	1990	1995	1996	1997	1998
Total	1 943 276	2 205 384	2 288 253	2 301 802	2 364 660
Solid fuels	633 871	659 722	661 085	611 838	624 820
Petroleum products	182 041	189 898	188 544	176 028	179 586
Natural gas and deriv.	157 159	250 416	289 924	345 814	376 814
Nuclear energy	674 984	766 578	806 394	813 997	808 369

Source: Eurostat / New Cronos

### Gross Inland Consumption by fuel - EU-15

(1 000 toe)



Source: Eurostat / New Cronos



## Production of renewable energy, EU-15

(1 000 t)

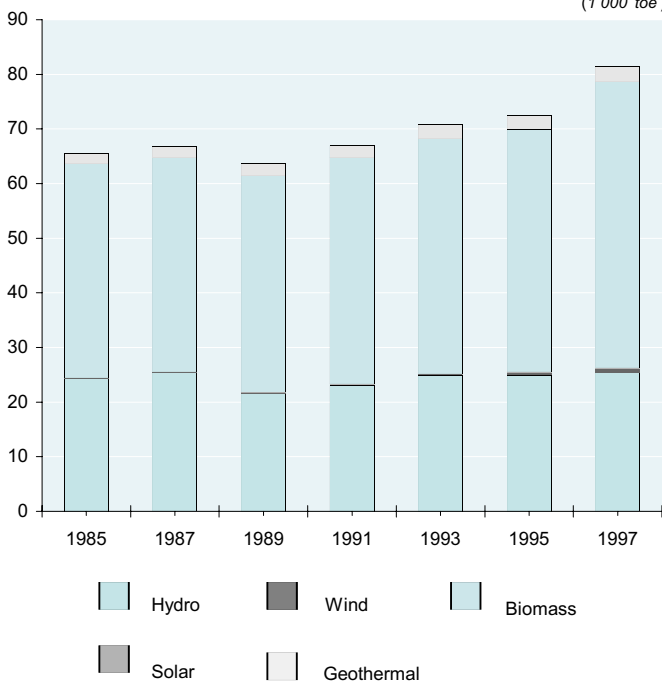
	1985	1990	1995	1998
Total	67 026	65 804	73 348	84 816*
Hydroelectrical energy	24 401	22 274	24 947	26 263
Wind	5	67	351	1 037
Solar	92	158	264	348*
Geothermal	1 790	2 217	2 518	2 993*
Biomass / waste	40 739	41 088	45 270	54 176*

\*: estimates

Source: Eurostat / New Cronos

## Production of renewable energy by type, EU-15

(1 000 toe)



Source: Eurostat / New Cronos



## 7. Energy

### Final energy consumption - industry

(1 000 toe)

	1990	1995	1996	1997	1998
EU-15	246 505	268 816	264 149	259 108	264 439
B	11 076	11 126	10 453	10 278	10 634
DK	2 752	2 743	2 776	2 715	2 769
D	58 013	77 621	76 907	76 980	79 758
GR	3 707	4 071	3 921	3 729	3 736
E	19 203	19 416	18 588	18 660	18 836
F	36 574	37 077	37 279	35 953	38 053
IRL	1 628	1 831	1 852	1 754	1 780
I	34 947	35 111	34 033	31 731	31 512
L	1 645	1 633	1 556	1 670	1 773
NL	13 246	13 139	13 368	13 886	13 729
A	5 405	5 729	5 554	5 574	5 877
P	4 391	3 824	3 627	3 442	3 687
FIN	9 857	8 397	8 480	8 345	8 047
S	11 804	11 839	11 829	11 689	11 866
UK	32 257	35 259	33 924	32 702	32 383
IS	372	382	360	386	372
NO	5 278	6 362	6 418	6 584	6 721

Source: Eurostat / New Cronos

### Final energy consumption - households

(1 000 toe)

	1990	1995	1996	1997	1998
EU-15	228 064	236 480	257 294	246 857	250 573*
B	8 338	9 322	10 625	9 877	9 883*
DK	4 135	4 579	4 901	4 514	4 459*
D	57 948	62 995	70 134	66 557	67 594*
EL	3 231	3 353	3 965	4 072	4 225
E	9 261	10 007	10 571	10 750	11 097*
F	36 539	36 292	40 007	37 729	38 722
IRL	2 174	2 190	2 271	2 229	2 404
I	33 150	32 923	33 771	35 926	37 502
L	503	559	621	610	421
NL	9 768	11 122	12 340	10 708	10 347
Ö	6 769	7 042	7 665	6 301	4 994*
P	2 290	2 991	2 669	2 667	2 628
FIN	5 481	5 608	4 896	5 269	5 383
S	6 838	7 784	8 455	8 215	8 151
UK	41 640	39 713	44 402	41 435	42 763
IS	578	570	:	:	:
NO	3 570	3 860	4 007	3 817	3 920

\*: estimates

Source: Eurostat / New Cronos

## 8

## TRANSPORT

The rapid increase in transport over recent years has been largely driven by economic growth and the removal of barriers to the free movement of goods and persons. Changes in industrial and commercial practices, such as just-in-time delivery and out-of-town shopping centers, have also increased the dependence on road transport for both freight and persons. An additional factor in the high growth of air and road transport has been higher incomes and lower real fuel prices.

A number of environmental problems are linked with transport, especially:

- Emissions of the greenhouse gas carbon dioxide;
- Pollutant emissions, such as nitrogen oxides, volatile organic compounds, sulphur dioxide and particulates;
- Noise;
- Land take;
- Stress to wildlife through air pollution, noise and the fragmentation of their habitats

The EU and its Member States have made considerable efforts to reduce air emissions from transport (for example by introducing catalytic converters and phasing out leaded petrol). As a consequence, the emissions of some pollutants (e.g. nitrogen oxides and volatile organic compounds) are beginning to show signs of decreasing in spite of continuing traffic growth. Nevertheless, carbon dioxide emissions, which are linked to consumption of petroleum products, are still increasing.





## 8. Transport

### Passenger transport by means, EU-15

(1 000 mio pkm)

Year	Car	Bus	Tram / Metro	Rail	Air
1980	2 307	364	41	253	74
1985	2 576	364	46	262	:
1990	3 253	385	48	274	157
1994	3 542	394	48	274	:
1995	3 614	405	47	276	202
1996	3 679	407	48	284	209
1997	3 744	413	49	287	222
1998	3 814	416	50	290	241

Source: Eurostat / New Cronos / TERM, 2000

### Freight transport by mode, EU-15

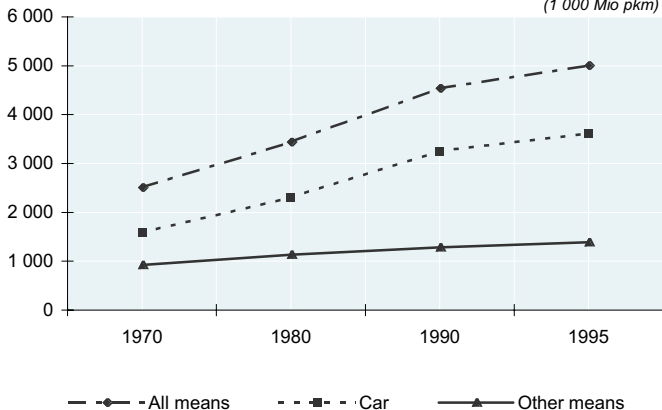
(1 000 mio tkm)

Year	All modes	Road	Rail	Inland waterways	Short sea shipping	Oil pipelines
1980	1 893	628	287	107	779	92
1985	1 867	683	275	100	736	72
1990	2 289	929	255	109	919	77
1991	2 380	1 011	233	105	950	81
1992	2 398	1 021	220	105	969	83
1993	2 362	1 021	205	103	948	85
1994	2 524	1 094	219	112	1 012	86
1995	2 635	1 145	221	114	1 070	85
1996	2 636	1 151	220	111	1 070	84
1997	2 764	1 202	237	115	1 124	86
1998	:	1 255	241	121	:	87

Source: Eurostat / New Cronos / TERM, 2000

### Evolution of passenger transport, EU-15

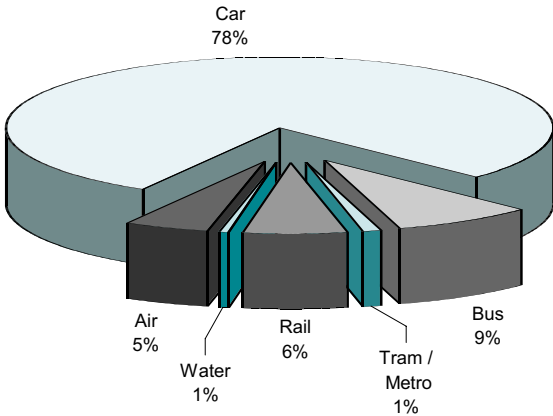
(1 000 Mio pkm)



Source: Eurostat / New Cronos / TERM, 2000

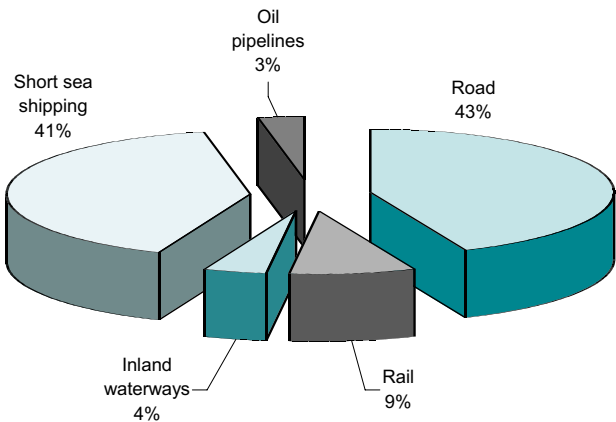


### Passenger transport by means - EU-15 1998



Source: Eurostat / New Cronos / TERM, 2000

### Freight transport by mode - EU-15 1997



Source: Eurostat / New Cronos / TERM, 2000



## 8. Transport

### Final energy consumption of transport by energy source, EU-15

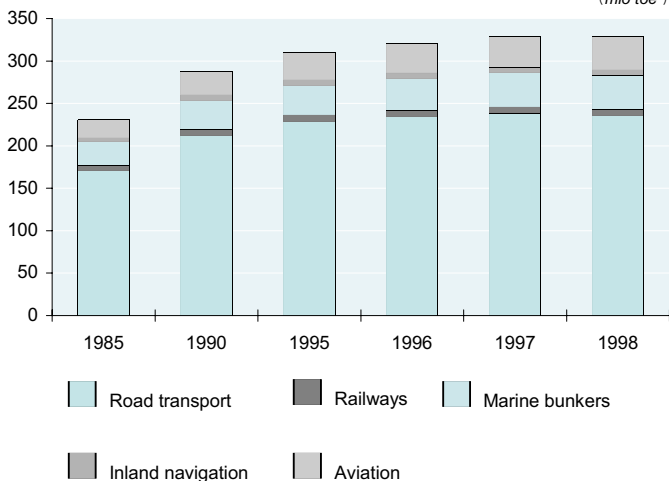
(1 000 toe)

Year	Crude oil and petroleum products	Gas	Electricity	Solid fuels	Others	All products
Total final energy consumption (including marine bunkers and pipelines)						
1985	401 534	161 388	136 414	101 474	50 414	851 224
1986	420 785	163 577	139 824	94 616	50 173	868 974
1987	420 437	173 147	145 157	92 991	51 421	883 153
1988	426 602	169 644	149 067	89 213	50 695	885 220
1989	422 334	175 559	153 844	85 265	50 518	887 520
1990	430 971	178 233	156 105	80 124	51 086	896 519
1991	442 214	193 559	158 927	68 890	53 231	916 821
1992	447 000	193 108	163 881	61 282	51 341	916 612
1993	451 908	198 393	161 187	54 966	53 362	919 817
1994	449 176	195 423	163 766	51 894	53 023	913 282
1995	453 136	205 756	169 490	48 981	54 986	932 350
1996	466 949	227 727	173 984	46 305	57 209	972 174
1997	469 646	216 687	177 158	46 435	61 327	971 253
1998	477 681	222 475	181 537	42 335	62 923	986 952

Source: Eurostat / New Cronos / TERM, 2000

### Final energy consumption of transport by mode, EU-15

(mio toe)



Source: Eurostat / New Cronos / TERM, 2000

## ENVIRONMENTAL PROTECTION EXPENDITURE

The public has become increasingly aware of the need to protect the environment against pollution. Environmental protection is now being integrated into all policy fields with the general aim to ensure a sustainable development. To encourage firms and private households to protect the environment, governments can use regulatory measures or levy taxes directly linked to pollution. The "polluter pays" principle is another weapon in the fight against pollution.

Statistics on environmental protection is an indicator of the response from society to reduce pollution. The data are the basis for analysis of the "polluter pays" principle, the effects on enterprise competitiveness, for cost-effective analysis of proposed new regulations and policies, and for estimates of the size of the environmental goods and services industry.

Spending on environmental protection occurs in all sectors of the economy: Public sector, Industry, Other Businesses (including enterprises which specialise in waste and wastewater treatment) and Households. The statistics are under development. The legal framework is Council Regulation N°58/97 on Structural Business Statistics which was adopted in December 1996. The Regulation provides a tool for the development in the coming years of regular data collection on the variables and economic activities of the highest policy interest.

Only expenditure in the Public sector and by Industry are included here for data availability reason. Total spending is the sum of investments and current expenditure.



## 9. Environmental Protection Expenditure

EPE as % of GDP, latest available year

(%)

	Year	Public Sector			Year	Industry			TOTAL		
		Current expenditure	Investment	Total		Current expenditure	Investment	Total	Current expenditure	Investment	Total
B	1997	:	:	0.66	1997	:	0.02	:	:	:	:
DK	1999	0.38	0.14	0.52		:	:	:	:	:	:
D	1997	0.37	0.23	0.60	1997	0.32	0.10	0.42	0.70	0.32	1.02
EL	1999	0.45	0.17	0.62	1996	0.15	0.14	0.29	0.60	0.31	0.91
E	1996	0.51	0.42	0.93		:	:	:	:	:	:
F	1998	0.58	0.22	0.79	1998	0.57	0.20	0.77	1.14	0.42	1.56
IRL	1998	0.35	0.18	0.53	1998	0.08	0.12	0.20	0.43	0.30	0.73
I	1992	0.03	0.14	0.16		:	:	:	:	:	:
L	1997	0.47	0.26	0.73		:	:	:	:	:	:
NL	1997	1.26	0.20	1.46	1997	0.19	0.24	0.42	1.45	0.43	1.88
A	1998	1.09	0.46	1.55	1998	0.40	0.17	0.57	1.49	0.63	2.12
P	1998	0.44	0.40	0.84	1999	0.13	0.18	0.31	0.57	0.58	1.15
FIN	1998	0.39	0.17	0.56	1998	0.29	0.16	0.46	0.68	0.34	1.02
S	1991	0.66	0.19	0.85	1997	0.21	0.24	0.45	0.87	0.44	1.31
UK	1990	0.30	0.10	0.40	1997	0.39	0.14	0.53	0.68	0.25	0.93
IS	1998	0.27	0.06	0.33		:	:	:	:	:	:
CH	1992	0.68	0.36	1.04	1993	0.24	0.35	0.60	0.92	0.71	1.63
BG	1998	0.11	0.13	0.23	1998	0.64	0.29	0.93	0.74	0.42	1.16
CZ	1999	:	0.60	:		:	0.90	:	:	1.50	:
EE	1999	0.15	0.57	0.72	1999	0.29	0.17	0.46	0.44	0.74	1.18
HU	1998	:	0.52	:	1999	0.78	0.36	1.14	:	0.88	:
LV	1999	:	0.10	0.10	1999	0.67	0.08	0.75	:	0.19	0.85
LT	1998	0.03	0.17	0.20	1998	0.25	0.07	0.32	0.29	0.24	0.53
MT									0.00	0.00	0.00
PL	1999	0.38	0.52	0.90	1999	0.73	0.87	1.60	1.11	1.39	2.50
RO	1998	0.23	0.29	0.52	1998	0.81	0.44	1.25	1.04	0.73	1.77
SK	1994	0.24	0.66	0.90		:	:	:	:	:	:
SI		:	:	:	1998	0.17	0.19	0.36	:	:	:

D: includes 'end-of-pipe' investments only.

EL: industry includes total business sector.

F: industry includes total business sector.

IRL: industry includes total business sector.

CH: industry includes total business sector.

LV: industry includes total business sector..

Source: Eurostat / New Cronos



## Total EPE by Public Sector

(Mio ECU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
B	853	1 033	1 116	:	:	1 082	1 412	1 420	:	:
DK	:	258	285	442	685	769	755	764	814	856
D	9 610	12 425	14 750	14 863	14 876	14 644	13 003	11 220	:	:
EL	330	737	586	579	553	565	665	681	702	730
E	:	:	:	:	3 721	4 222	4 469	:	:	:
F	5 923	6 512	6 790	7 565	8 639	9 308	9 659	9 852	10 276	:
IRL	:	:	:	:	:	:	:	:	412	:
I	1 458	1 985	1 538	:	:	:	:	:	:	:
L	:	:	:	:	:	:	:	113	:	:
NL	2 129	2 634	2 969	:	:	4 593	:	4 845	:	:
A	1 539	1 714	1 726	1 978	1 739	2 637	2 416	2 607	2 916	:
P	419	408	564	590	597	662	765	790	839	:
FIN	:	:	:	:	514	543	613	666	650	:
S	:	1 653	:	:	:	:	:	:	:	:
UK	3 137	:	:	:	:	:	:	:	:	:
IS	:	:	19	18	19	18	18	22	24	:
CH	:	:	1 954	:	:	:	:	:	:	:
BG	:	:	2	19	11	14	9	10	25	:
EE	:	:	:	:	18	26	48	48	42	35
LV	:	:	:	:	:	3	4	3	3	6
LT	:	:	:	:	:	:	16	20	19	:
PL	:	:	:	:	:	:	:	:	1 314	1 315
RO	:	:	:	65	84	114	135	159	194	:
SK	:	:	:	153	110	:	:	:	:	:

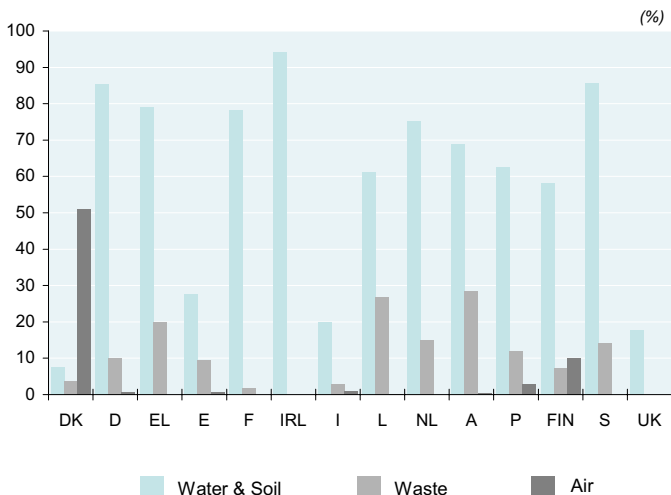
B: Net of receipts from by-products.

Source: Eurostat / New Cronos



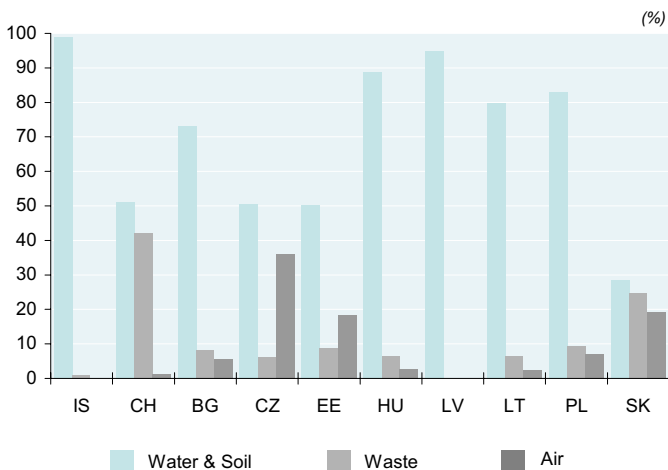
## 9. Environmental Protection Expenditure

Investment by public sector by main domains - EU-15, latest available year



Source: Eurostat / New Cronos

Investment by public sector by main domains - other European countries, latest available year



Source: Eurostat / New Cronos



## Total EPE by Public Sector by domain, latest available year

(%)

	Year	Water & soil	of which:		Waste	Air	Noise	Nature protect.	Others
			Waste water	Ground water & soil					
B	1997	34.1	29.7	4.4	43.8	:	:	10.9	11.2
DK	1999	9.5	0.2	9.3	3.4	31.4	0.4	30.7	24.6
D	1997	56.3	:	:	41.9	0.4	1.5	:	:
EL	1995	15.8	13.8	0.3	56.3	0.1	0.0	20.8	7.1
E	1996	18.9	18.5	0.4	26.8	0.7	0.8	22.8	29.9
F	1998	45.6	45.6	:	40.8	:	:	2.7	10.9
IRL	1998	46.7	46.7	:	:	:	:	2.2	51.1
I	1992	19.5	:	:	2.7	0.9	:	69.6	7.2
L	1997	41.3	41.2	0.1	38.3	0.4	0.1	7.4	12.4
NL	1997	40.4	32.5	7.9	29.7	0.8	1.7	8.9	18.6
A	1998	40.5	40.1	0.5	44.8	0.6	0.2	3.6	10.3
P	1998	43.0	42.9	0.0	25.1	1.5	0.1	22.9	7.6
FIN	1998	41.5	41.5	:	12.9	7.2	:	4.3	34.1
S	1991	46.4	44.0	:	31.6	:	:	:	22.0
UK	1990	17.2	17.2	0.0	51.5	20.8	1.3	:	9.2
IS	1998	21.9	21.9	:	76.6	:	:	:	1.6
CH	1992	42.6	42.0	0.7	41.9	2.3	2.3	:	10.9
BG	1998	48.8	:	:	30.7	3.1	0.7	0.4	16.3
EE	1999	45.9	36.4	9.5	17.8	15.7	0.4	5.4	14.8
LT	1998	69.6	67.6	2.0	13.2	3.0	:	:	14.2
PL	1999	58.5	58.0	0.4	9.2	12.9	0.1	4.8	14.5
SK	1998	54.0	:	:	16.0	30.0	:	:	:

Source: Eurostat / New Cronos





## 9. Environmental Protection Expenditure

### Total EPE by Industry

(Mio ECU)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
B	:	:	:	:	:	:	:	:	:	:
DK	:	:	:	:	:	:	:	:	:	:
D	7 592	7 743	8 390	8 981	9 052	9 350	9 222	7 865	:	:
EL	105	150	174	188	191	241	281	232	260	283
E	:	:	:	:	:	:	:	:	:	:
F	6 089	6 324	6 744	7 596	8 343	8 682	9 221	9 661	9 918	:
IRL	:	:	:	:	:	:	:	:	152	:
I	:	:	:	:	:	:	:	:	:	:
L	:	:	:	:	:	:	:	:	:	:
NL	:	:	:	:	:	1 082	:	1 404	:	:
A	:	:	1 262	1 373	1 242	1 062	1 114	1 192	1 081	:
P	:	:	:	:	126	178	219	176	258	331
FIN	:	:	6	5	338	535	577	554	525	:
S	:	711	:	:	:	:	:	958	:	:
UK	:	:	:	:	3 017	:	:	6 175	:	:
CH	:	:	:	1 204	:	:	:	:	:	:
BG	:	:	35	70	54	60	61	68	102	:
EE	:	:	:	:	5	6	15	15	21	22
HU	:	:	:	:	:	:	:	:	:	516
LV	:	:	:	:	:	24	15	27	40	47
LT	:	:	:	:	:	:	:	40	31	:
PL	1 151	317	249	454	519	691	2 217	2 368	2 675	2 329
RO	:	:	:	168	198	275	309	359	461	:
SI	:	:	:	:	:	73	58	78	63	:

D: includes 'end-of-pipe' investments only.

EL: total business sector.

F: total business sector.

IRL: total business sector.

CH: total business sector.

LV: total business sector.

Source: Eurostat / New Cronos



## Total EPE by industry by domain, latest available year

(%)

	Year	Water & soil	of which:		Waste	Air	Noise	Nature protec.	Others
			Waste water	Ground water & soil					
B		:	:	:	:	:	:	:	:
DK		:	:	:	:	:	:	:	:
D	1997	35	:	:	21	42	2	:	:
EL	1995	85	:	:	3	10	1	:	1
E		:	:	:	:	:	:	:	:
F		:	:	:	:	:	:	:	:
IRL	1998	41	29	11	10	22	0	0	28
I		:	:	:	:	:	:	:	:
L		:	:	:	:	:	:	:	:
NL	1997	29	21	8	8	44	4	3	11
A	1998	23	:	:	27	26	2	2	20
P	1999	23	23	:	26	36	3	:	12
FIN	1998	44	41	4	22	23	0	:	10
S	1997	23	23	:	13	33	:	:	31
UK	1997	36	1	0	28	25	3	:	9
CH	1993	21	21	:	23	32	2	:	22
BG	1998	49	:	:	11	31	0	:	8
EE	1999	47	44	3	23	26	2	0	2
HU	1999	56	50	6	19	18	2	1	4
LV	1999	88	:	:	1	6	:	:	5
LT	1998	68	67	2	9	22	0	:	1
PL	1999	20	17	3	14	65	0	0	0
SI	1998	15	12	4	35	42	2	5	1

D: only include 'end-of-pipe' investments.

EL: total business sector.

IRL: total business sector.

CH: total business sector.

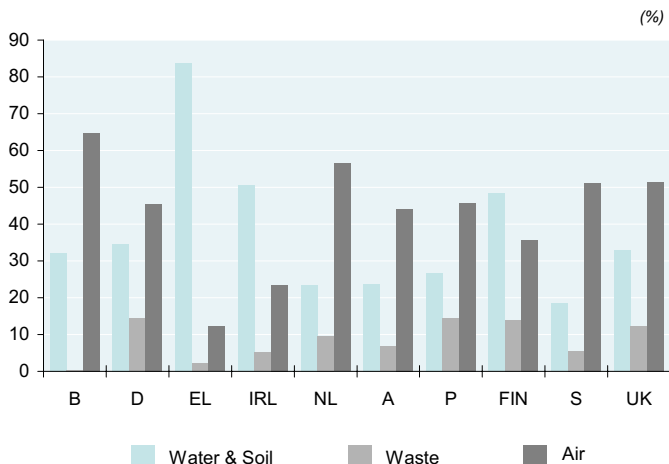
LV: total business sector.

Source: Eurostat / New Cronos



## 9. Environmental Protection Expenditure

Investment by industry by main domains - EU-15,  
latest available year

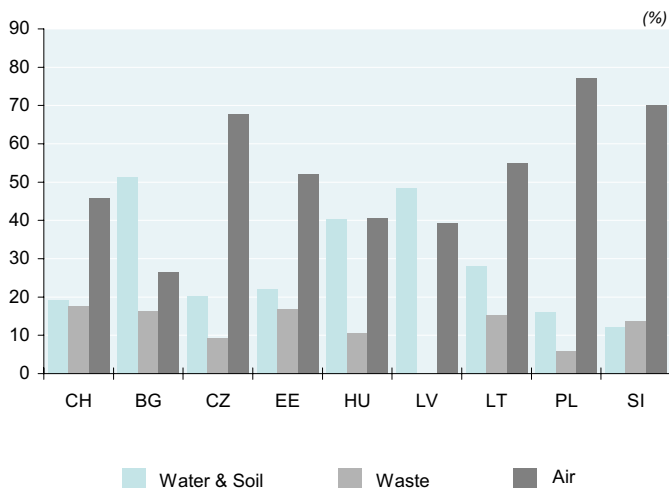


D: Only include 'end of pipe' investments

EL, F, IRL: Include all industry

Source: Eurostat / New Cronos

Investment by industry by main domains -  
other European countries,  
latest available year



CH, LV: Include all industry.

Source: Eurostat / New Cronos