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THE STATE OF THE ENVIRONMENT IN THE EUROPEAN COMMUNITY

OVERVIEW

VOLUME III

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INTRODUCTION

This document presents a general overview of the state of the environment and natural resources in the Community, of the damage and pressures to which they are exposed and of the changes and trends observed. Part One assesses the state of the environment and the main causes for concern today. Part Two reviews the principal human activities to blame for these problems. Finally, the document ends with a series of statistics compiled by Eurostat with the help of the OECD.

This information formed part of the basis used to draft the Community's Fifth Action Programme on the Environment. However, despite the progress made since publication of the 1986 report on the state of the environment in the Community, particularly under the CORINE programme, the data available for the Community as a whole remain fragmentary. In order to implement the Fifth Programme, a substantial improvement will be needed in both the quantity and quality of the data. This is one of the tasks which the Commission assigned to the European Environment Agency in the Regulation setting up the Agency[1]. Unfortunately, however, this Regulation, adopted almost two years ago, has yet to enter into force for lack of a decision on the location of the Agency.

Clearly, a decision is needed to set the ball rolling. Indeed, the purpose of the Fifth Programme is to encourage full participation by Europeans in safeguarding and restoring the environment. To make a success of this strategy, a constant dialogue will be needed between parties with often diverging short-term interests. No such dialogue will be possible without reliable information.

The state of the environment is not a static concept. On the contrary, ecosystems and the human activities which put pressure on them are constantly changing. Our perception of this dynamic phenomenon determines our resolve to produce an effective response to the problems.

Environmental indicators must be interpreted with reference to the trends observed in the past and to those expected in the future, taking account of the purposes for which the information is collected. In practice, it is information which shapes public perception and awareness of the state of the environment and of the damage inflicted on it. Any information published on the environment must satisfy all these demands. At the same time, it is essential to plan ahead for problems which are not yet fully understood and known and, in some cases, which cannot be predicted without analysing the root causes over longer time periods.

This is the only way of laying a foundation for environmental protection policies. Recently it was recognized by the Community's Heads of State in the Declaration adopted by the European Council in June 1990 (the "Dublin Declaration") which stated that "the development of higher levels of knowledge and understanding of environmental issues will facilitate more effective action by the Community and its Member States to protect the environment."

The same Declaration also stated that the Community must seek to disseminate environmental information widely in order to build up "a greater understanding, based on sound scientific assessments, of the nature and causes of problems, and a better appreciation of the costs and other implications of possible solutions."

The environment suffers the effects of natural phenomena and human activities alike, as a result of vastly complex interactions marked by countless transfers of materials and energy between the individual component parts of the environment. A full understanding of the problems is rarely possible. For this reason, political measures in this field are inevitably decided in an atmosphere of uncertainty, based on models which, in reality, simplify a highly complex situation.

An added limitation is the difficulty of obtaining comparable, consistent information on the Community as a whole in all its diversity. However, environmental protection measures must be taken in close coordination with data collection and analysis activities which provide a means of measuring the success of the action taken and lay the foundation for further changes in environment policy.

1) Regulation (EEC) n° 1210/90

Accordingly, the political process in turn must make allowance for the extremely broad spectrum of conditions within the Community. Several aspects must be considered:

- the diversity of the state of the environment (as demonstrated by the quality of the environment, populations of individual species, types of land use, etc.);
- the diverse pressures on the environment (depending on the level of development, industrial structures, farming methods, volume of waste generated, etc.);
- differences in environmental management capacity, reflecting technological development, public awareness and spending on the environment.

This report puts the emphasis on the information relating to and necessary for any assessment of the problems facing the Community and the rest of the world. It will allow political decision-makers and the public at large systematically to consider the problems which emerge and the integrated response required, as outlined in the Fifth Action Programme.

The economic forces which set the pace for all human activity must also be taken into account. In this context, they are a major factor in the current climate of far-reaching change in socio-economic systems and structures, as illustrated by:

- the structural change triggered by completion of the internal market;
- the switch to a market economy in eastern and central Europe;
- the imminent integration of the EFTA economies in a "European Economic Area";
- the liberalization of world trade in the wake of the GATT negotiations;
- the growing importance attached to sustainable development and global interdependence, as marked by the United Nations Conference on Environment and Development in 1992.

This extremely powerful interaction between the economy and the environment at every level therefore raises three vital questions for the future:
- which past trends will continue?
- how will the environment be affected by this economic and social change?
- how can the direction of these changes be influenced to the benefit of the environment?

This document follows the approach traditionally adopted in the OECD reports on the state of the environment by reviewing, one by one, the condition of the individual components of the environment - air, water, soil, etc. - and the agents responsible for triggering changes. Admittedly, this approach leads to simplification and repetition. The individual components of the environment are not closed systems. On the contrary, they constantly exchange material and energy in the course of countless interactions. Moreover, a single human activity such as agriculture or transport has ramifications for several parts of the environment. Conversely, each individual part of the environment is exposed to many different human activities. It is impossible to describe and quantify all these interactions on a Community-wide scale with the data and scientific knowledge available today. Nevertheless, this document attempts as far as possible, to explain the highly complex and constantly changing nature of the environment which must be addressed by policy.
Finally, global issues are not dealt with specifically in this document, which focuses strictly on the state of the environment in the Community.

Part one

THE STATE OF THE ENVIRONMENT

1. AIR

Some progress has been made towards reducing emissions of sulphur dioxide, suspended particulates, lead and CFCs at the Community level. But serious problems persist or are beginning to strongly emerge, particularly with the greenhouse gases such as carbon dioxide, oxides of nitrogen, atmospheric ozone and methane. Air quality, or, to be precise, the concentration and combined effect of pollutants, continues to give cause for concern in most towns and cities due to the increasing emissions from motor vehicles (private cars, lorries, coaches and buses).

Simulations for the year 2000, taking account of measures already adopted or planned and the foreseeable changes in the vehicle fleet and use, have produced contrasting results (see Figure 1.19). VOC, CO and NOx emissions are expected to fall from 1992 on wards. A sudden reduction in 1995 followed by stabilization is forecast for S02 but a constant increase is predicted for CO2. However, these overall reductions in emissions disguise the fact that the situation is deteriorating in some places, particularly at sites experiencing continued urban and industrial growth without accompanying controls. Consequently, the same improvements in air quality have not been achieved everywhere in the Community.

Air is a medium relatively stable in composition, where a host of pollutants have a vast impact even in extremely small concentrations (less than 0.1%). Not all the pollution emitted is dispersed by the wind. Its impact can be local or sometimes global. The principal pollutants are particulates and black smoke, sulphur dioxide (SO2), oxides of nitrogen (NOx), oxides of carbon (CO2 and CO), ozone (O3), volatile organic compounds (VOC), unburnt hydrocarbons (HC), heavy metals and radioactive elements. They come from a wide variety of sources: energy production, refineries, metalworks, the solvents industry, transport, agriculture or forest fires.

Long regarded as basically a local problem, in recent years air pollution has acquired an international and global dimension, with the emergence of phenomena such as acid rain, the greenhouse effect or the depletion of the stratospheric ozone layer (see Figure 1.1).

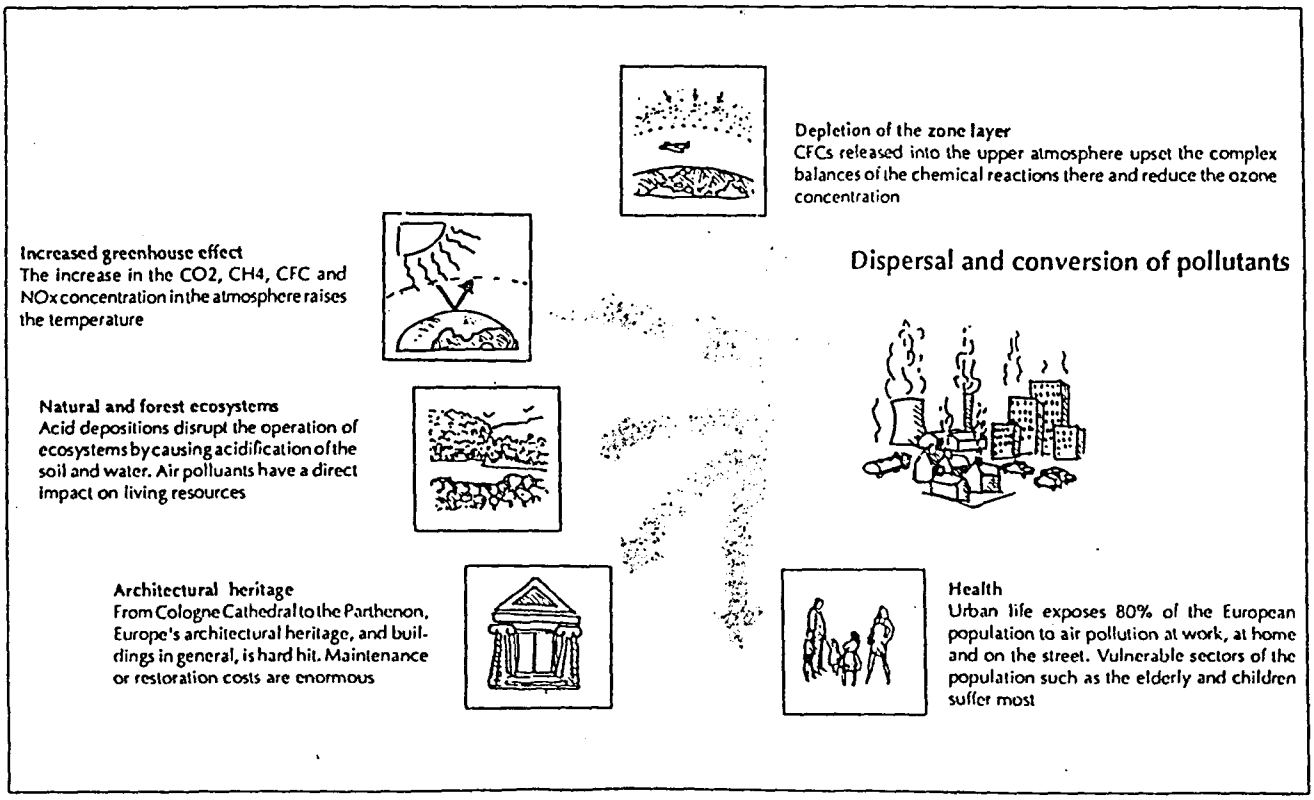


Figure 1.1: Sources and effects of air pollution

1.1 Air quality

However obvious to everyone when critical levels are reached, air quality reflects a complex reality. It is a combination of different parameters, some physico-chemical (gas concentration), some a matter of time and space (location and time of measurement) and others technical (measurement methods and instrumentation). Figure 1.2 illustrates the variation in air pollution readings from the same site over a 24-hour period.

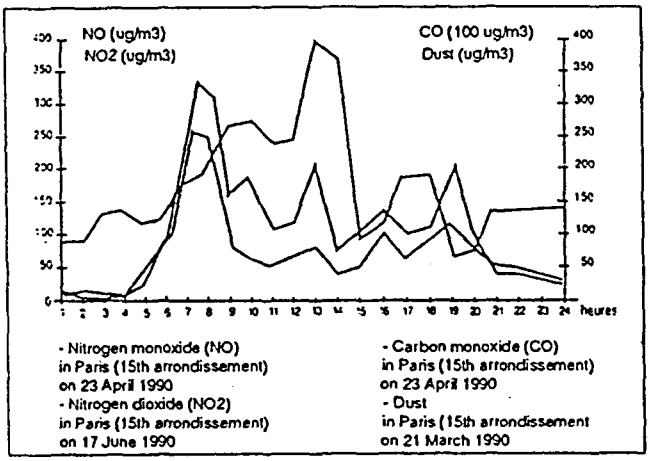


Figure 1.2 NO, NO2 and dust concentrations in Paris on 21 March,23 April and 17 June 1990

At Community level, Council Decision 75/441/EEC introduced a procedure for exchanging data between measurement stations in the Member States on sulphur compounds, particulates, NOx, 03, CO and heavy metals. Despite its imperfections (e.g. the criteria concerning the siting and selection of the measurement stations vary from one Member State to another and the non-uniform distribution across their territory), this procedure is the main source of data on air quality at Community level. The results, as shown in figure 1.3, reveal that, with the exception of a few blackspots, the situation has improved for SO2, strong acidity and suspended particulates. Nevertheless, this at first sight good performance masks, at least partly, the urban pollution problems still caused by smog in most major cities.

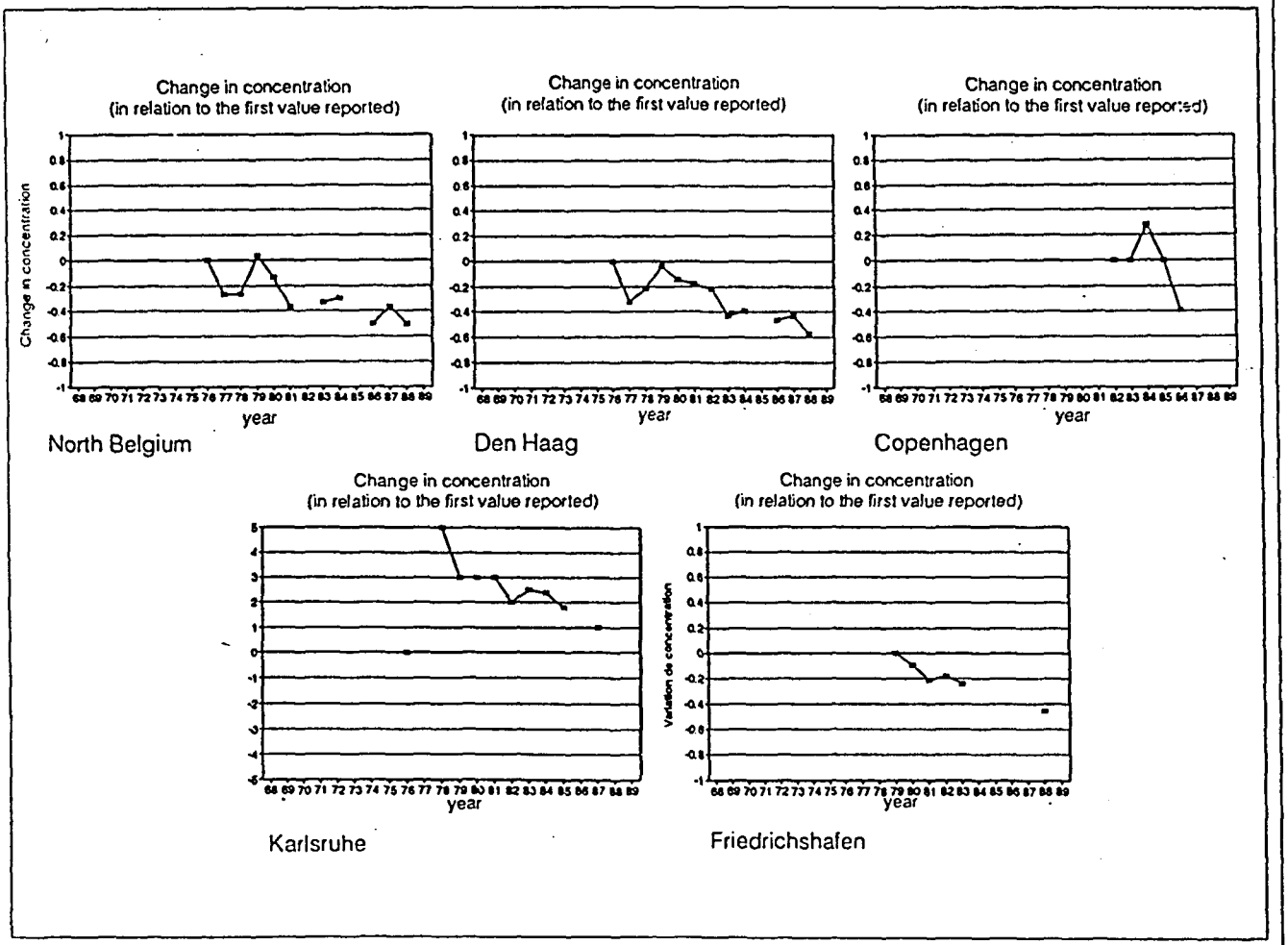


Figure 1.3(a) Trends in SO2 concentrations from 1975 to 1987.

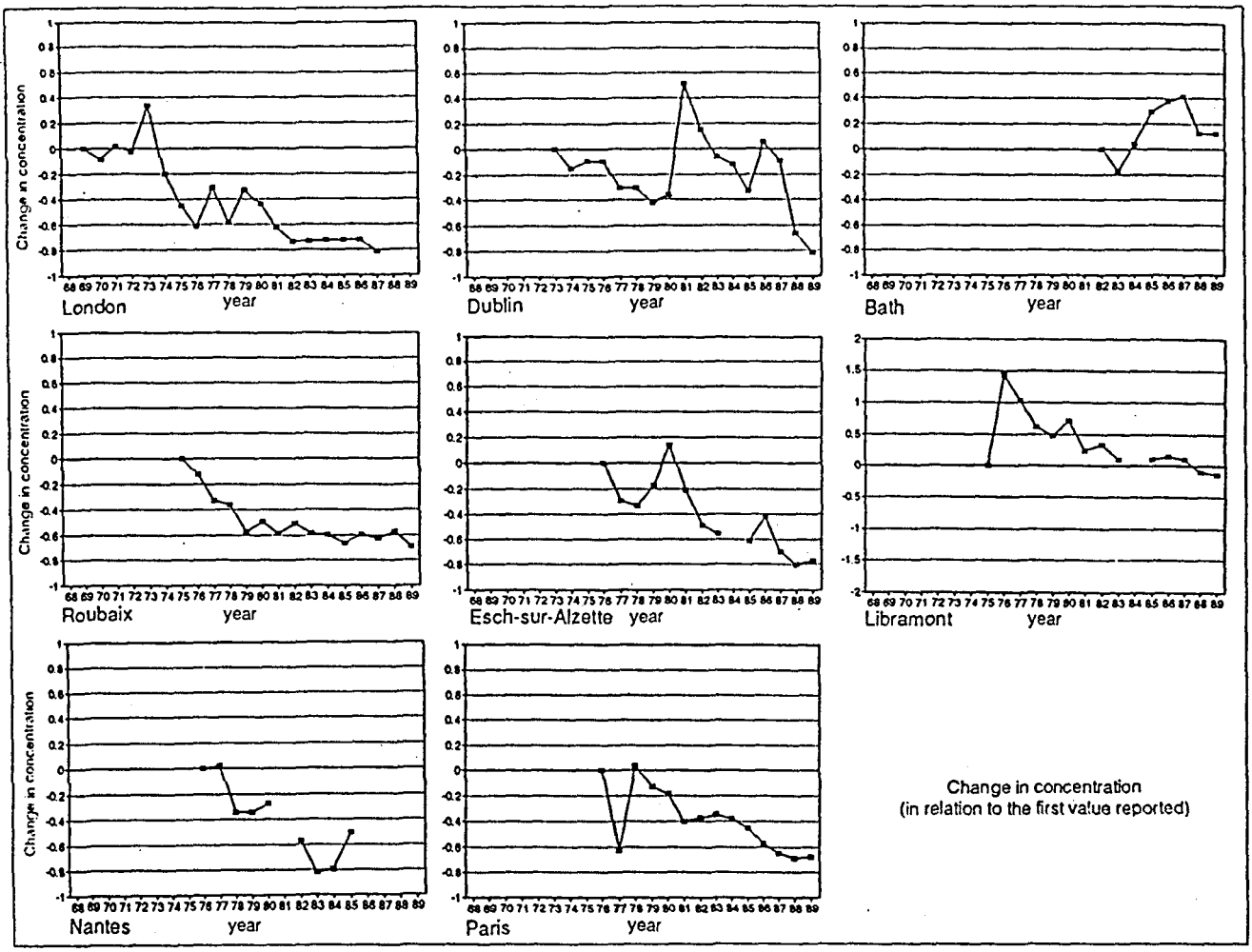


Figure 1.3(b): Strong acidity trends from 1975 to 1987

Another source of information is provided by the obligation placed on the Member States by the Directives on air quality to send the Commission data on each incident exceeding the limit values for sulphur dioxide and particulates (Directives 80/779/EEC and 89/427/EEC), lead (Directive 82/884/EEC) and oxides of nitrogen (Directive 85/203/EEC). Too few data have been collected to allow any meaningful assessment of air quality trends (see Figures 1.4(a) and (b)).

For SO2	83/84	84/85	85/86	86/87	87/88
B	-(1)	-(3)	-	-(1)	-
DK	-	-	-	-	-
D	1	1(4)	-	1(4)	-
GR	-	-	-	-	-
E	-	-	-	(3)	(3)
F	9(1)	13(3)	8(1)	6	6
IRL	-	-	-	-	-
I	1(2)	1(3)	1(1)	1(2)	?
L	1	1	1	1	1
NL	-	-	-	(1)	-
P	-	-	-	1	1
UK	3	1	1	2	-

For BS	83/84	84/85	85/86	86/87	87/88
B	-	-	-	-	-
DK	-	-	-	-	-
D	-	1	-	-	-
GR	(1)	(1)	1	1	1
E	-	-	-	(10)	(5)
F	-	1	2	-	-
IRL	1	1	1	1	1
I	1(2)	1(4)	1(1)	3	?
L	-	-	-	-	-
NL	-	-	-	-	-
P	-	-	-	2	1
UK	6	3	6	2(1)	2(1)

Figure 1.4 Number of incidents exceeding the limit values laid down by Directive 80/779/EEC for (a) SO2 and (b) dust

To find out more about air quality in the Community, the Commission has started a pilot project. The preliminary results are set out in Figure 1.5.

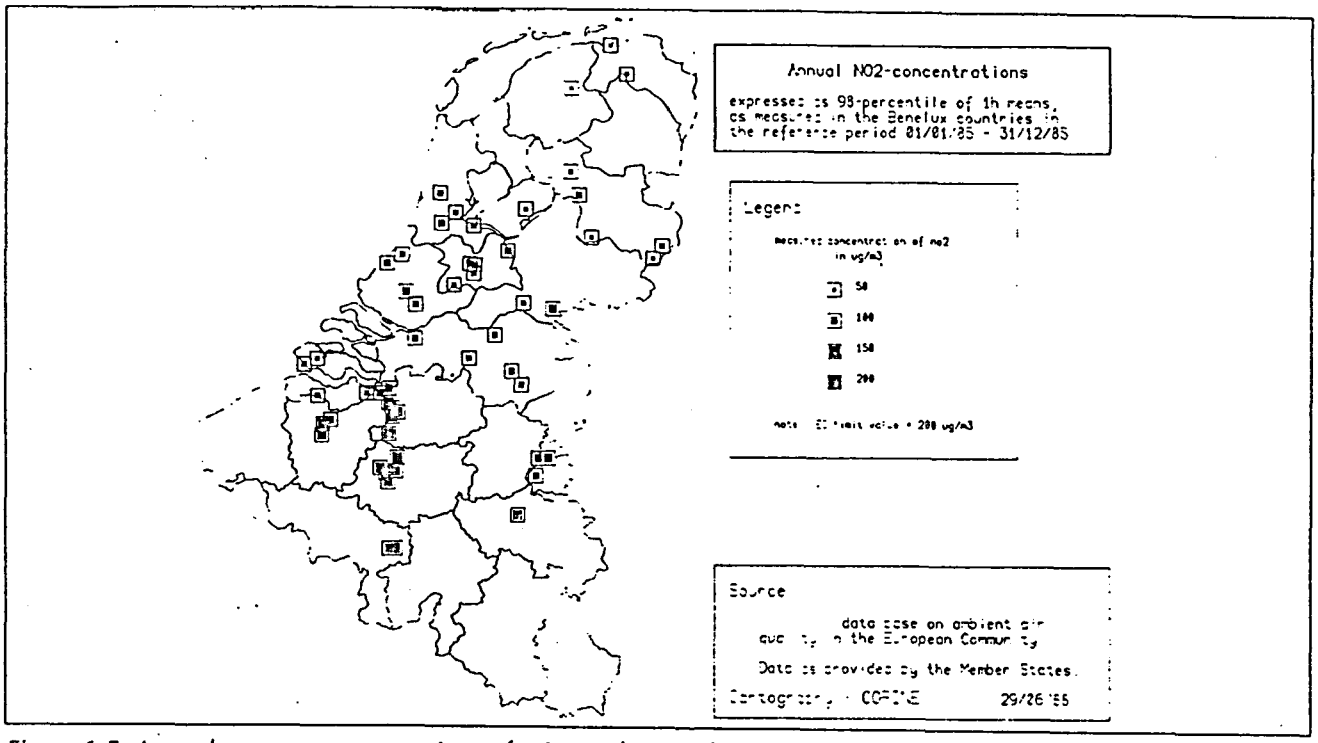


Figure 1.5 Annual average concentrations of NO2 in the Benelux countries

1.2 Sources of pollutants

The CORINAIR data base contains information on the sources of discharges (subdivided into 100 or so categories) and their geographical origin (some 500 regions and over 1 000 point sources), particularly for sulphur dioxide (SO2), oxides of nitrogen and volatile organic compounds.

SO2

Combustion of fossil fuels (in power stations or for domestic heating) is the main source of SO2 emissions and is responsible for 66% of the total emitted. It is followed by industrial combustion and processes with 25%, refineries with 6.6% and road transport with 2.9%. However, these European averages disguise a wide variety of situations, as can be seen from Figure 1.6. To give one example, non-industrial combustion accounts for less than 40% of the total in France, the Netherlands and Luxembourg but for over 75% in the United Kingdom, Spain and Greece.

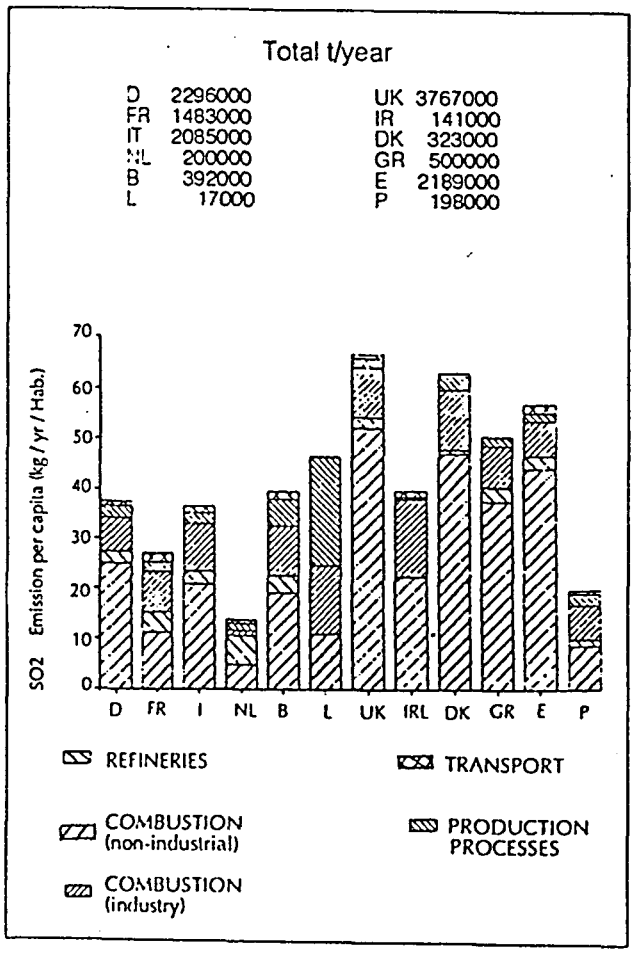


Figure 1.6: SO2 emissions for each Community country in 1985

Some 50% of the total emissions come from just 5% of the regions in the Community. Naturally, heavily industrialized regions such as the Ruhr area or North Yorkshire are amongst the worst polluters. But other more rural areas, such as La Coruña or Brindisi, or recently developed centres such as the Athens region are big polluters too.

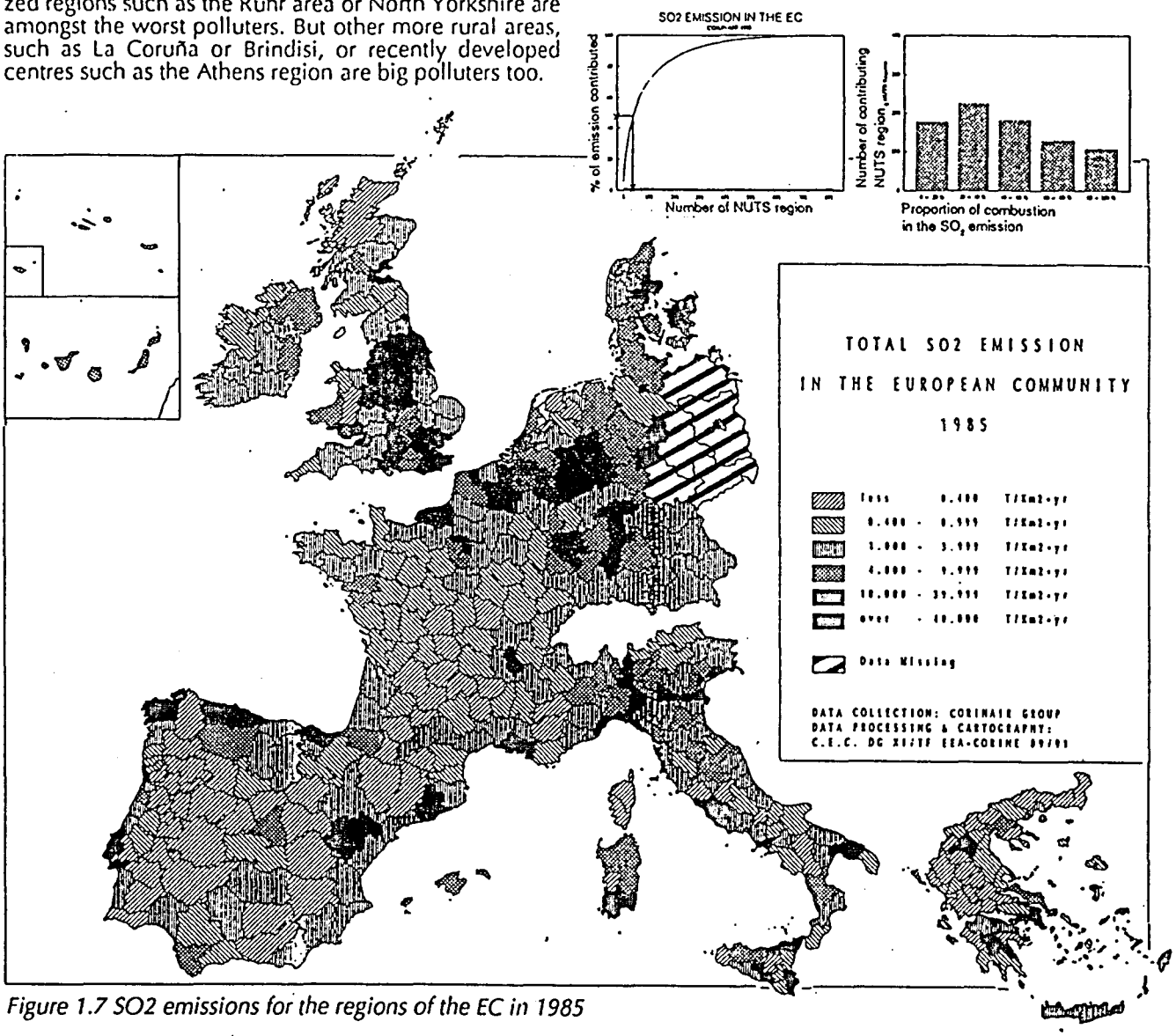


Figure 1.7 SO2 emissions for the regions of the EC in 1985

There was a marked decline in SO2 emissions between 1970 and the mid-1980s (as also occured in the USA and Japan), due mainly to the energy-saving measures taken in response to the 1973 and 1978 oil shocks, industrial restructuring and the adoption of new anti-pollution regulations. Since the mid-1980s emissions have been falling at a slower rate.

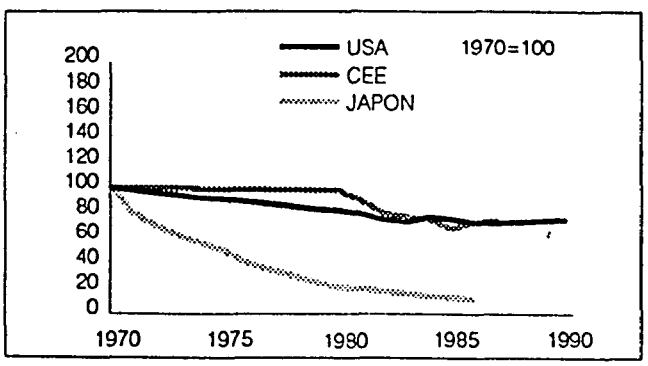


Figure 1.8 SO2 emission trends in the EC, USA and Japan

NOx

Some 54% of the NOx emissions in the Community stem from road transport, compared with 17% from power stations and 14% from domestic users. Although here too there are marked variations from one Member State to another, the breakdown of emissions by sector is more uniform than with SO2.

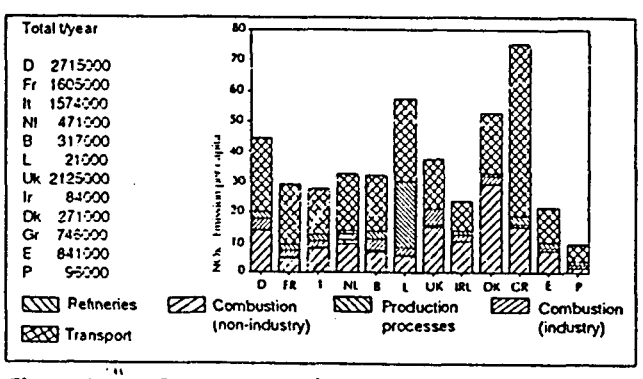


Figure 1.9 NOx emissions for EC countries in 1985

Figure 1.10 shows that emissions are concentrated around densely populated regions with heavy road traffic.

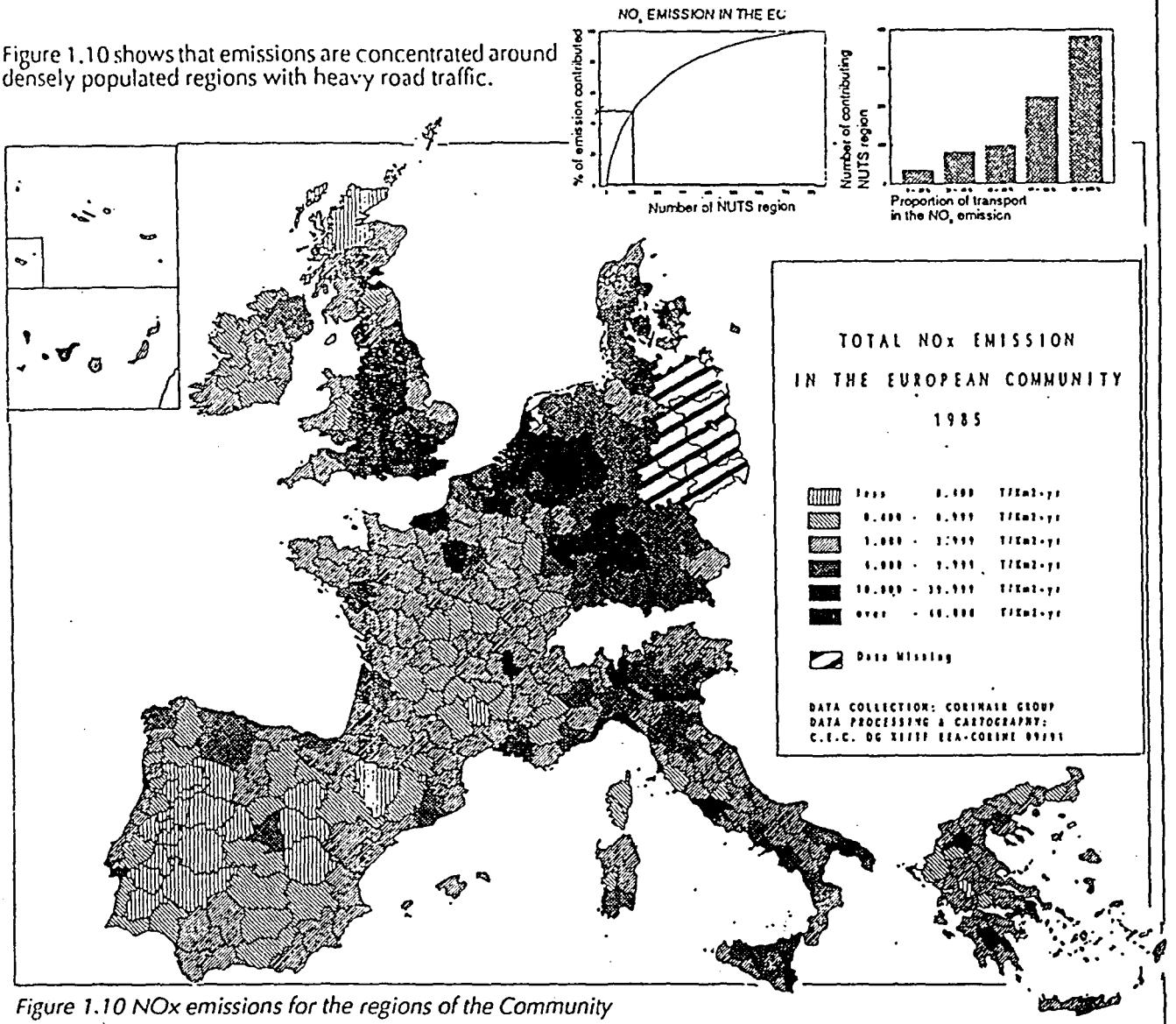


Figure 1.10 NOx emissions for the regions of the Community

Together with S02, oxides of nitrogen (NOx) are the root causes of acid rain and urban smog. High doses of NO2 can cause respiratory diseases, while N20 contributes to the greenhouse effect.

When the results for this type of pollutant are analyzed it can be shown that the reduction in emissions achieved by pollution control measures taken over the last 20 years, are more than offset by the increases in the number of vehicles on the road. The net result is that NOx emissions are still rising in many countries.

Volatile organic compounds

Emissions of volatile organic compounds (VOC) are less well known than SO2 and NOX, but such compounds are also emitted from a wide range of sources, principally road transport (27%) and the solvents industry (17%). Natural emissions contribute to11% of the total overall, with proportionally greater quantities from Mediterranean countries due to climatic conditions.

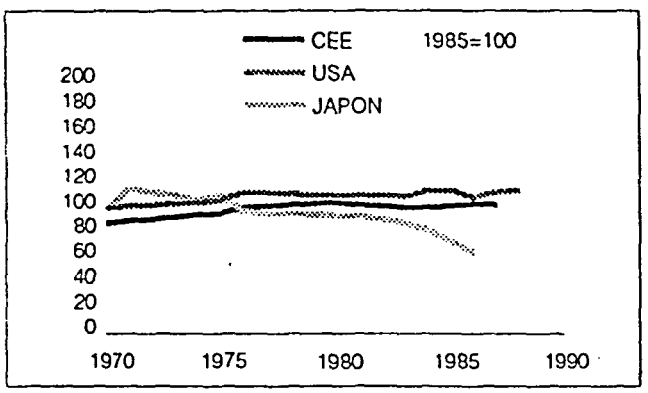


Figure 1.11 NOx emission trends in the Community, the USA and Japan

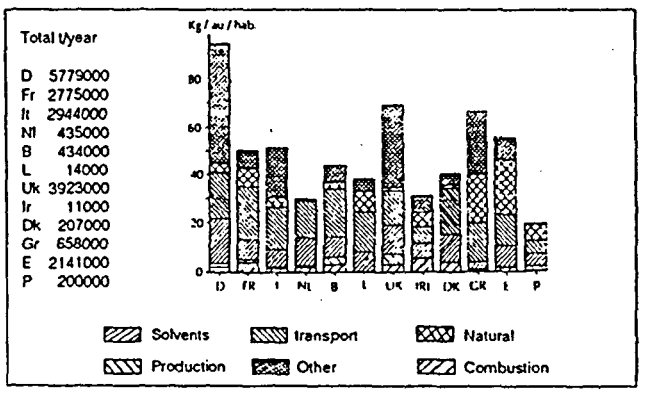


Figure 1.12 VOC emissions in EC countries

Stratospheric ozone

Ozone in the upper stratosphere absorbs a large proportion of the ultraviolet rays from the sun, thus protecting non-aquatic life.

Many common industrial products destroy ozone:

- chlorofluorocarbons or freons used principally as propellants in aerosol cans, refrigerants or solvent production (see Figure 1.13);

- bromofluorocarbons or halons used mainly in fire extinguishers;

- carbon tetrachloride and methyl chloroform.

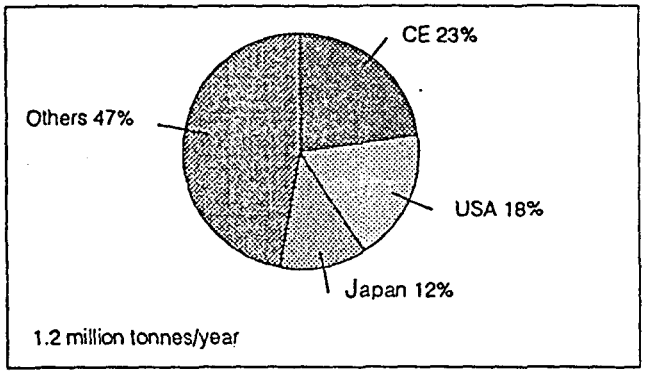


Figure 1.13 World market in CFCs in 1988

The European Community has adopted a series of measures to combat this new threat, the most recent and important being Regulation 91/594/EEC which is designed to put an end to the use of CFCs by 1997, of halons by 2000, of carbon tetrachloride by 1998 and of trichloroethane by 2005. This is over two and a half years earlier than scheduled by the Montreal Protocol on the elimination of CFCs.

Greenhouse effect

The familiar phenomenon of the greenhouse effect plays a key role in regulating the climate, thanks to the capacity of certain gases usually present in the atmosphere in very small quantities (CO_2, CH_4, O_3, N_2O, CFCs, etc.) to intercept infra-red radiation (from the sun) as it is reflected from the land and ocean surface. This gradually warms the atmosphere. The same principle is familiar to gardeners who capture the heat released by the infra-red rays in their greenhouses.

The problem here is that the expansion of human activities brings with it marked increases in the concentrations of greenhouse gases in the air (see Figure 1.14), thus creating the conditions for gradual global warming.

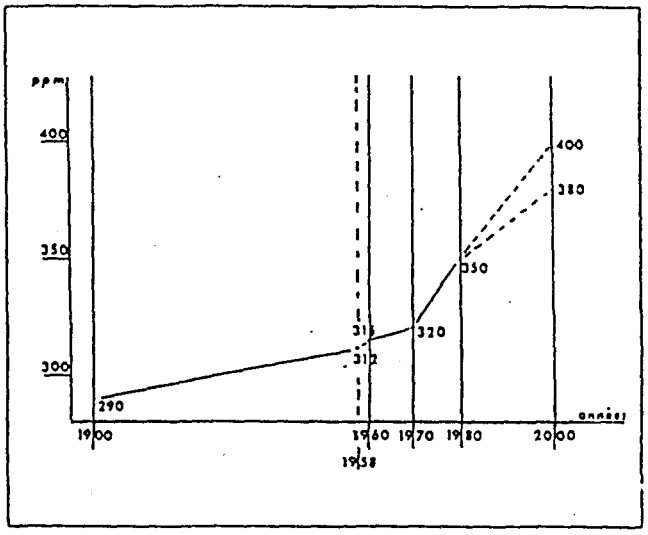


Figure 1.14 Increase in CO2 content in the lower atmosphere from 1900 to 1980 and possible scenarios for the future

The part played by individual gases and sectors of activity in this increase varies considerably. CO_2 alone is to blame for half the greenhouse effect (see Figure 1.15). But the other gases are better at absorbing infra-red rays and accumulate faster in the air, particularly CH_4 which is already attributed with 15% at the greenhouse effect. The vast majority of CO_2 emissions stem from combustion of fossil fuels (see Figure 1.15) and deforestation. CH_4 discharges on the other hand are attributable mainly to the petrochemical industry, refineries and agriculture (rice-growing and livestock-rearing).

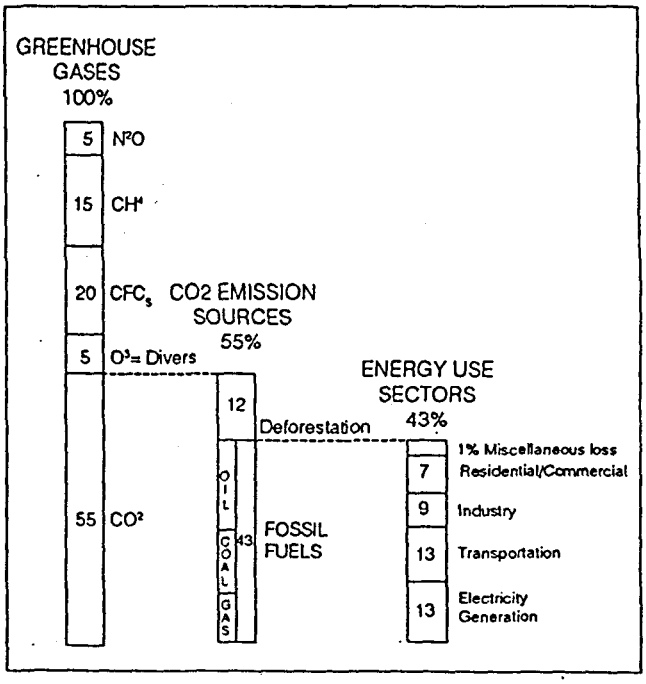


Figure 1.15 Greenhouse gases

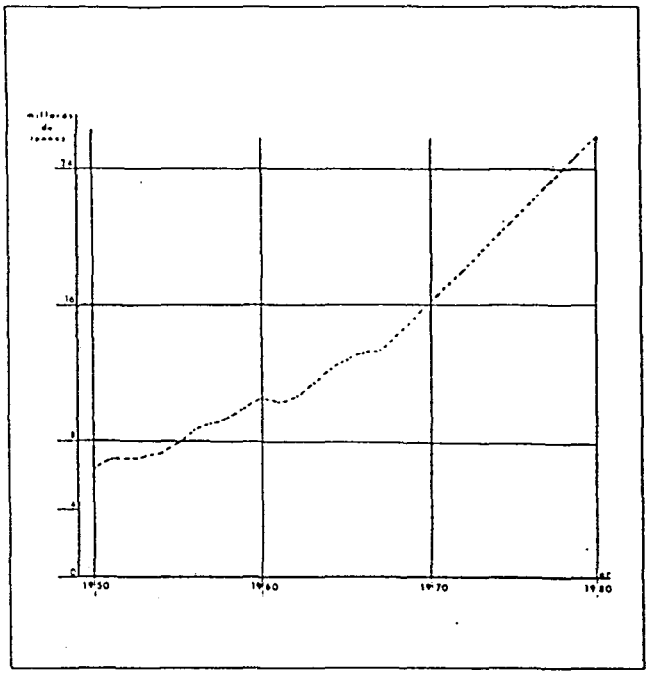


Figure 1.16 Increase in fossil fuel consumption

Total and per capita carbon emissions in 1989

	Total (million tonnes C)	% of world total	per capita (tonnes C)
EUR 12	760,9	12,9	2,34
USA	1352,7	23,0	5,45
Japan	296,5	5,0	2,40
USSR and Eastern Europe	1463,2	24,9	3,63
Rest of the world	2011,9	34,2	0,49
World total	5885,2	100,0	1,13

Figure 1.17: Distribution of CO2 production by major economic blocs

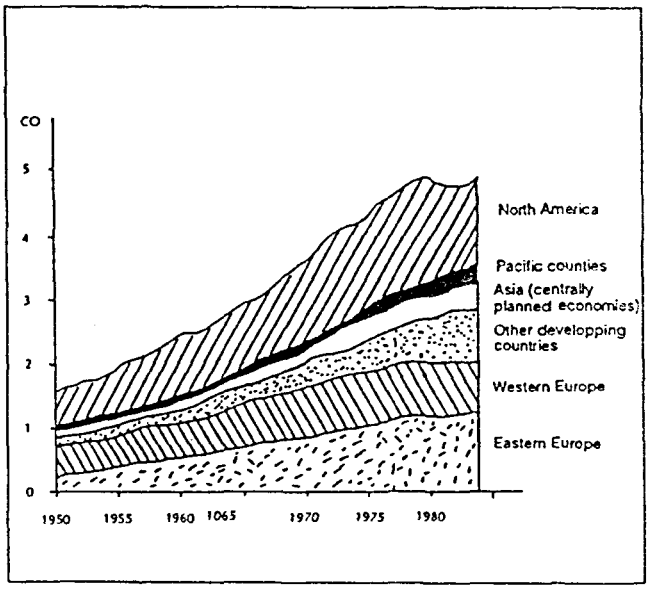


Figure 1.18 CO2 emission trends worldwide

The exact long-term consequences of this growing greenhouse effect are unforeseeable, given the complex reactions which the increase in greenhouse gases could trigger. Many uncertainties remain, particularly as regards the role played by the oceans and cloud cover. Nevertheless a consensus has emerged amongst the scientific community on two points: if nothing is done, by the middle of the next century the greenhouse effect will increase the average temperature of the planet by 2 to 3°C which, in turn, will raise the sea level by between 17 and 32 cm. However, these, are only the average figures. Locally, the impact could therefore be far greater. For example, in the Mediterranean regions, the temperature could rise by 50% more than the world average.

As yet there is no clear picture of the impact of such an increase in temperature and sea levels. However, it could be considerable. The most likely direct effects are flooding of unprotected or ill-protected coastal regions, retreat of the glaciers and icecap, changes in atmospheric circulation and in the water cycle and relocation of the main terrestrial ecosystems and agricultural activities. Some will gain, others will face disaster. These changes are sure to transform the geopolitical scene.

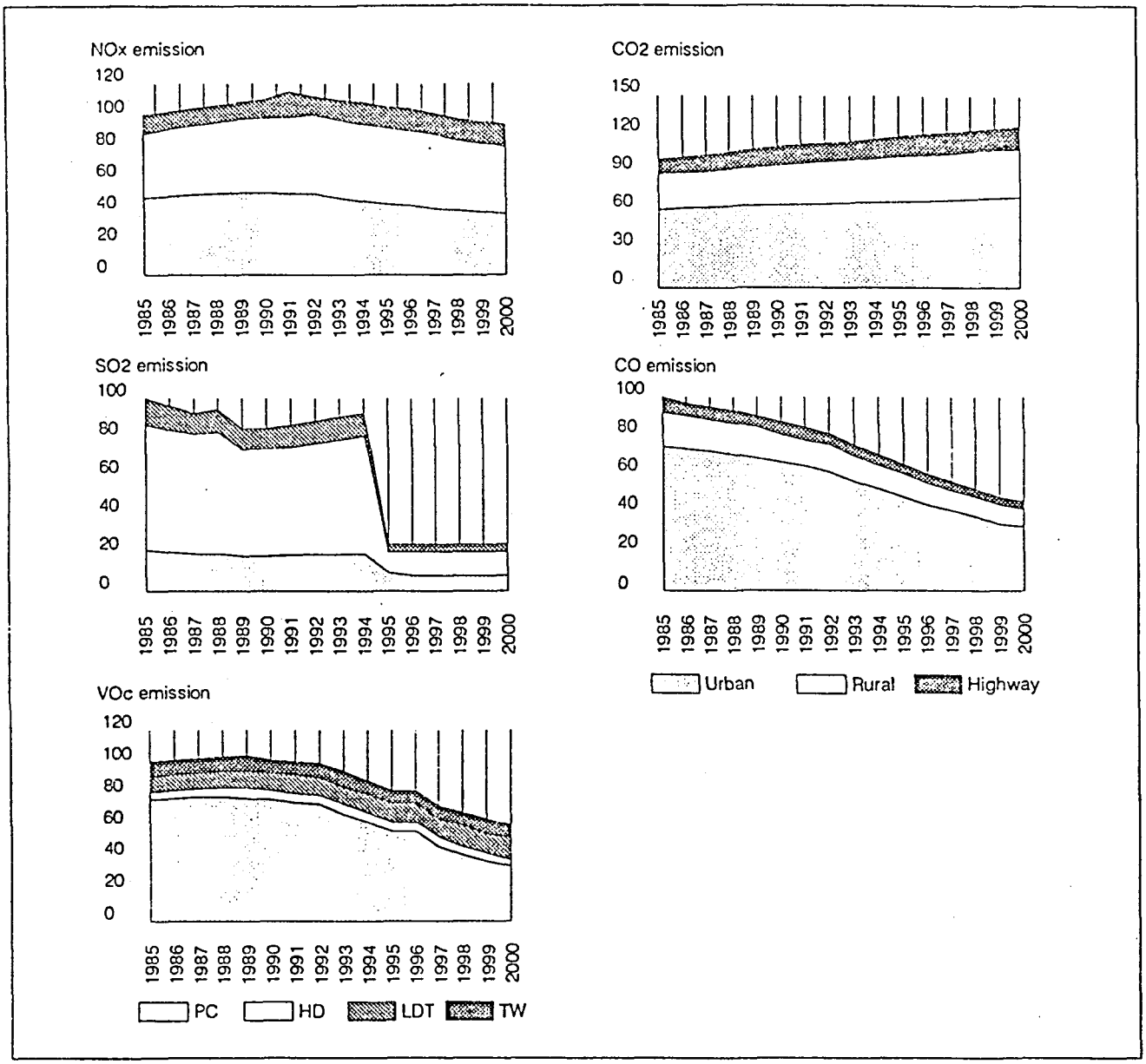


Figure 1.19: Forecast emissions of selected pollutants from motor vehicles in the EC as a whole

2. WATER

Despite the investments made over the last twenty years or so, generally, the state of the Community's water resources has not improved. The situation varies according to the region and the parameter measured, but there are far more examples of deterioration in quality than of improvements.

Groundwater pollution in particular is now widespread. In many regions, sustainable use of groundwater for drinking supplies is or soon will been a problem. Use of water resources has always been a problem in the Mediterranean regions. Now, though, this difficulty has spread to many temperate zones.

The proportion of coastal waters and estuaries damaged by pollution or eutrophication has risen in recent years and is still on the increase. Acidification still poses a problem to inland water bodies. Pollutants unnoticed in the past threaten to become important, particularly pesticides and more generally, micropollutants.

Against the background of the current by increasing demand, without proper management, the impending depletion of freshwater resources in certain regions threatens to create a major problem in the future, particularly in the Mediterranean countries. This is bound to exacerbate tensions between users. To avoid that water resources limit development for regions with important needs, it is necessary to adopt appropriate management of the available resources, implying planning of different uses.

As regards quality, vigorous action must be taken to end deterioration of water quality. This is partly to consolidate the investments already made at the major point sources (by companies, local authorities, etc.) and partly to reduce emissions from non-point sources (principally agriculture and small and medium sized firms).

Water is a key element having a wide range of functions, acting as an economic resource, media for life, and a major component of living organisms and ecosystems; these multiple demands and roles pose conflicts and thus raise increasingly difficult management problems.

Traditionally, a distinction is drawn between inland water (in turn subdivided into surface water and groundwater) and the sea. These two very different types of habitat are both heavily affected by human activities. Moreover, human society has such an impact that in practice there are no more natural water bodies left in Europe which are fully unscathed by human activities.

2.1 Inland water: the need for integrated management

Water management raises a series of questions, some quantitative (water flow, balance between reserves and demand, etc.) others qualitative (pollution). The two sides are closely linked just as surface water and groundwater are two halves of the same resource. Consequently, they must be managed jointly.

A resource in great demand

Long considered inexhaustible and renewable ad infinitum, today water resources are stretched to their physical limits in places where consumption is high and/or in times of drought when supplies run short. Just like trade in economic commodities on the market, management of water resources is a question of striking a balance between (a relatively stable long-term) supply on the one hand and demand on the other.

Although some regions have far more resources than others, the Twelve as a whole have enormous reserves. On the demand side, consumption has been rising steadily for years in line with the growing per capita withdrawal (see Figure 2.1). Nevertheless per capita offtake still varies sharply from one country to another, from 200 or 300 cubic metres per inhabitant in Luxembourg, Ireland and Greece to between 1 000 and 1 200 cubic metres per inhabitant in Italy, Spain and Portugal (see Figure 2.2).

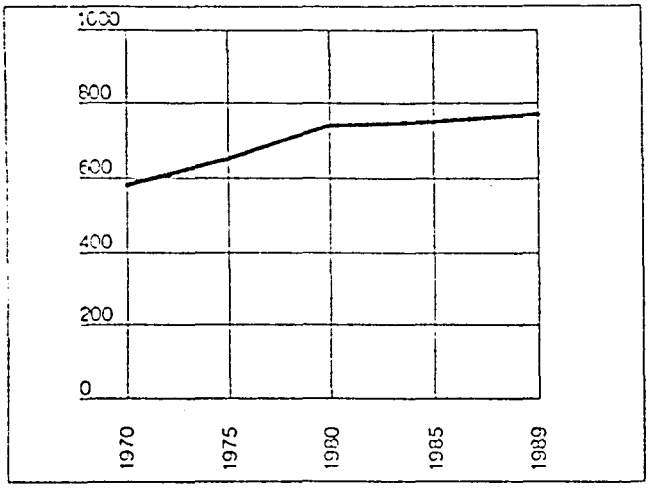


Figure 2.1 The evolution of water withdrawal per capita (EEC average in m3)

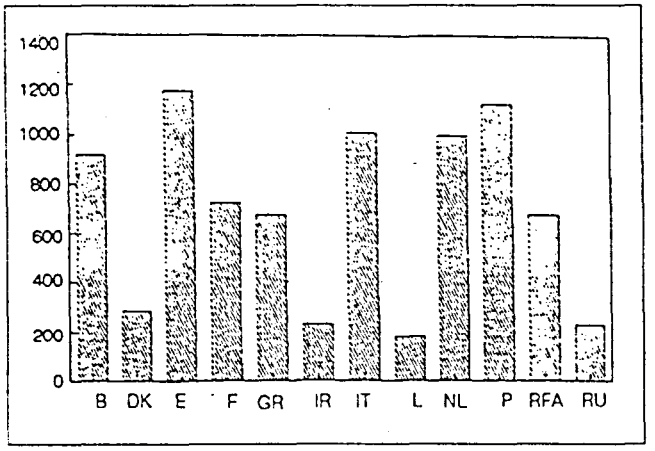


Figure 2.2 Per capita water with drawal (m3/year)

This growing demand has been accompanied by ever increasing pollution treatment costs which have been passed on in water prices (see Figure 2.3). Water sources likewise vary considerably from one country to another, with groundwater's share ranging from 99% in Denmark to 32% in the United Kingdom (with surface water providing the rest).

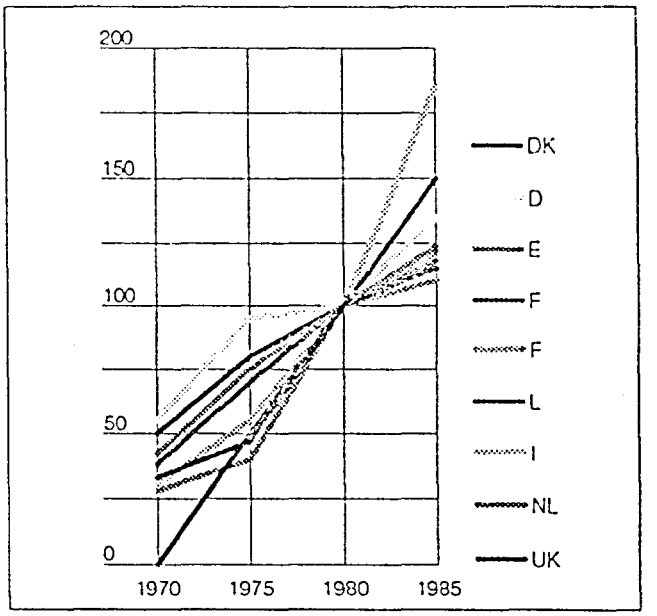


Figure 2.3 Water price index (1980 = 100)

Users in the home, industry, particularly electricity generation, and irrigation, notably in the south of the Community, are the principal driving forces behind this trend (see Figure 2.4).

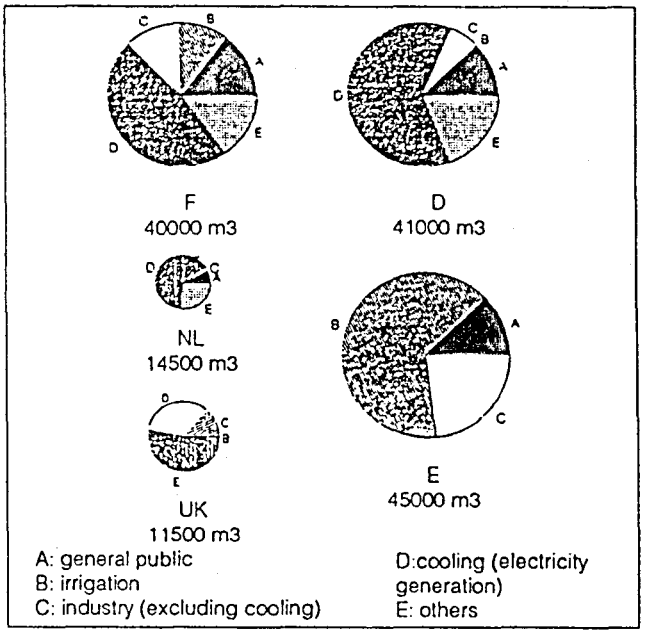


Figure 2.4 Total water withdrawal in selected countries by major user category

As a result of this increase in consumption, water is in short supply in several regions at certain times of the year. This is primarily because the resources cannot be stretched ad infinitum and can no longer satisfy demand. The droughts of recent years have aggravated the phenomenon while at the same time highlighting this new state of affairs. Equally, water quality is becoming an increasingly decisive factor directly dictating the purposes for which the water can be used in practice. Already these shortages

have sparked conflicts among users which are bound to grow worse unless more stringent measures are taken, especially since a significant increase in supply costs and continuous growth in the water market are expected (see Figure 2.5).

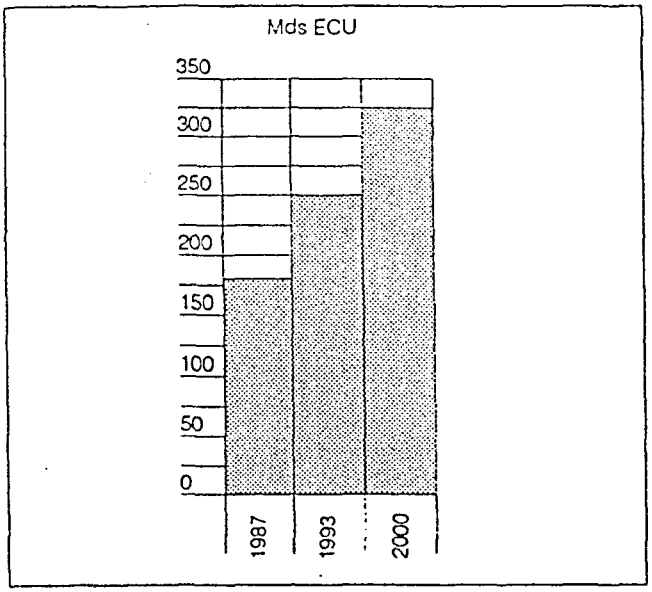


Figure 2.5 Growth prospects for the European market in water

A sharp deterioration in quality of inland waters despite the progress made.

Surface water

Based on the data available, a study taking account the requirements of the Directive on the quality of surface water for human consumption showed that 25% of the rivers and canals in the Community fell short of Community standards (see Figure 2.6).

Assessment of inland water quality based on Newman
(% of river length in each category)

Categories based on UK NWC 1985 system	1A	1B	2	3	4
B	35	21	17	16	11
DK		80		20	
F	8		26	60	6
D	6.5	38	40	14	1.5
GR	(20)	(40)	(20)	(15)	(5)
IRL		84			
L	47	25	13	11	4
NL	12	65	18	4	1
England and Wales	36	33	21	8	2
Scotland	95	4	0,5	0,5	
Nothern Ireland	15	69	11	5	0

No estimates are available for Italy

The totals for the community as a whole are set out below, excluding the data from Denmark, Spain, Italy, Greece,and Portugal

Category	Category length	% of river in the category
1A	good quality	14
1B	good quality	25
2	medium quality	35
3	fairly quality	22
4	low quality	4

Figure 2.6: Assessment of inland water quality in the Community

The lack of a harmonized method or of a full picture of the quality of the aquatic environment further complicates interpretation of surface water quality trends in the Community. These can only be deduced from the mass of representative national data from each Member State (notably within the framework of the Community Directive on the exchange of information on surface water quality).

In Germany, the biological quality of the water appears to have improved considerably since 1975. Nevertheless several stretches of the Saar, the Rhine, the Main and the River Emscher are still classified as "severely polluted", while water quality has also deteriorated in the Elbe. In the United Kingdom, average surface water quality has, in general, held steady, with numerous local improvements and deteriorations. In Belgium, the biological quality of the northern Meuse remains substandard. In France the results from roughly half the measurement points operated by the water authorities fall short of the quality standards. An estimated 80 km of river remains heavily polluted in Luxembourg.

Looking specifically at the oxygenation rate for which industry, domestic users and urban pollution bear most of the blame, the measurements indicate a general improvement in many European rivers.

For eutrophication, the main causes are nitrogen and phosphorus or, in the final analysis, domestic users, agriculture and, to a lesser extent, industry. In this respect, as can be seen from Figures 2.7 and 2.8, the situation of the different categories of aquatic ecosystem gives cause for concern.

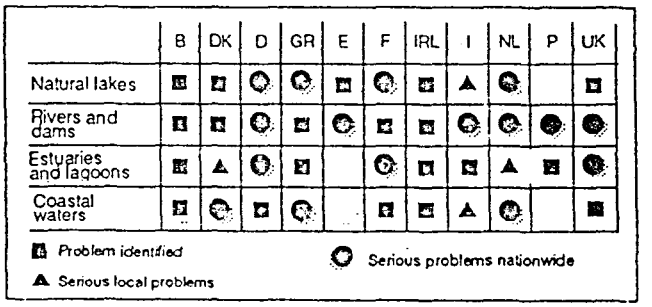


Figure 2.7 Eutrophication in the Community

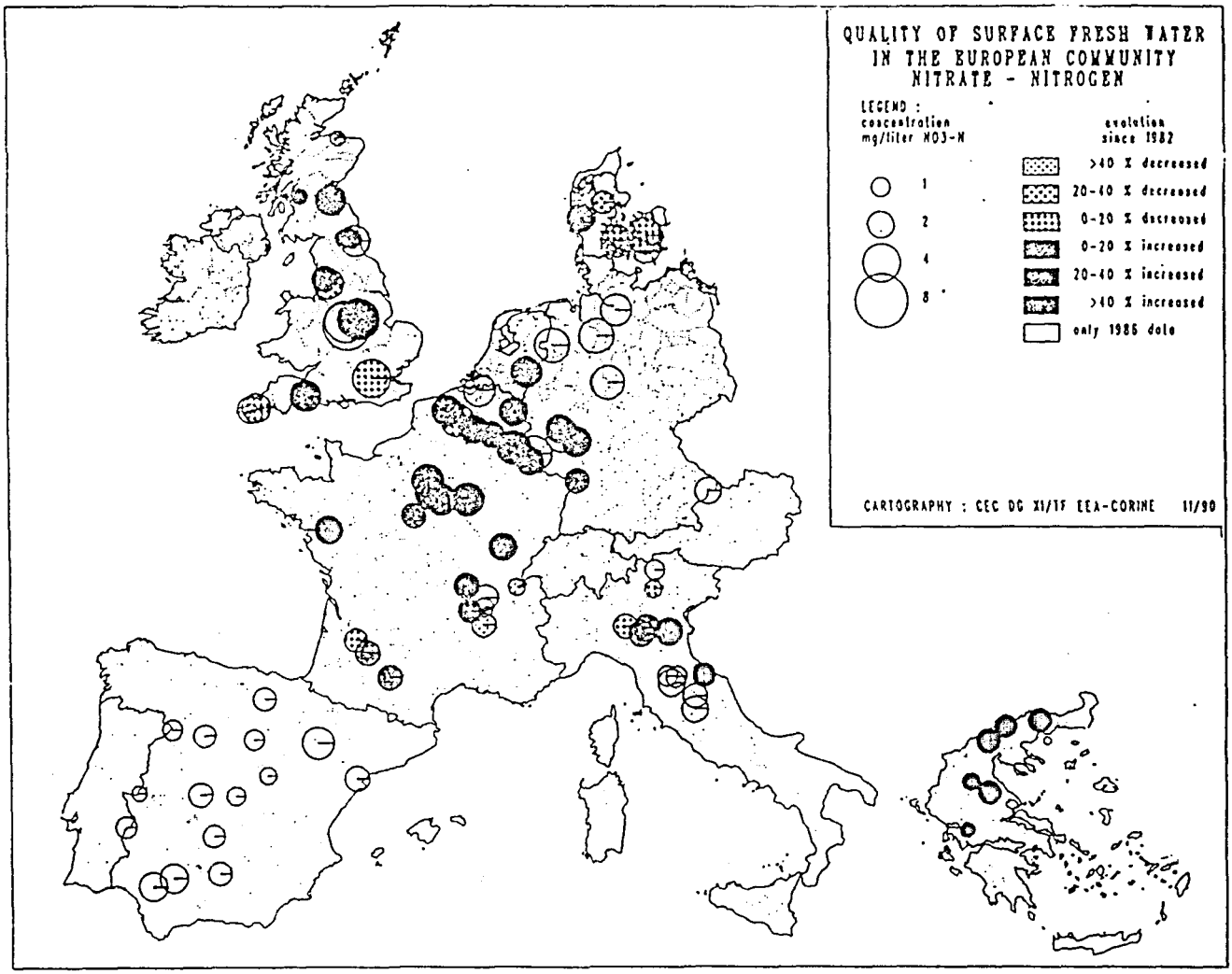


Figure 2.8: Quality of surface water in the Community

Contamination of surface water by micropollutants continues to give cause for concern in many regions including northern Italy (chromium and pesticides) or Belgium (chlorinated pesticides).

The state of the major rivers also varies: while the Loire and the Meuse have been deteriorating continuously, the Rhine has been holding steady, and even improving slightly (see Figure 2.9). It is difficult to obtain a comprehensive picture of the situation with respect to lakes due to their number (only Denmark and Italy have started data acquisition programmes). Nevertheless, it seems from the few data available that lake quality has generally been deteriorating, notably under pressure from increasing eutrophication and accumulation of substances from industry.

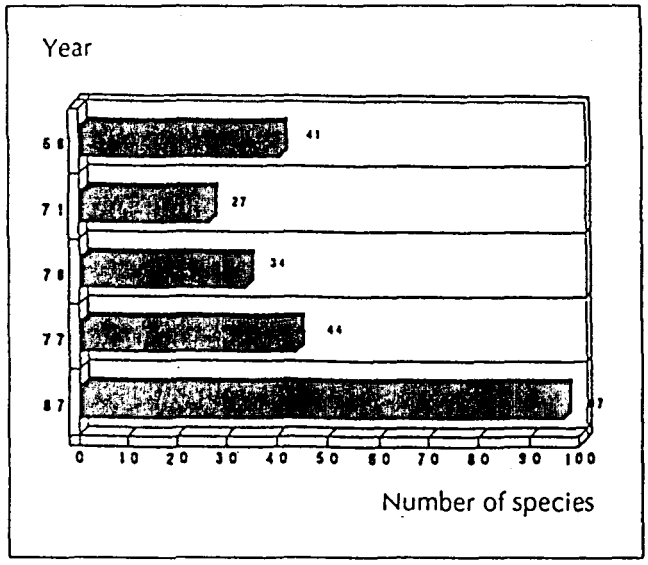


Figure 2.9 Improvement in the quality of the aquatic ecosystem in the Rhine, as indicated by the number of living species in riverbed sediment (1956-1987)

Groundwater

Not so long ago groundwater was thought to be safe from human pressure. However, it too has fallen victim to mounting pollution. Groundwater resources take far longer to replenish than surface water bodies. Once polluted they can take decades to regain their original quality - if the damage is not simply irreversible. Current knowledge of the mechanisms governing this form of pollution remains embryonic, although time seems the crucial variable since there can be a gap of several decades between the causes and the effect. Household and industrial activities and accidents are generally responsible for point pollution and pollution of rivers, while agriculture is responsible for the non-point pollution which has a greater impact on groundwater reserves. Nitrates and pesticides are the commonest pollutants involved.

The nitrates stem from nitrogenous chemical fertilizers - although consumption has levelled out in recent years (see Figure 2.10) - plus the spreading of animal manure, with pig manure a particular problem as herds grow larger and, above all, denser: the average nitrogen input from manure rose from 65 kg/ha in 1955 to 85 kg/ha in 1980 (see Figure 2.12). In addition, the proportion of farms with over 400 pigs rose from 2% (47% of the total herd) in 1981 to 5% (63% of the herd) in 1987.

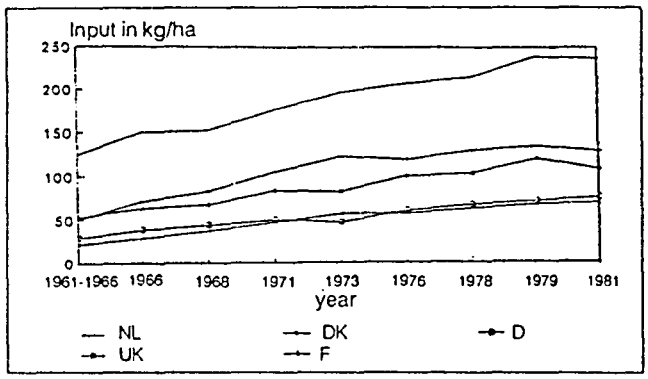


Figure 2.10: Inputs of nitrogenous fertilizers in selected EC countries (in kg/ha).

As a result, the nitrate content in groundwater has risen in virtually every Member State. In France, the nitrate content has been rising by between 1 and 4 mg/l/year and 800 000 people now drink water which exceeds the Community's limit value of 50 mg/l. In the United Kingdom, the situation in East Anglia, the Severn-Trent region and Yorkshire gives equal cause for concern. A total of 850 000 people drink water exceeding the 50 mg/l limit. In Germany, groundwater exceeded this limit at 0.3% of the sampling points in some Länder and at 8% in others. Two and a half million people are supplied with water below the Community standards. In Catalonia 20% of the pumping stations exceed the 50 mg/l limit. In the Barcelona region wells have been closed as concentrations have soared as high as 500 mg/l in some places. In Denmark, the average nitrate content in the water has trebled within the space of 30 years. Also, 200 000 people in the eastern Netherlands, where the manure surplus is a crucial problem, are supplied from private wells which could well exceed the limit. In Italy readings of 100 mg/l were recorded at some places in the Marche region. In Belgium, the area south of Brussels is the worst hit. Finally, in Luxembourg 1 800 people are exposed to levels exceeding the European standard.

Most pollution of groundwater by pesticides, like nitrates, stems from non-point agricultural sources (see Figure 2.11). At the moment each country has standards of its own on the use of plant health products. What is more, there is no full European inventory of pollution levels in groundwater. This makes it difficult to draw comparisons. Herbicides like atrazine and simazine are the substances most commonly found.

SELECTED COUNTRIES 1975-1986
(index 1975=100)

Country	Year	Herbicides	Pesticides total
DK	1975	100	100
	1980	99	104
	1986	111	153
D	1975	100	100
	1980	133	132
	1986	119	126
GR	1975	100	100
	1980	185	99
	1986	288(c)	111
F	1975	100	100
	1980	143	187
	1986	155	231
IRL	1975	100	100
	1980	127	126
	1986	-	-
I (a)	1975	100	100
	1980	155	162
	1986	200	113
NL	1975	100	100
	1980	-	-
	1986	79	118
P	1975	100	100
	1980	141	131
	1986	133(d)	92
UK (b)	1975	100	100
	1980	133	133
	1986	-	-

(a): Data refer to the formulation
(b): Great Britain only. "Late 1970s"=100, second time period relates to early 1980s.
(c) 1884
(d): 1985

Figure 2.11: Pesticide consumption

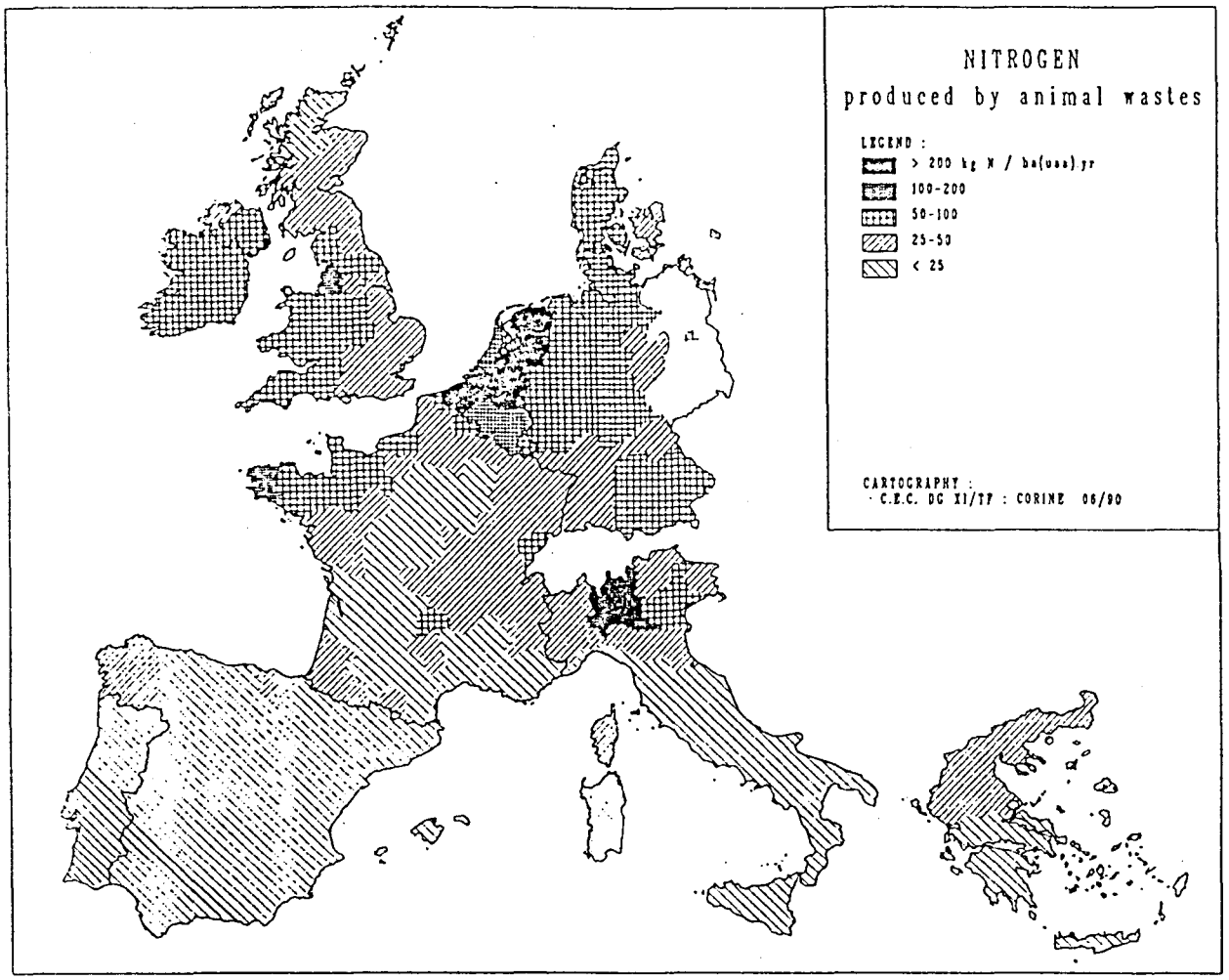


Figure 2.12 Nitrogen produced by animal wastes

However, other pollutants can also seep into groundwater. There is no shortage of examples of aquifers which have been polluted, in some places by chlorides, as in Kent or Alsace, in others by heavy metals (mercury, cadmium, etc.) or in yet others by oil. Generally, this sort of pollution can be attributed to a single clearly identifiable industrial activity.

2.2 The seas: vast expanses at risk

The Community is surrounded by seas, each with their own distinctive characteristics. Despite their size, they too are severely affected by the expansion of human activities, particularly the Mediterranean Sea and the North Sea, which are bordered by two of the most densely populated and industrialized regions in the world (see Figure 2.13). These seas, like the Baltic valued by specialists for its great biological diversity, are the sink for countless pollutants and suffer from increasing eutrophication.

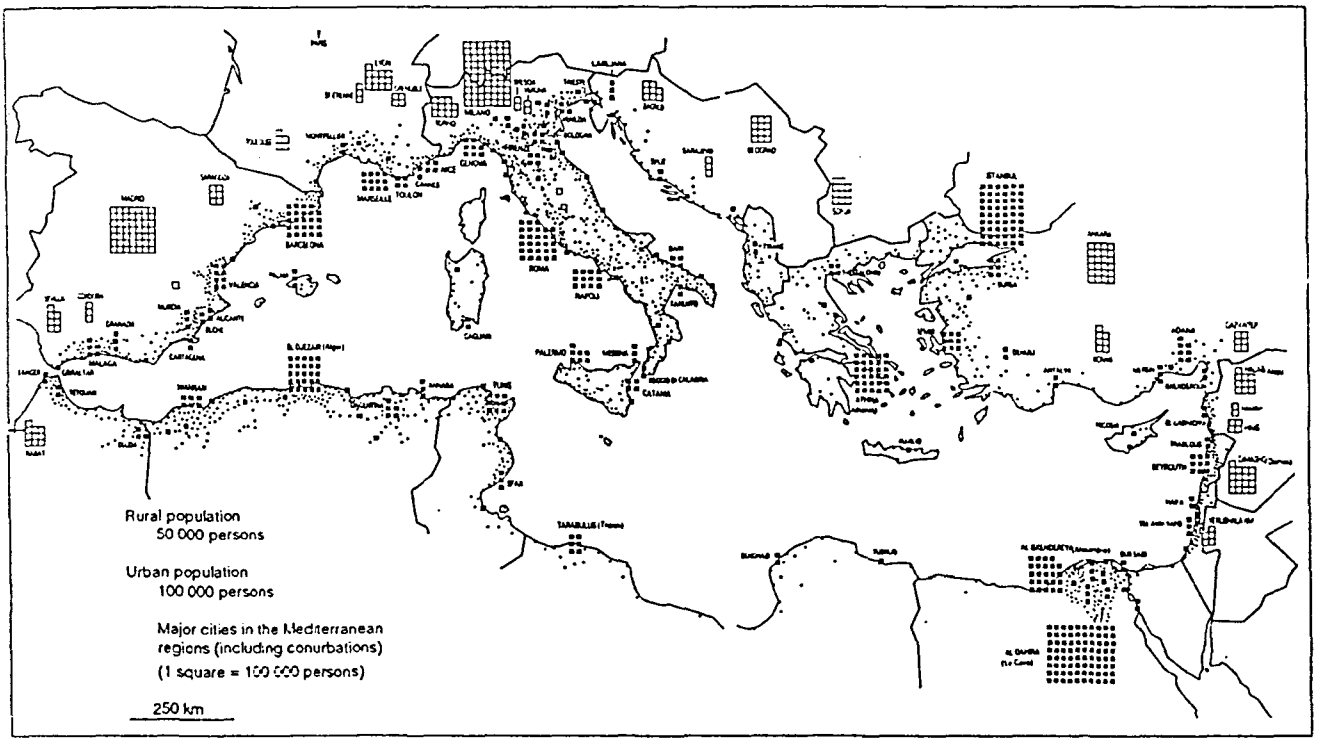


Figure 2.13 Population distribution around the Mediterranean Basin

Coastal regions are clearly under the greatest pressure from pollution and socio-economic activities, such as tourism, with 90% of the French Riviera and the land around Athens, Barcelona, Marseille and Naples now developed. But certain operations out at sea can also cause great damage, for example uncontrolled cleaning of ballast tanks, exploitation of mineral resources (oil, gas, sand and gravel) or the dumping of waste.

These many different discharges (particularly of sewage) give rise to bacteriological and chemical pollution which disrupt food chains and has two principal adverse effects on public health: deterioration in bathing water quality and contamination of seafood.

Bathing water

Bathing water quality is not only a symptom of the state of health of the marine environment but also, increasingly, a key factor in the development of the tourist industry at seaside resorts. In recent years health inspections of bathing water have been tightened up considerably, particularly since the entry into force of the 1975 Community Directive on the quality of bathing water. Nevertheless, the information available, the limit values for the individual parameters measured and the tolerance rates allowed vary from one country to another, make it difficult to compare the results.

By way of example, Figure 2.14 shows the situation in three countries for three biochemical parameters: total coliforms, faecal coliforms and faecal streptococci. On the basis of these parameters, bathing water is classified into three categories: (i) areas conforming to the guide values laid down for these parameters in the Directive (blue), (ii) areas conforming to the mandatory values only (green) and (iii) areas failing to conform to the mandatory values (red). The width of the coloured lines is proportional to the percentage of measuring stations falling into the relevant categories (a total of 1 707 measuring stations are represented here).

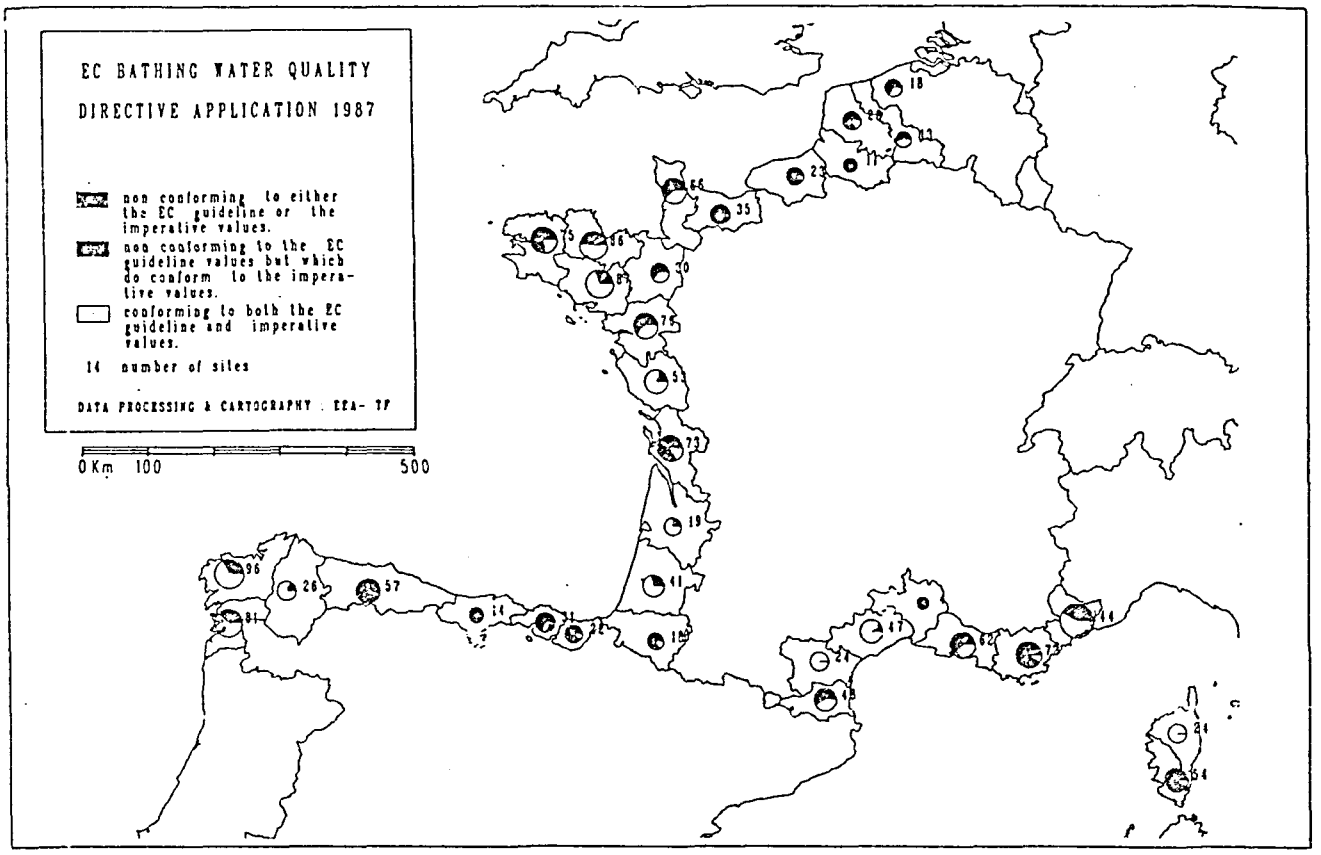


Figure 2.14 Bathing water quality

Following analysis and discussion of these results some progress has been made. Monitoring of bathing areas has been stepped up and water quality has improved (see Figure 2.15). In the years ahead less sewage should be discharged close to bathing areas and more will be treated.

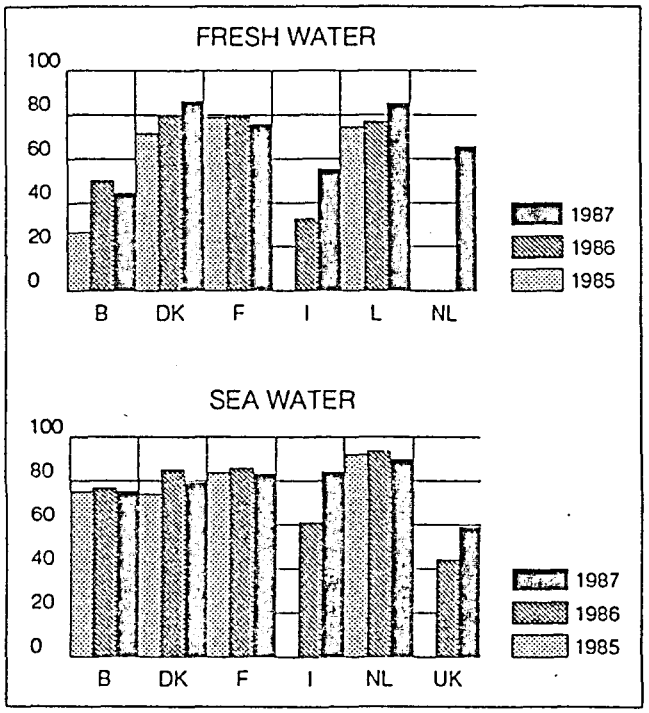


Figure 2.15 Bathing water quality trends from 1985 to 1987

Pollution

The North Sea is particularly prone to eutrophication. It is estimated that human activities (sewage and overuse of fertilizers) input four times the natural level of nitrates and seven times the natural inflow of phosphorus (see Figure 2.16). Eutrophication is worst along the Danish and Dutch coasts (see Figure 2.17). In the Mediterranean region the problems are particularly acute in estuaries and the Northern Adriatic

NUTRIENT INPUTS TO THE NORTH SEA IN TONNES PER YEAR

	Nitrogen		Phosphorus	
	River Input	Direct Discharge	River Input	Direct Discharge
Sweden	17,600	2,600	281	320
Germany	259,000	-	16,490	-
Belgium	4,700	-	1,570	-
Netherlands	599,000	15,500	52,000	1,300
Norway	-	-	-	-
Denmark	22,000	2,928	2,400	1,795
United Kingdom	110,740	73,325	3,439	21,156
	1,013,040	94,353	76,180	24,571
Sub Total	1,107,393		100,751	
Sewage Sluge Dumping	11,700		2,800	
Atmospheric Input	400,000		-	
Grand Total	1,519,093		103,551	

Source: Quality Status of the North Sea, London: DOE 1987
River Inputs and Direct Discharges from Tables 2B and 2D (Pgs 15 and 17 respectively). Other data from Table 2A (Pgs 9)

Figure 2.16 Nutrient inputs into the North Sea (in tonnes per year)

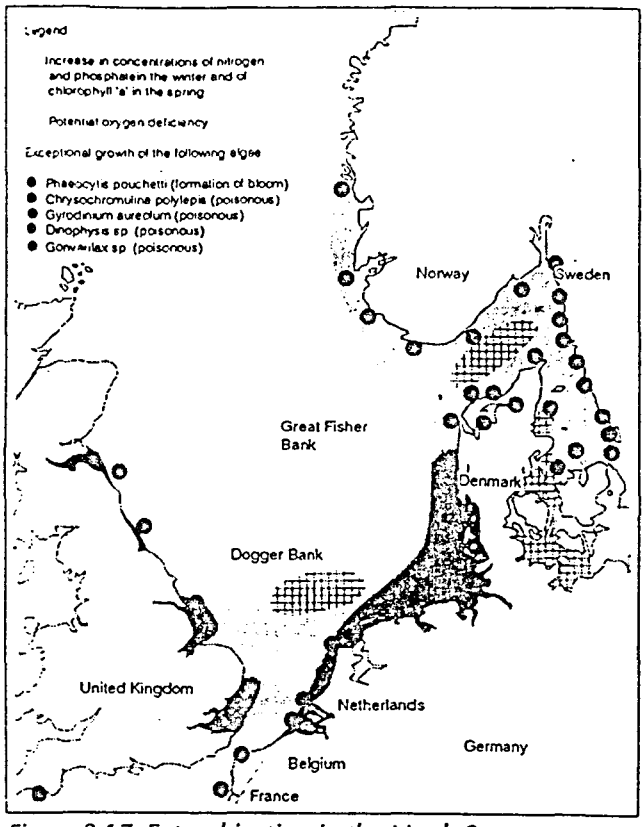


Figure 2.17 Eutrophication in the North Sea

ANNUAL OIL INPUTS TO THE NORTH SEA BASED ON THE HIGHEST VALUES FROM EACH SOURCE

Source	Tonnes	% of Total
Shipping	100,000	39
Rivers	80,000	31
Offshore Production	29,000	11
Atmosphere	20,000	8
Constal Sewage Discharge	14,000	5
Coastal Refineries	6,000	2
Oil Terminal Operations	800	<1
Other Coastal Industrial Effluents	9,000	3
Natural Seeps	800	<1
Total	250,600	100%

Source: Environment Protection of the North Sea ed. P J Newman and A R Agg. Oxford: Heinemann 1988 p 432.

Note: Maximum values are given for each source so the total represents a "worst case" estimate. See text for detailed discussion.

Figure 2.18 Annual oil inputs into the North Sea

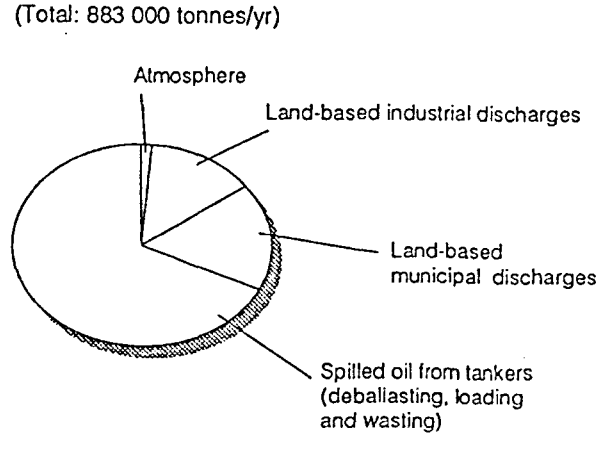
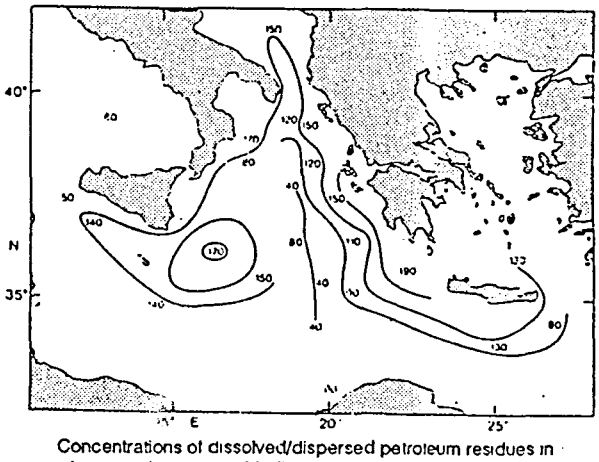


Figure 2.19 Annual oil inputs into the Mediterranean Sea



Concentrations of dissolved/dispersed petroleum residues in the central to eastern Mediterranean with tentative iso-lines connecting spots of equal concentrations

Figure 2.20 Concentrations of dissolved/dispersed petroleum residues in the central to eastern Mediterranean

Oil pollution stems from various sources: spills following accidents (oil slicks), unauthorized deballasting from tankers, offshore oilwells, onshore activities (via rivers) or from the air. Oil affects not only the water but also sediment. The highest oil concentrations in sea and sediments alike are registered in the vicinity of oil platforms and petrochemical plants. Leaving aside accidents at the moment, this form of pollution is particularly harmful to marine fauna and flora and could have contributed to the disappearance of certain species of invertebrate. In the Mediterranean Sea although inputs are three times higher than in the North Sea (see Figures 2.18 and 2.19), there has been a marked improvement in the situation out at sea, with the problems now localized along the coast (see Figure 2.20).

Heavy metal contamination of the marine environment continues to pose the difficult problem of non-point pollution. Only a few areas display high concentrations. The most susceptible points are next to industrial sites or densely populated centres, for example the estuaries of the Loire and the Gironde, the Spanish coast around Santander and, on the Atlantic coast, La Coruña, the Belgian and Dutch coasts, Liverpool Bay, the coast of North-East England or, finally, the German Bight (see Figure 2.21).

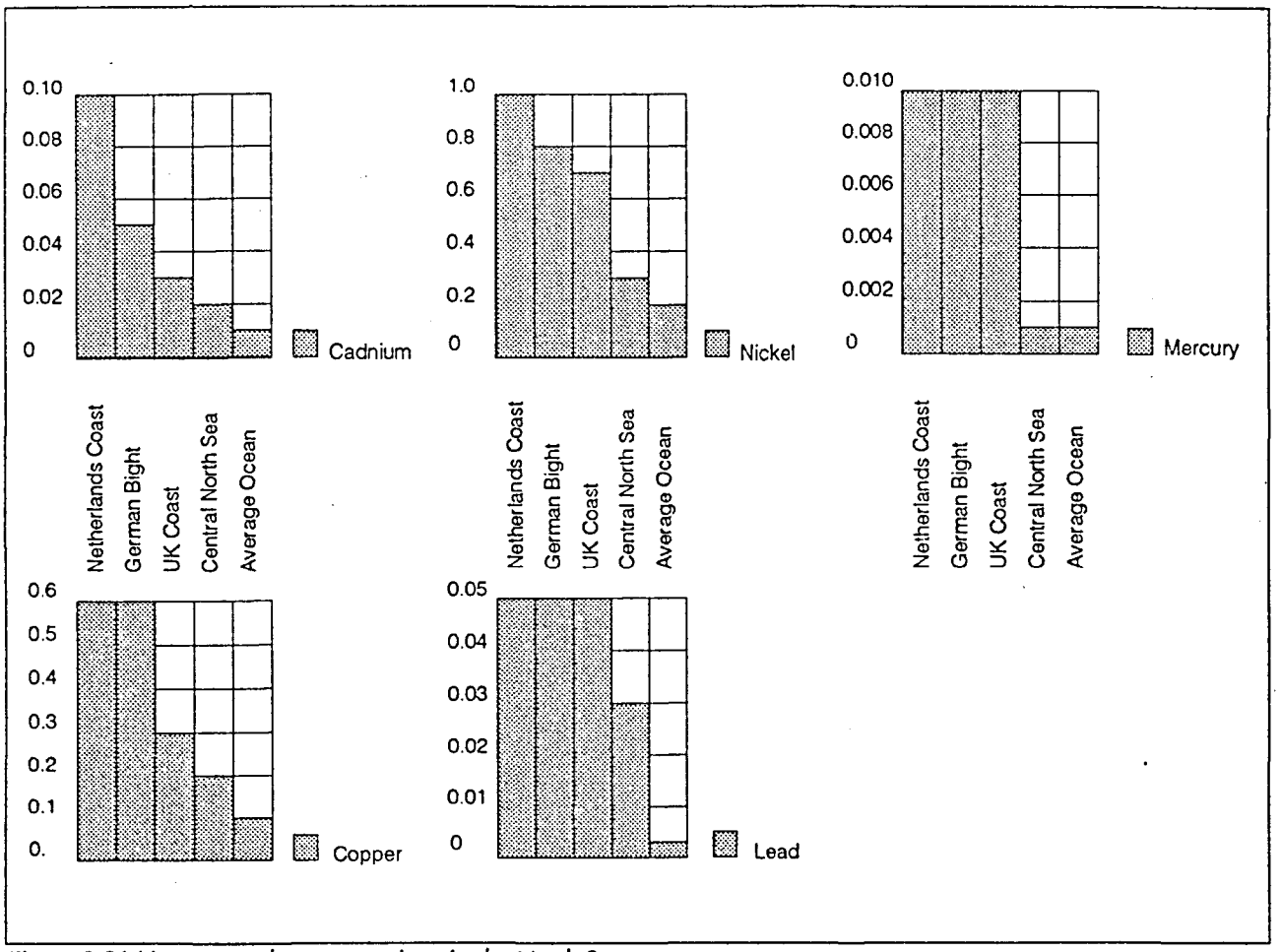


Figure 2.21 Heavy metal concentrations in the North Sea

The political authorities have been concerned for many years about marine pollution by organic compounds. Two categories of substance are particularly important: halogenated organic compounds such as DDT, lindane, dieldrin, PCBs, etc. and organometals (mercury). Estuaries, dumping at sea, accidents (shipwrecks) and fallout from the air are the main sources. Nevertheless, concentrations generally remain well below the values considered dangerous and therefore pose only a minimum health hazard to mankind. On the other hand, they have a more drastic impact on ecosystems. For example, the decline in the birthrate for seals in the Waddensee is partly attributable to pollution by PCBs.

Litter in turn, particularly plastic containers (see Figure 2.22) on the beaches and in the sea, is not only unsightly but also causes localized pollution (see Figure 2.23). Ingestion of such materials can kill animals.

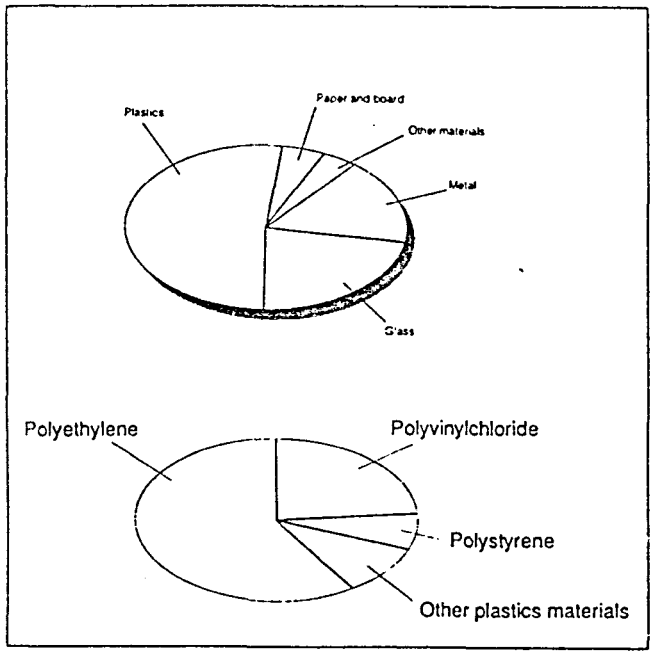


Figure 2.22 Composition of samples of waste collected on beaches

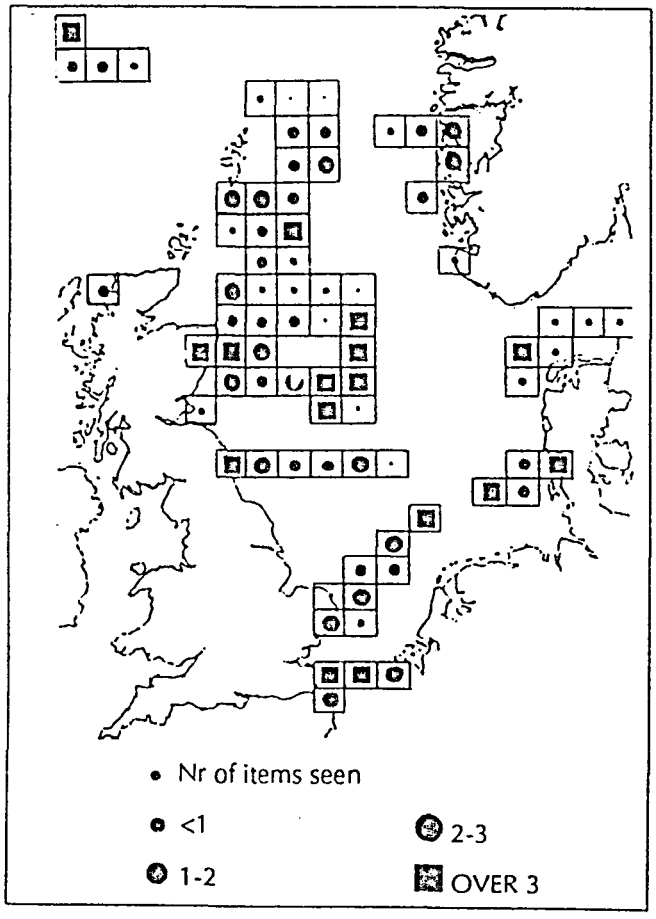


Figure 2.23 Relative density of waste of all types in the North Sea

Finally, pollution by radionuclides is closely connected with the nuclear power industry (nuclear power stations, reprocessing plants and waste disposal). In any event, this form of pollution is limited. The main source of emissions into the North Sea is the Sellafield plant. However, they have been reduced significantly in recent years.

3. SOIL: A FRAGILE ENVIRONMENT LONG NEGLECTED

Physical degradation of the soil is widespread throughout the Community. The soil was long thought to have unlimited absorption capacity, but now it is becoming increasingly difficult for it to perform its many vital functions: as a source of biomass in the form of crops and timber, as a habitat and as an ecosystem stabilizer. An increase in the pollutant content has been observed at many sites. Pollution of the soil by heavy metals or organic products is increasing not only at critical sites (around industrial centres or waste tips) but also in some rural regions as a result of the combination of air pollution and farming. To make matters worse, even the well known phenomenon of soil erosion remains serious and is advancing in the south of the Community, often eating into high quality land.

Today, farming methods using smaller amounts of fertilizer and pesticides and erosion-control techniques are available. Unfortunately, they are applied to only a small fraction of the land. As a result, the physical and chemical degradation of the soil will continue virtually unabated over the next decade. No further increase is cases of pollution from point sources is expected, but so many sites are contaminated already that the clean-up operations needed will call for a sustained effort extending well beyond the year 2000.

The soil, a complex living part of the environment, performs a series of often conflicting vital functions (production of biomass in the form of crops and timber, habitat, ecosystem stabilizer and store of genetic material). To give an idea of its extreme diversity, specialists have identified 320 types of soil in the Community (see Figure 3.1). Soil remains one of the least well known sectors of the environment particularly concerning its role in the functioning of the ecosystem, the dynamic relationships between the individual components thereof and pollutant behaviour.

Above all, the soil is exposed to countless threats, long underestimated but which can now no longer be ignored. These include not only the use of high quality land for urban development and transport infrastructure but also the physical and chemical degradation of soil under the combined impact of factors of various origins (air, agriculture, urban development, industry).

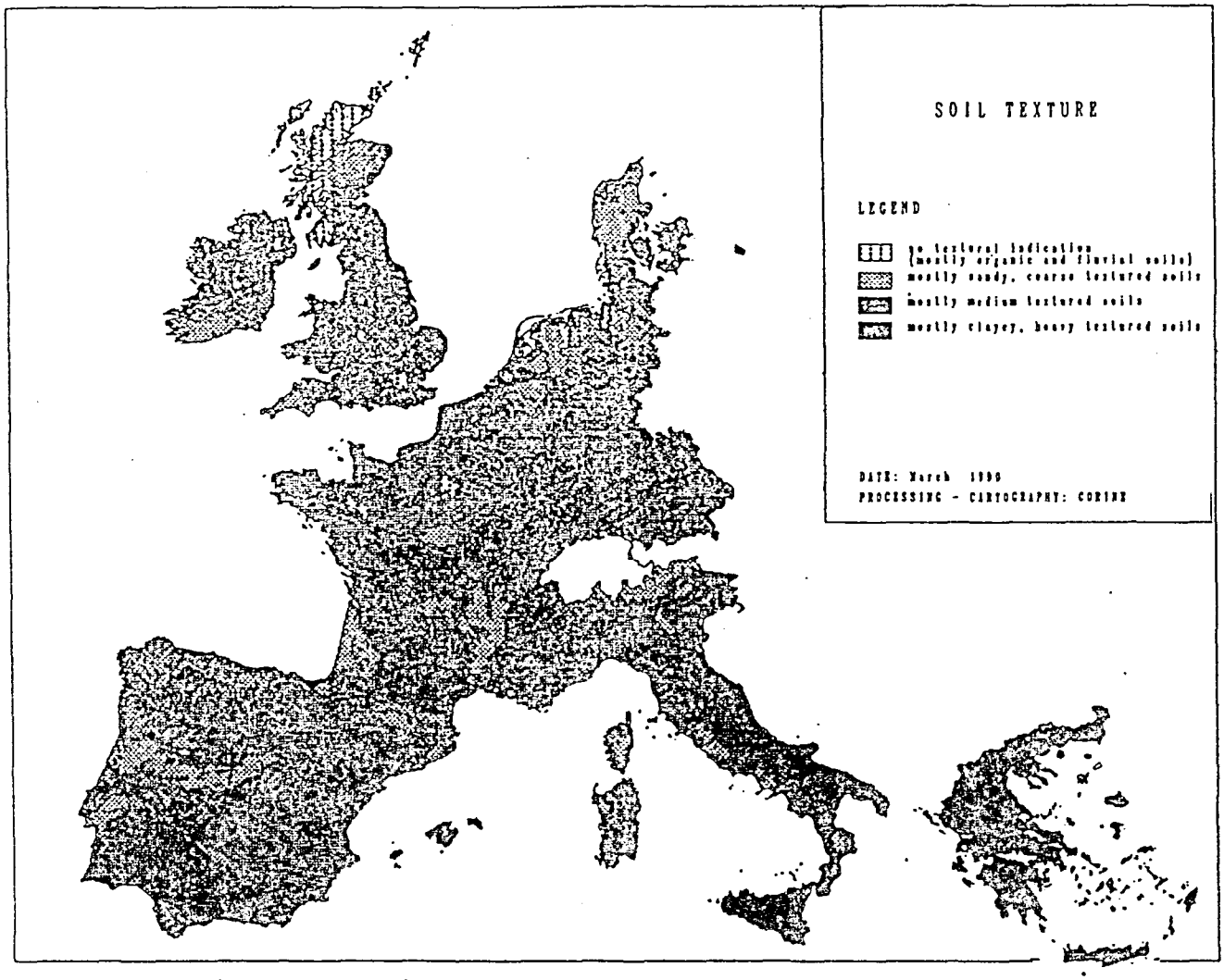


Figure 3.1 Main soil texture types in the Community

3.1 Conflicting uses

Since Neolithic times, the soil has performed a vital function for mankind: viz, the production of biomass in the form of agricultural crops. However, the suitability of land for farming varies considerably, as can be seen from Figure 3.2. Sharp conflicts over the use to be made of the land arise in regions where these resources are in particularly short supply, in other words in southern Europe (see Figure 3.3). River valleys (such as the Po, Tagus, Rhone, Garonne and Douro), coastal plains, mountain valleys and densely populated areas are the most critical areas.

	High quality		Medium quality		Low quality		Excluded area (2)	
	km2	%	km2	%	km2	%	km2	%
Southern France	10456	6	51546	29	85690	45	42469	22
Italy	93351	31	78672	26	117772	39	11483	4
Greece	24919	19	23394	18	75775	57	7903	6
Spain (1)	35286	7	149026	30	292586	59	20619	4
Portugal (1)	7214	8	22236	25	58475	66	1003	1
	171226	14	324874	27	630298	52	83477	7

(1) without the Islands
(2) Includes urban land, lakes, bare rock and area of missing data.

Figure 3.2 Soil quality in the southern regions of the Community

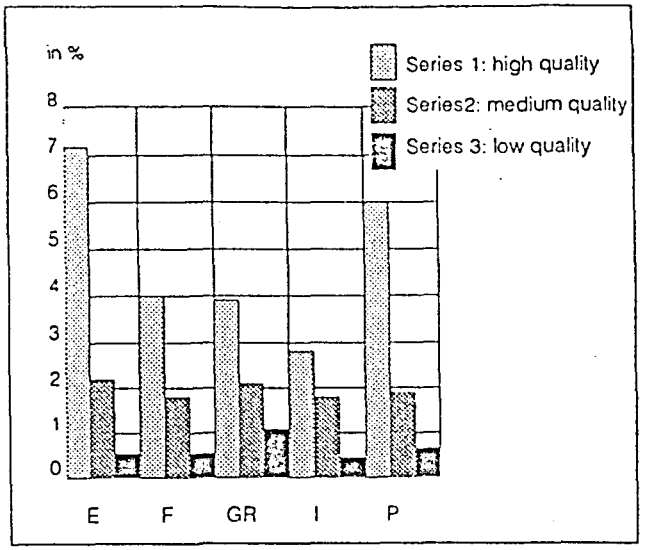


Figure 3.3 Proportion of urbanized land in the south of the Community

3.2 Erosion

Soil erosion is an ancient phenomenon which continues today mainly as a result of modern farming methods. Wind or water erodes 35% of the world's arable land. The Community does not escape unscathed. The symptoms have been familiar since ancient times: erosion impairs soil quality, carries away organic matter, weakens soil structure and reduces its water retention capacity which, in turn, diminishes crop yields. In addition to these direct effects, erosion leads to silting of dams and drainage channels, disrupts water flow and increases flood risk. Because of their climate the Mediterranean regions are particularly vulnerable. Nevertheless the northern regions of the Community with their intensive farming are equally at risk. Wind erosion is confined mainly to arid or coastal regions, extensive cereal plains and fields from which the hedgerows and trees have been cleared (see Figure 3.4). Water erosion is worst in the south of the Community, where 34% of soil is classified as being subject to a high risk of erosion (see Figures 3.5 and 3.6).

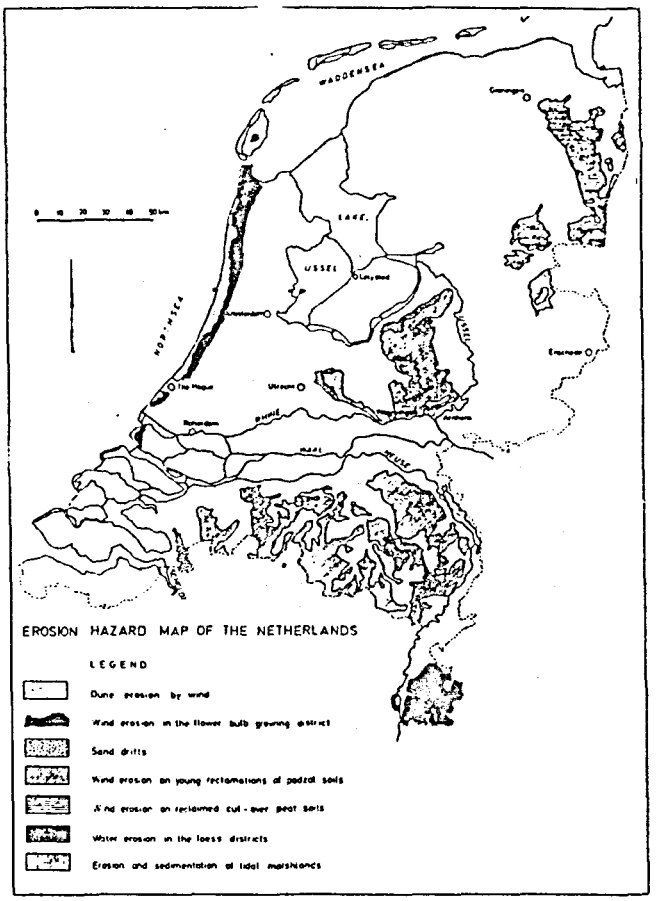


Figure 3.4 Erosion hazard map of the Netherlands

Area at risk of erosion P: Potential A: Current		High km2	High %	Medium km2	Medium %	Low km2	Low %	Area not analysed km2	Area not analysed %	Total km2
South of France	P	93443	49	37900	20	16355	9	42462	22	190160
	A	123642	65	22362	12	1693	1	42463	22	
Italy	P	122415	41	85210	28	82347	27	11303	4	301275
	A	165823	55	93982	31	30168	10	11303	4	
Greece	P	27027	20	27435	21	57413	43	20113	15	131988
	A	39286	30	47877	36	24712	19	20113	15	
Spain	P	69661	14	205157	41	202100	41	20597	4	497515
	A	115518	23	219907	44	145493	29	20597	4	
Portugal	P	4918	6	21889	24	61119	69	999	1	88925
	A	12884	14	48165	55	26877	30	999	1	
Total for the south of the Community		317464	26	377591	31	419334	35	95474	8	1209863
		456973	38	432293	36	228943	18	95474	8	

Figure 3.5 Potential and actual erosion risks in the south of the Community

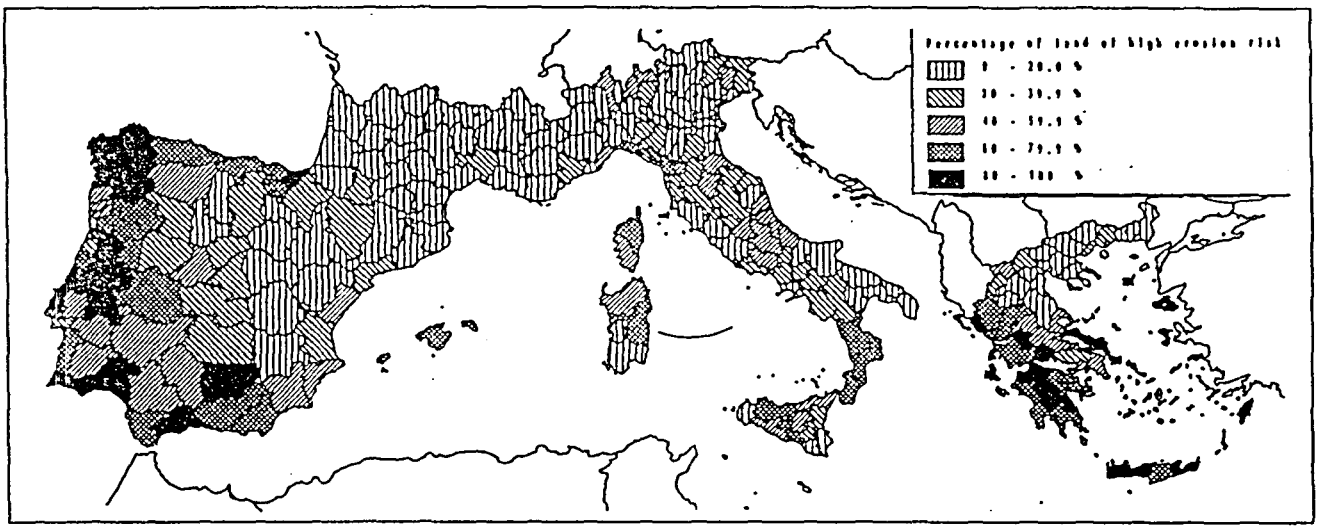


Figure 3.6 *High erosion risk areas requiring conservation measures or schemes to restore plant cover*

In parts of the Community (for example, South-eastern Spain) desertification has been observed resulting from the combined impact of the climate and the poor land management. Soil erosion there advances considerably faster making it all the more difficult to combat desertification.

3.3 Accumulation of pollutants in soil

Contamination of soil by pollutants came to the public's attention far more recently than erosion. Today there are three main categories of pollution: acid depositions, heavy metals and organic compounds.

Pollutants have very diverse origins: the air, pesticides or industry (combustion of fossil fuels, etc.). Depending on the soil type, all these substances, by changing the physical, chemical or biological properties of the soil, affects, to one degree or another, the fertility and effectiveness of the soil in the regulation of ecological cycles, and by contaminating crops and water pose a public health hazard. The knowledge available about the state of Europe's soils (particularly about the scale of the existing problems) and of the mechanisms controlling the fate of pollutants in this sector of the environment remains extremely fragmentary (see Figure 3.7). For many years the risks inherent in soil pollution were underestimated as the soil's buffer capacity delayed the effects.

Estimate		Source of pollution
km2	%	
1000	10	Urban compost
500	5	Sewage sludge
2500	25	Pig manure
2000	20	Major roads
4000	40	Industrial centres
10000	100	Total

Note: Allowing for estimation errors and possible future developments, after 50 years approximately 10 000 km2, equivalent to 2% of France's national territory or 3% of the country's utilized agricultural area, will be classified as badly hit by trace element pollution, the precise breakdown being as follows:

Figure 3.7 Estimated areas badly hit by soil pollution in France

a. Soil acidification

Air pollution, particularly by oxides of sulphur and nitrogen, forms "acid depositions" which damage soil, vegetation and water. With the possible exception of the west of the Iberian Peninsula, the soil in Northern Europe has proved the most vulnerable, because of its low buffer capacity (see Figure 3.8).

The first signs of forests dying were observed in Germany in the 1970s. Today the phenomenon has spread to many Community countries, to central and eastern Europe and even across the Atlantic. The visible symptoms of die-back (loss of leaves or needles, discoloration of foliage, marked deficiencies and death) have led to polemics about the causes to blame.

Now a degree of consensus seems to have emerged about the complexity of the process and the recognition that several causes are strongly suspected: air pollution, acid depositions, eco-climatic conditions and, the influence of biotic factors.

To assess the scale of the phenomenon, the Community has set up an observation network which now extends to the countries of central and eastern Europe too. Every year the state of over 45 000 trees at 1 900 sites are monitored in order to obtain time series long enough to give a clear picture of the influence of the individual factors responsible for killing the forests and how to combat them.

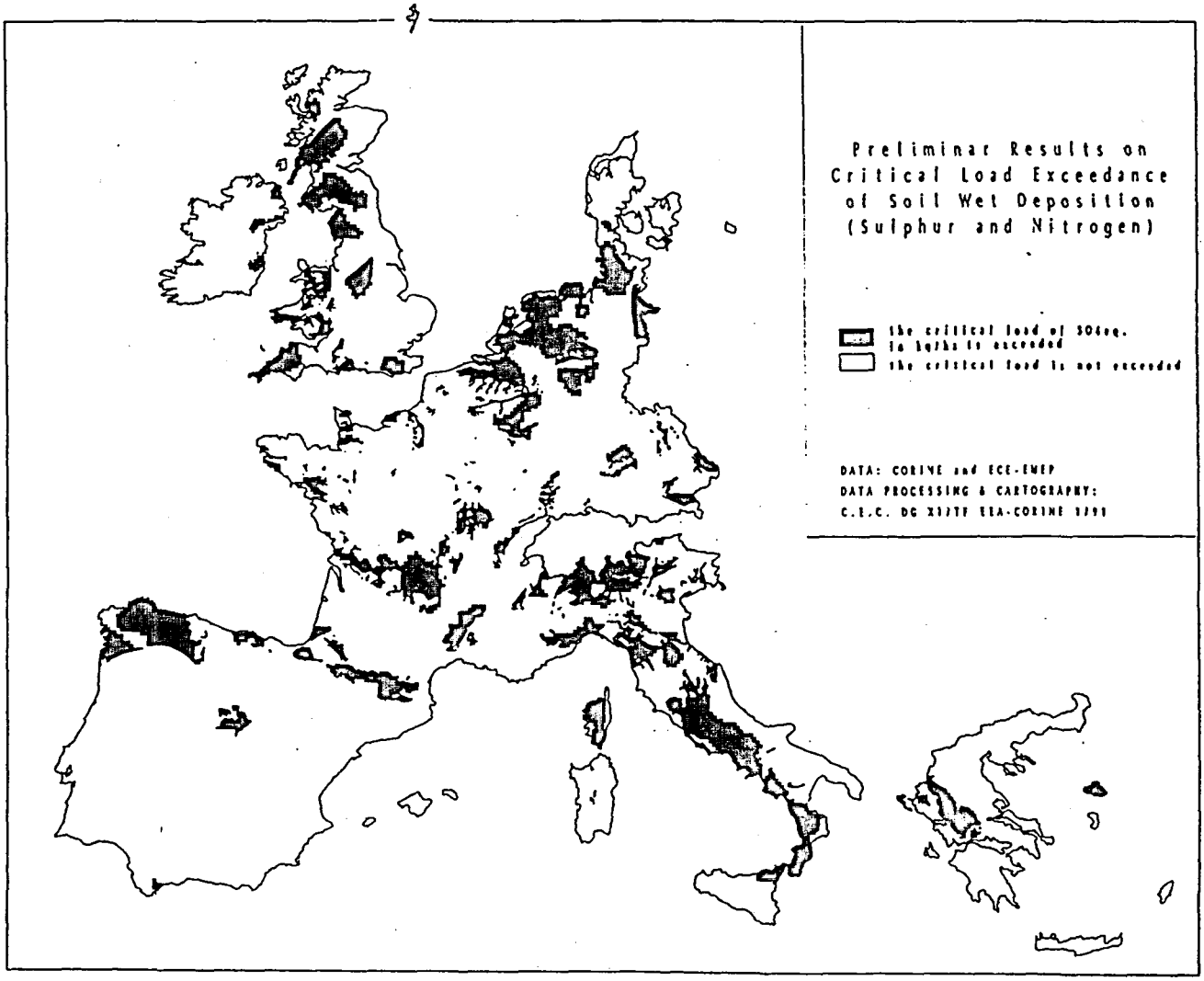


Figure 3.8 Critical loads for acid depositions in soil (preliminary results)

b. Heavy metals

Human activities are usually to blame for pollution of soil by heavy metals such as lead, cadmium, zinc or copper from a wide range of sources: fallout from the air, waste tips, fertilizers, manure which usually has a high copper content, and phytosanitary products.

For example, it is estimated that between 60% and 70% of the cadmium input into the soil in France and Denmark comes from phosphate fertilizers. Industrial and urban activities or transport can also lead to high local concentrations. Consequently, heavy metal soil contents can soar to 20-30 times the normal value in the vicinity of industrial installations or mines. Alongside major roads or in urban areas the heavy metal content in the soil is far higher. Thus, for example, more than 40% of the soil in Central London and 22% in Greater London is completely unfit for vegetable growing.

Sewage sludge spreading is to blame for some soil pollution (see Figure 3.9). For this reason, Community rules have been adopted on the subject.

Country	Flinal disposal %
Denmark	48
Germany (former Federal Republic)	39
France	33
Belgium	15
The Netherlands	34
United Kingdom	40
Ireland	4
Italy	20
Switzerland	61
Sweden	41
Norway	18
Finland	21

Figure 3.9 Percentage of sewage sludge spread for agricultural purposes.

c. Synthetic organic pollutants

Whereas at most a dozen heavy metals are to blame for pollution, there are some 20 000 potentially noxious organic substances. Although degradable sooner or later, many of them pose a toxicity hazard, depending on the active ingredients. The sources of this type of pollution are largely the same as for heavy metals (i.e. pesticides, the air and waste) but fewer data are available on this indicator of the state of the soil. Moreover, little is known about the effects of these substances or of others formed from them. Nevertheless some, such as atrazine or lindane, have been studied more closely. The situation is all the more worrying bearing in mind that hundreds of new substances are placed on the market each year. Although their effect on health is tested as part of the pre-marketing type-approval procedure, methods of assessing their impact on ecosystems have yet to be perfected. However, a number of persistent substances accumulate along the food chain. As a result, even low doses of these toxic substances can trigger a deterioration in biological life in the soil (which in turn results in lower fertility and impairment of the biogeochemical cycles) and have an impact on the health of anyone who eats the contaminated crops or livestock (see Figure 3.10).

Insecticides		Herbicides	
DDT	4-30 years	PICLORAM	1-2 years
DIELDRIN	5-25 years	LINURON	8-14 months
LINDANE	3-10 years	ATRAZINE	10-12 months
HEPTACHLOR	3-5 years	SIMAZIN	10-12 months
ALDRIN	2-3 years	FENURON, DIURON	8-10 months
ENDOSULFAN	2 m.-2 years	MONOLINURON	3-10 months
CARBARYL, CARBOFURAN	4-6 months	DICHLOBENIL	6 months
PARATHION, AZINPHOS	3-6 months	2,4,5 T	3-5 months
TOXAPHEN	2 months	DICAMBA, MCPA	2-3 months
MALATHION	1-2 months	DALAPON, PROPHAM, EPTC	1-2 months
		2,4 D	4-6 months
Fungicides			
CAPTAN	3-6 weeks		Source: AVES

Figure 3.10 Persistence of selected pesticides in the soil (time needed for 70-95% to disappear).

4. WASTE

The volume of waste generated is increasing far faster than treatment and disposal capacity. A major effort to set up and develop household refuse collection networks has, it is true, ensured that virtually all the urban waste in the Community is collected. Nevertheless, landfill remains the commonest disposal method. Processes such as composting or recycling are gaining ground but remain too limited to alleviate the growing landfill problem. The consequences in terms of contamination of soil and groundwater are known to a certain extent today, at least at known and monitored sites. The dangers for man and the environment are increasing.

A sharp increase in industrial waste can be expected in the developing regions where production is expanding. In most of these regions, an extensive programme to provide waste treatment facilities is needed to tackle this problem.

A substantial effort will be needed for several decades to come to identify and restore contaminated sites.

Waste is inseparable from production and consumption. Hitherto the weight and volume generated has risen relentessly. At the same time waste has become more toxic or hazardous.

The statistics and estimates available for the Community as a whole draw a distinction between four main categories of waste (municipal, industrial, hazardous and agricultural). However, more precise data are needed in order to assess the environmental pressures and risks. Some such data are already available at national or regional level (see Figure 4.1). But in order to ensure effective implementation of the Community's policy on waste, it is essential to bring these data together and make them more consistent.
The quantity of waste generated by households and similar activities (small shops, etc.), expressed per habitant, is more or less the same in every Community country. In most industrialized and developed countries the quantity of waste generated more or less levelled out long ago, but elsewhere has continued to grow in recent years (see Figure 4.2).

Main categories of waste / of these	Total volumes of waste in millions of tonnes	of these								Disposed of in own				Delivered to plants for further processing or commercial interests which deal in used materials	
		Collected by public waste disposal services		Delivered to external treatment or disposal services											
				Public household waste disposal plants		Landfills for building rubble and excavated earth		Other plants, e.g. hazardous waste and sewage treatment plants		Landfill		Incineration plant			
	1984	1984		1984		1984		1984		1984		1984		1984	
		in Mio.t	in %	in Mio.t	in %	in Mio.t	in %	in Mio.t	in %	in Mio.t	in %	in Mio.t	in %	in Mio.t	in %
Building rubble, excavated earth	124,88	0,02	0,02	2,39	1,91	101,45	81,24	0,20	0,16	16,87	13,5	-	-	3,94	3,16
Moulding sand, core sand, particulates, other solid mineral wastes	7,12	0,03	0,42	1,00	14,04	0,95	13,34	0,81	11,38	3,41	47,89	0,01	0,14	0,92	12,92
Ashes, slags, soot from incineration	11,90	0,02	0,17	0,72	6,05	2,03	17,06	3,43	28,82	0,86	7,39	-	-	4,81	40,42
Metallic slags and sweepings	3,49	-	-	0,11	3,15	0,37	10,6	0,20	5,73	1,37	39,26	0,09	2,58	1,34	38,4
Oxides, hydroxides, salts, radioactive waste, other solid production-specific wastes	0,33	-	-	0,014	4,24	-	-	0,20	60,61	0,053	16,06	-	-	0,062	18,79
Acids, alkalis, sludges, laboratory wastes, chemical residues, detergentsen, other liquid production-specific wastes	6,80	0,003	0,04	0,36	5,29	0,05	0,74	3,77	55,44	0,51	7,50	1,64	24,12	0,47	6,91
Solvents, paints, adhesives	0,57	-	-	0,015	2,63	-	-	0,26	46,12	0,05	8,77	0,16	28,07	0,06	10,53
Mineral oil wastes, oil sludges, phenols	1,68	-	-	0,03	1,79	0,05	2,98	0,85	50,6	0,16	9,52	0,17	10,12	0,42	25,0
Plastics, rubber and tarmac wastes	1,08	0,07	6,48	0,44	40,74	0,01	0,93	0,08	7,41	0,08	7,41	0,07	6,48	0,33	30,56
Sludge from water treatment	1,04	0,005	0,48	0,09	8,65	0,05	4,81	0,31	29,81	0,55	52,88	0,007	0,67	0,03	2,88
Other sludges (including sewage treatment)	12,19	0,006	0,05	0,67	5,50	0,83	6,81	1,26	10,50	5,67	46,51	0,45	3,69	3,29	27,00
Commercial waste which is similar to household waste (kitchen and canteen waste, waste from large scale accommodation, sweepings, garden waste)	8,85	1,86	21,23	3,93	57,37	0,08	1,17	0,08	0,86	0,20	2,92	0,14	2,04	0,78	11,53
Paper and cardboard waste	1,16	0,02	1,72	0,17	14,66	0,005	0,43	0,01	0,86	0,01	0,86	0,02	1,72	0,92	79,31
Other organic waste	11,14	0,04	0,36	0,50	4,49	0,24	2,15	0,27	2,42	0,08	0,72	1,49	13,38	8,52	76,48
Rubble from foundries and metal works	1,40	-	-	0,09	6,43	0,17	12,14	0,05	3,57	0,85	46,43		-	0,43	30,71
Metal wastes	5,78	-	-	0,02	0,35	0,002	0,03	0,01	0,17	0,02	0,35	-	-	5,73	99,13
Hospital wastes	0,1	0,02	20,0	0,03	30,0	-	-	0,02	20,0	-	-	0,03	30,0	-	-

[1] Including residues from waste treatment (neutralisation, detoxification, emulsion separation, sludge dehydration, other forms of pre-treatment of waste)
[2] Including other company-owned installations (dumping and incineration ships)
[3] Waste incineration plants and incineration plants in which waste is regularly burned.

Figure 4.1 Industrial waste generation and disposal in Germany by category and branch of the economy (in '000 tonnes).

	Amounts/Quantités (a) (1000 tonnes)				% increase/ % d'augmentation			Amounts per capita/ Quantités par personne (b) (kg/cap.)				% increase/ % d'augmentation		
	1975	1980	1985	1989	75-80	80-85	85-89	1975	1980	1985	1989	75-80	80-85	85-89
Canada	..	12600	16000	16400	..	27.0	2.5	..	524	635	625	..	21.2	-1.7
USA/Etats-Unis	140000	160000	178000	208760	14.3	11.3	17.3	648	703	744	864	8.4	5.9	16.2
Japan/Japon	38074	41511	41530	48283	9.0	-	16.3	341	355	344	394	4.1	-3.2	14.5
Austria/Autriche	1407	1673	1727	2700	18.9	3.2	..	186	222	228	355	19.4	3.1	..
Belgium/Belgique	2900	3082	..	3470	6.3	..	..	296	313	..	349	5.7	..	..
Denmark/Danemark	..	2046	2400	..	..	17.3	..	..	399	469	..	..	17.5	..
Finland/Finlande	..	..	2200	2500	..	..	13.6	..	..	449	504	..	..	12.2
France	12000	14000	15000	17000	16.7	7.1	13.3	228	260	272	303	14.1	4.6	11.3
w.Germany/Allemagne occ.	20423	21417	19387	19483	4.9	-9.5	0.5	335	348	318	318	3.9	-8.6	0.2
Greece/Grèce	..	2500	3023	3147	..	20.9	4.1	..	259	304	314	..	17.4	3.1
Ireland/Irlande	555	640	1100	..	15.3	71.9	..	175	188	311	..	7.7	65.1	..
Italy/Italie	14095	14041	15000	17300	-0.4	6.8	15.3	257	252	263	301	-2.0	4.1	14.5
Luxembourg	119	128	131	170	7.6	2.3	29.8	330	351	357	466	6.4	1.8	30.6
Netherlands/Pays-Bas	..	6925	6175	6900	..	-10.8	11.7	..	489	426	465	..	-12.9	9.0
Norway/Norvège	1700	1700	1970	2000	-	15.9	1.5	424	416	474	473	-1.9	14.0	-0.3
Portugal	..	1985	2350	..	..	18.4	..	..	213	231	..	..	8.4	..
Spain/Espagne	8028	10100	10600	12546	25.8	5.0	18.4	226	270	275	322	19.5	1.9	16.9
Sweden/Suède	2400	2510	2650	..	4.6	5.6	..	293	302	317	..	3.1	5.1	..
Switzerland/Suisse	1900	2240	2500	2850	17.9	11.6	14.0	297	351	383	424	18.2	9.1	10.8
Turkey/Turquie	..	..	..	19500	..	..	..	..	..	..	353	..	..	..
UK/Royaume-Uni	16000	15500	17000	18000	-3.1	9.7	5.9	323	312	341	357	-3.4	9.0	4.9
N.America/Amérique du Nord	151000	173000	194000	225000	14.6	12.1	16.0	633	687	734	840	8.6	6.8	14.5
OECD/OCDE Europe	104000	111000	120000	136000	6.7	8.1	13.3	277	288	302	336	3.9	5.0	11.2
EEC/CEE	86000	92000	96000	104000	7.0	4.3	8.3	283	297	305	327	5.0	2.6	7.2
OECD/OCDE	302000	338000	370000	423000	11.9	9.5	14.3	407	438	462	518	7.6	5.5	12.3

Figure 4.2 Municipal waste generation trends

Everywhere in the Community, except in Greece, Ireland and Portugal, the entire population is served by a household refuse collection system. Landfill is by far the commonest form of disposal, except in Luxembourg (see Figure 4.3)

	B	DK	D	G	E	F	IRL	I	L	NL	P	UK	Total
Year	1980	1985	1984	1980	1988	1985	1984	1985	1985	1987	1985	1988	
Composting	11	5	2	—	16	8	—	6	—	4	16	—	5
Incineration Total	23	32	28	—	6	36	—	19	95	36	—	6	19
Incineration with energy recovery	7	—	—	—	3	23	—	4	95	26	—	—	6
Landfill	50	63	69	100	78	47	100	35	5	57	23	92	67
Other	16	—	1	—	—	9	—	34	—	4	58	2	9

Figure 4.3 Methods of disposal of municipal waste

To a certain degree, industrial wastes reflect the level of industrial activity. At the same time, of course, they also depend on the environmental efficiency and nature of that activity. For example, the weight of waste generated serves as an indicator of the countries in which the mining and quarrying industries play a prominent role (see Figure 4.4).

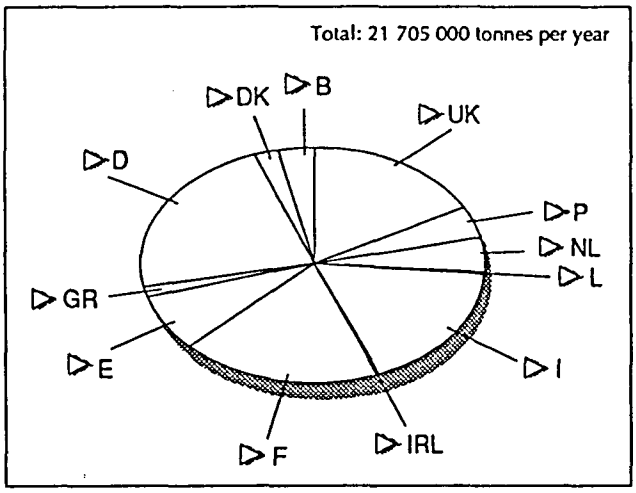


Figure 4.4 Industrial waste generation

Every year the Community generates 22 million tonnes of toxic and hazardous waste. In terms of weight, this is equivalent to just 1% of all industrial waste but from the point of view of costs it accounts for 20% of the potential market of the waste treatment industry (see Figure 4.5).

	TOTAL (1000 T) (end of 1980)	T/GNP US$
B	26.800	104
DK	2.400	41
F	61.420	95
D	4.300	123
GR	5.110	27
IRL	50.000	89
I	1.580	87
L	43.700	94
NL	1.300	
P	6.690	50
SP	6.620	292
UK	50.000	97

Figure 4.5 Toxic waste generation (estimates based on GNP)

The capacity available for treating hazardous wastes is clearly inadequate (see Figure 4.6) and not always close to where the waste is produced. Considerable amounts of waste therefore have to be moved (see Figure 4.7).

	B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	Suisse (PM)	CEE (12)
Toxic and hazardous wastas (million t/year)	0,7	0,5	4,9	0,3	1,7	4	0,08	3,8	0,08	1	1	3.7	(0,4)	21,8
GDP (thousand million ECU)	70	52	512	32	145	397	14	283	4	112	18	382		2021
% landfilled			48			10	60			30	78	80	15	
% incinerated		28	8			25	14			25	1	1.9	10	
% treated physico-chemically			8			10	7			15		7.6		
Number of landfills			22		1	11			1		1	1145		
Treatment capacity ('000 t/year)			2200			600						2950	30	
Number of incinerators	1	3	17		1	11		5				5		
Treatment capacity ('000) t/year)	40	140	700		60	700		100		100		80	40	
Number of physico-chemical units	5		23			8			1			11		
Treatment capacity ('000 t/year)	100		800			400						300		
Landfills ('000 t/year)														
Estimated requirements (50%)	350	250	2500	150	800	2000	40	1900	40	500	500	1900	200	11130
Current capacity			2200		60	600						2950	30	
Projected total capacity (including existing capacity)			2400		480			300						
Incineration ('000 t/year)														
Estimated requirements (20%)	175	125	1200	75	400	1000	20	900	20	250	250	900	100	5465
Current capacity	40	140	700		60	700	10	100		100		80	40	
Projected total capacity (including existing capacity)	80	180	1400		127	800	20	300		150		230	100	

Figure 4.6 Number and capacity of treatment units for hazardous waste

GENERATION IMPORTS AND EXPORTS OF SPECIAL AND HAZARDOUS WASTES
(000 te/year: 1985 unless otherwise stated)

	Waste generated	Imports	Exports
B	915 (1980)	914	13.2 (1980)
DK	125	n/a	30.0 (1983)
D	5,000	75.0	1,695.6
GR	n/a	814.3	n/a
E(1987)	1,708	n/a	2.6
F	2,000 (1984)	95.9 (1984)	25.0
IRL (1984)	20	n/a	20.0
I(1980)	2,000	n/a	22.5
L	4	n/a	4.0 (1983)
NL	1,500 (1986)	320.0 (1983)	250.0 (1983)
P	1,049 (1986)	n/a	n/a
UK (1986)	3,900	82.5	n/a

a Includes 830,000 te imported from Germany for sea disposal
b Hazardous wastes only figures do not include special wastes
c England and Wales only

Source World Resources Institute World Resources 1990-91

Figure 4.7 Movements of special and hazardous wastes

Awareness of the environmental and health hazards posed by the dumping of waste in general, and of toxic wastes in particular date back no more than 30 years at best when the first policies were formulated. However, toxic wastes have been dumped in the environment since the 19th century. The result is that there are now tens of thousands of contaminated sites in the Community. The inventory of such sites is still far from complete. Figure 4.8 sets out an overview of the estimated situation today.

	B	DK	D	G	E	F	IRL	I	L	NL	P	UK
Estimated potential of sites		3.115	35.000		94	800		5.433		6.060	>1.800	300
Remedial actions required	74	501	5.400			82				1.460	69	
Investigation and monitoring required	11	2.610	22.600	>100		371		800	75	1.900		
No actions required			22.000						54	1.300		
Reorganised closed sites	248					107			12			

Figure 4.8 Contaminated sites in the Community

5. QUALITY OF LIFE IN EUROPE

Urban population growth will continue at a rapid rate in the cities of southern Europe, particularly along the coast, putting further pressure on the population's quality of life. Without rigorous measures to protect the rural environment in places where desertification is becoming acute, the countryside will continue to deteriorate in the least-developed regions where farming methods are still changing. In intensive farming areas the traditional landscapes have already disappeared and schemes to restore them are needed.

5.1 Urban development

In the space of a few decades, far-reaching changes have transformed the quality of life in Europe. In this time half the population has switched from country to urban life. This process started earlier in the northern regions and is still in progress in the Mediterranean regions, where the major conurbations are continuing to grow extremely rapidly (see Figures 5.1 and 5.2).

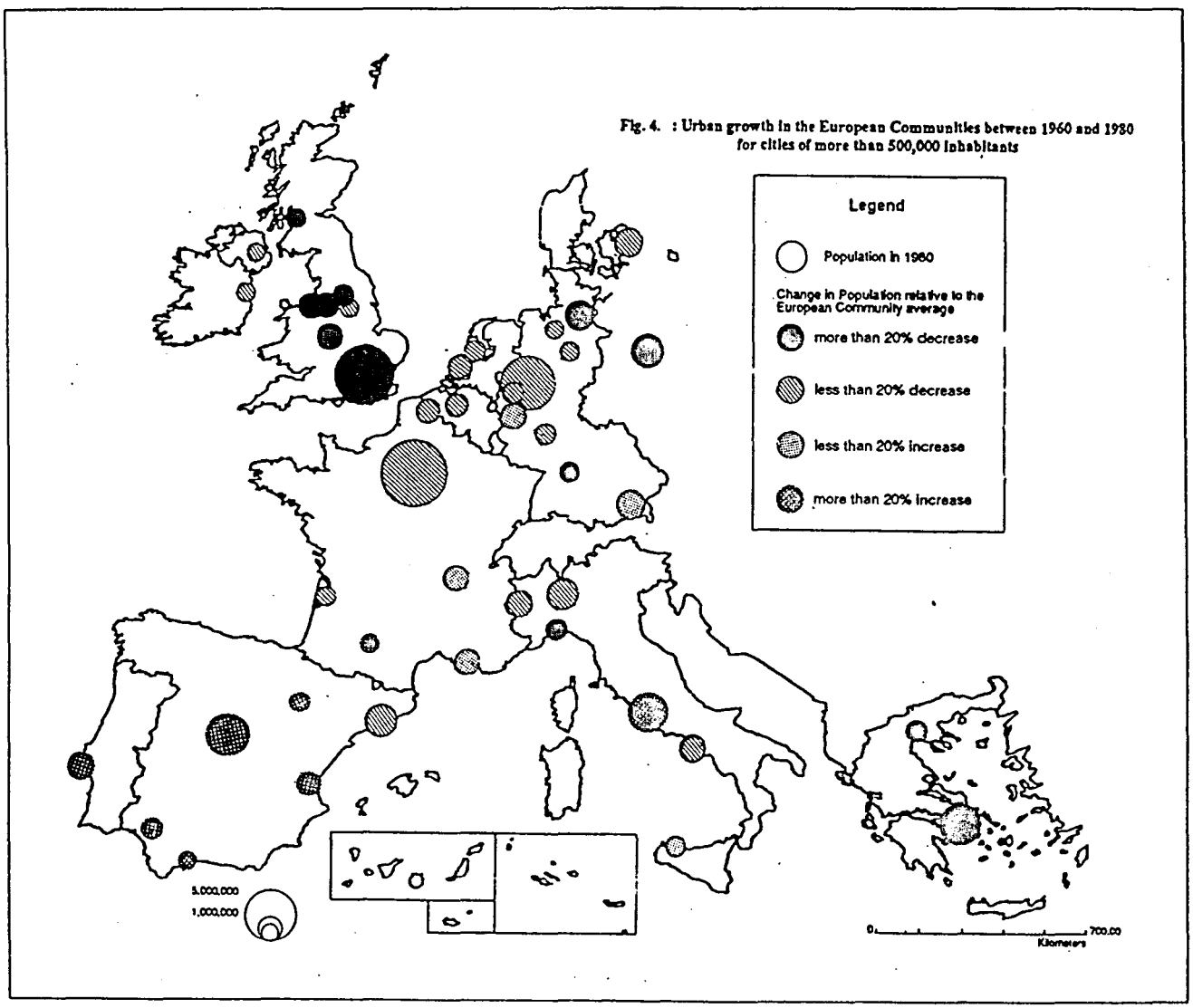


Figure 5.1 Population growth in cities of more than 500 000 inhabitants.

	URBAN POPULATION (% of the total population)		ANNUAL GROWTH RATE (in %)	
Countries	1985	1988	1965-80	1980-88
B	93	97	0,4	0,2
DK	77	86	1,1	0,3
D	79	86	0,7	0,1
D	73	77		
GR	48	62	2,0	1,3
E	82	77	2,2	1,3
F	67	74	1,3	0,5
IRL	49	58	2,1	1,1
I	62	68	1,0	0,5
L				
NL	56	89	1,2	0,5
P	24	32	1,7	1,9
UK	87	93	0,5	0,4
Austria	51	57	0,8	0,6
Switzerland	52	61	1,0	1,3

Figure 5.2 Degree of urbanization and urban growth

Today one in every six citizens in the Community lives in a city of over 1 million inhabitants. One in three lives in a town with fewer than 20 000 inhabitants (see Figure 5.3). In practice a very large proportion of the population lives in the country or on the outskirts of cities but travels into the city centre to work every day.

INHABITANTS	MILLIONS
< 20 000	130
20 000 - 100 000	67
100 000 - 500 000	53
500 000 - 1 million	22
> 1 million	50

Figure 5.3 Population distribution in the Community as a function of city size

The commuter traffic is one of the principal sources of air pollution, causing road congestion and noise. The situation is particularly acute in most of the large metropolitan areas in the south of the Community which have grown so fast that the quality of life in the cities has declined sharply (noise, buildings in poor state of repair, and suburbs and industrial estates of mediocre quality). Noise in particular disturbs a large proportion of the population. In Germany, for example, estimates suggest that half the population is disturbed by traffic noise and 20% very seriously (see Figure 5.4).

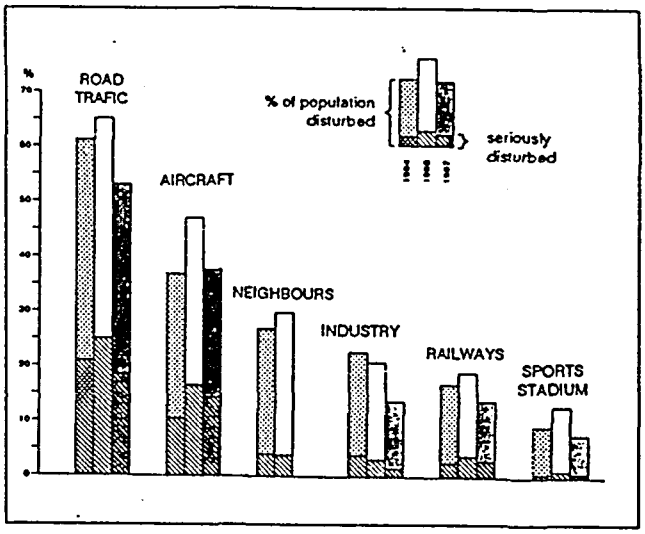


Figure 5.4 Exposure to noise in Germany

Even when population growth levels off, urban development continues as each individual needs more space(see Figure 5.5).

TYPE OF USE	USE			
	1981		1985	
	1000 ha	in %	1000 ha	in %
Total surface area per habitant of which	2937	11.8	3115	12.5
- buildings and open ground	1360	5.5	1488	6.0
- industrial sites (excluding utilized area)	79	0.3	52	0.2
- recreational areas	128	0.5	146	0.6
- transport facilities	1169	4.7	1211	4.9
- other uses (apart from land unfit for crop growing)	201	0.8	218	0.9
Farmland (excluding marshland and heathland)	13761	55.3	13548	54.5
Woodland	7328	29.5	7360	29.6
Water bodies	430	1.7	444	1.8
Marshland, heathland, land unfit for crop growing and utilized industrial areas	414	1.7	403	1.6
Total registred surface area in the Federal Republic of Germany	24869	100	24869	100

Figure 5.5 Land use trends in Germany.

Very often this urban spread has swallowed up good farmland (see Figure 5.6). But the figures show only part of the picture since urban development is usually patchy and affects a far vaster area of countryside than is indicated in the statistics. Increasingly, shemes are being introduced to save land, particulary by "recycling" disused industrial sites, even if the areas involved are small by national standards. At local level, however, disued sites take up

large areas in, for example, traditional industrial regions. This is the case in the United Kingdom where there was an estimated 43 000 hectares of disused industrial land in 1974. Since then every year 2 000 hectares have been cleaned up, only for another 2 500 hectares to be abandonned.

Country	Years	Loss in ha/year	Loss in m2/ person/year
Austria		9300 ha	12,3 (4)
Belgium	1960-1982	8800 ha	8,9 (4)
	1982-1984	3600 ha	3,7 (4)
Denmark		2500-3000 ha	4,9-5,9 (4)
England and Wales		4000-5000 ha	- (4)
Finland		10000 ha	,20,4 (4)
France		50000 ha	- (5)
Italy	1970-1982	150000 ha*	- (4)
Liechtenstein		20 ha	7,3 (4)
Luxembourg	1972-1985	600 ha	16,3 (4)
Norway	1977-1981	1400 ha	- (5)
FR Germany	1981-1985	42000 ha	6,9 (4)
Netherlands	1981-1983	7381 ha	5,1 (4)
Sweden		7000-10000 ha	8,4-12,1 (4)
Switzerland	1955-1965	3000 ha	5,5 (3)
	1965-1975	2500 ha	4 (3)
Turkey	1950-1978	8900 ha**	- (4)

* Including farmland lost to forestry
** Estimate

Figure 5.6 Annual loss of farmland to urban development

The coastline

The coastline, with its rich but fragile ecological resources, is under heavy pressure from urban development and tourism. For example, analysis of land use in Portugal shows that, as a national average, urban development has taken up 15% of the land in a 3km wide strip along the coastline but just 1% some 20 km further inland (see Figure 5.7)

	0-3 km	3-5	5-8	8-11	11-14	14-17	17-20
Built-up land	14,3	9,8	8,0	4,5	2,3	2,3	1,0
: Farmland	37,7	42,9	46,7	49,4	45,0	42,6	44,8
1: Forest	21,0	26,0	21,3	21,4	28,0	32,3	31,9
Semi-natural habitats	19,0	15,5	20,5	21,4	23,2	21,8	21,5
Wetlands and surface water	8,0	5,8	3,5	3,3	1,5	1,0	0,8
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Figure 5.7 Land use along the Portuguese coast in relation to distance from the coastline (in %)

Future forecasts predict further urban development along the coast (see Figure 5.8).

Projected biophysical land use in a strip from 0 to 5 km from the coast in the Languedoc-Roussillon region up to the year 2000 (in hectares)

	YEAR					
category Land Cover	Results from remote sensing			Projections		
	1975	1980	1985	1990	1995	2000
Built-up land	8.215	8.440	8.665	8.890	9.115	9.38
Farmland	35.500	35.470	35.440	35.405	35.365	35.33
Forest and semi-natural habitats	20.995	21.055	21.115	21.235	21.235	21.29
Wetlands and surface water	37.270	37.080	36.890	36.705	36.525	36.34
Total	101.980	102.045	102.110	102.175	102.240	102.30

Figure 5.8 Projected biophysical land use along the Roussillon coast

One important point to note is that the situation varies considerably within the Community, because of the differences either in levels of demographic pressure (there is no such pressure on the coast of Nothern Scotland) or in regional development policies. For example, considering a 500 m wide strip parallel to the high-tide line, over 50% of the Belgian coast has been developed, compared with under 5% of the Dutch coast.

5.2 Landscapes

The mosaic of country landscapes shaped by the interaction between human activity and natural conditions bears witness to the history and culture of the peoples of Europe. Both the quantity and quality of this heritage have deteriorated considerably over the last 30 years and are continuing to do so. The division of the countryside into small holdings is one quantifiable indicator, as illustrated by the example of Germany (see Figure 5.9).

Qualitative changes are, of course, far more difficult to pin down. Nevertheless, certain indicators provide an idea of the scale of the changes which have taken place. In Brittany over 160 000 km of border and hedgerows have been cleared, transforming the farmland which they divided into open fields. In Belgium the total area of orchard consisting of standard trees has fallen by 95% in 20 years (see Figure 5.10).

In the Mediterranean regions over half the crop-growing terraces have been abandoned and many more are about to be, clearing the way not only for degradation of the landscape but also for soil erosion (see Figure 5.11).

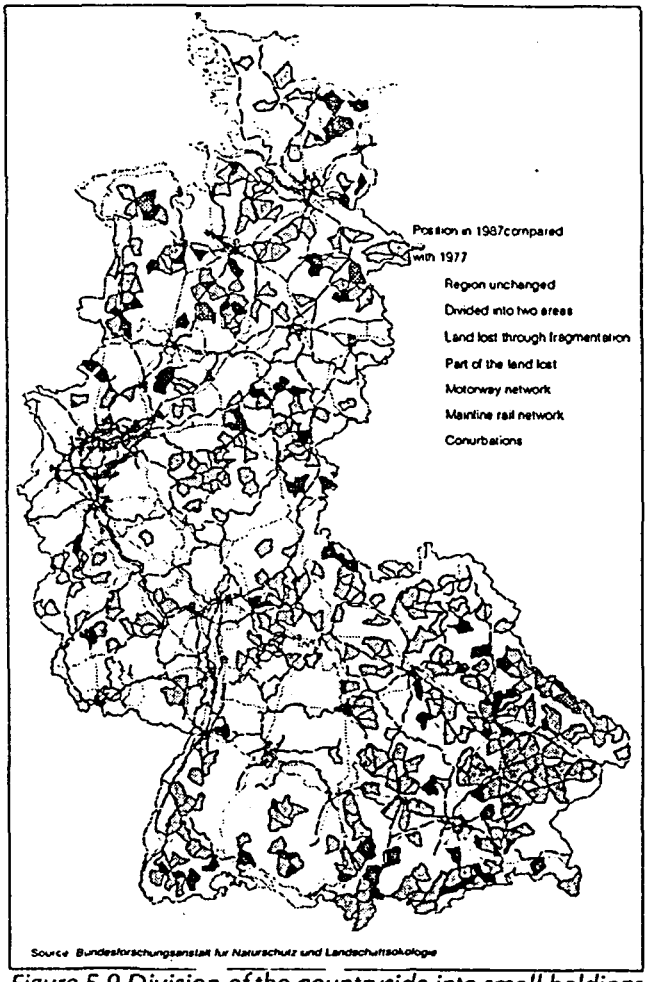


Figure 5.9 Division of the countryside into small holdings in Germany from 1977 to 1987 (Source: Umplis)

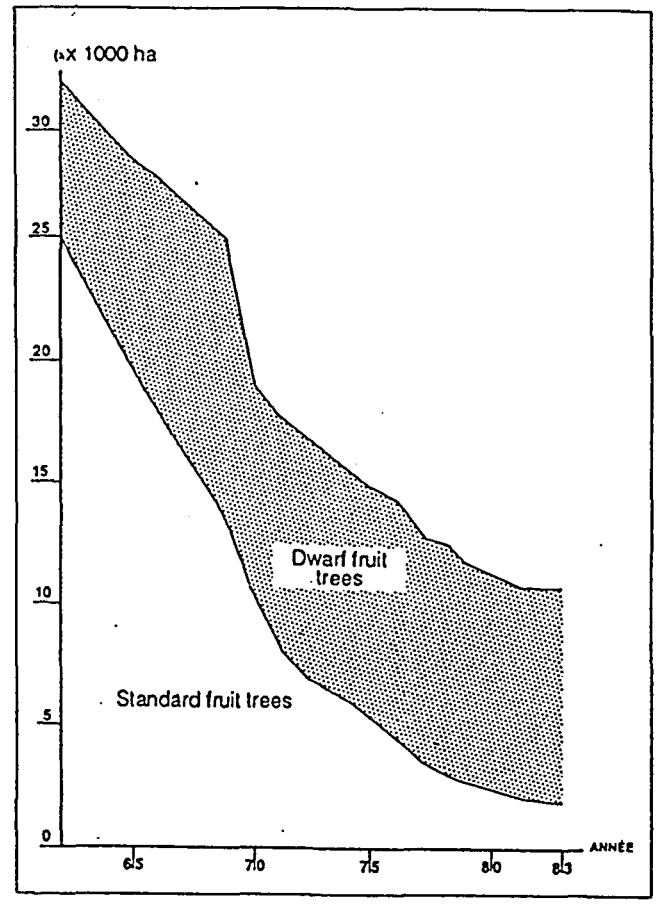


Figure 5.10 Trends in orchard area in Belgium from 1962 to 1983

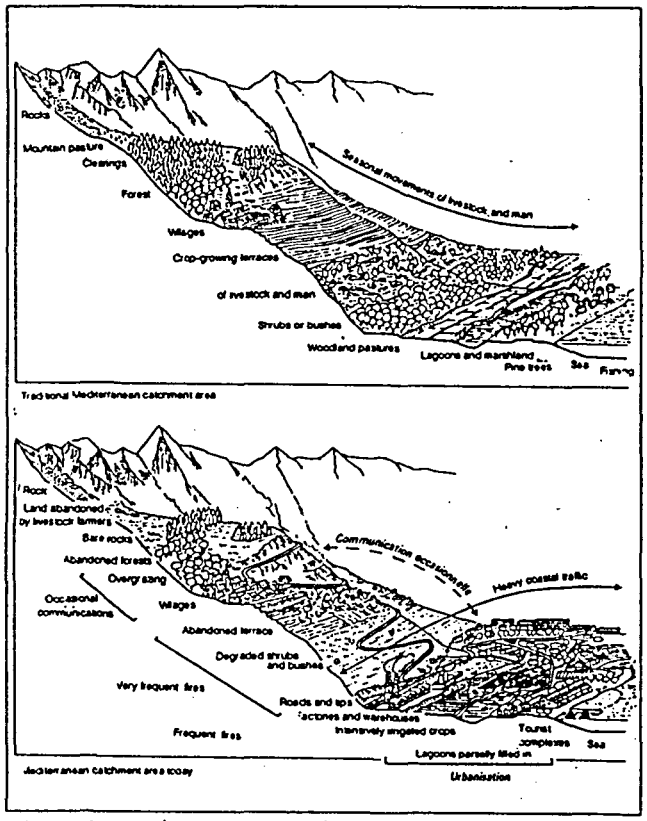


Figure 5.11 Changes in Mediterranean catchment areas

6. ACTIVITIES OF HIGH ENVIRONMENTAL RISK

As man learned to protect himself from natural risks, he introduced new technologies exposing a growing proportion of the population to high-risk activities. Not only are the workers employed in these activities at risk, but also the local population and the entire environment, often far away from the installations themselves. Similarly, the effects of any accident are not always felt immediately but may become apparent long afterwards. The nuclear power industry, the chemical industry, movements of hazardous substances and, more recently, the industries employing genetic engineering all pose new risks. To make matters worse, many of these high-risk activities are located in densely populated areas (see Figure 6.1.).

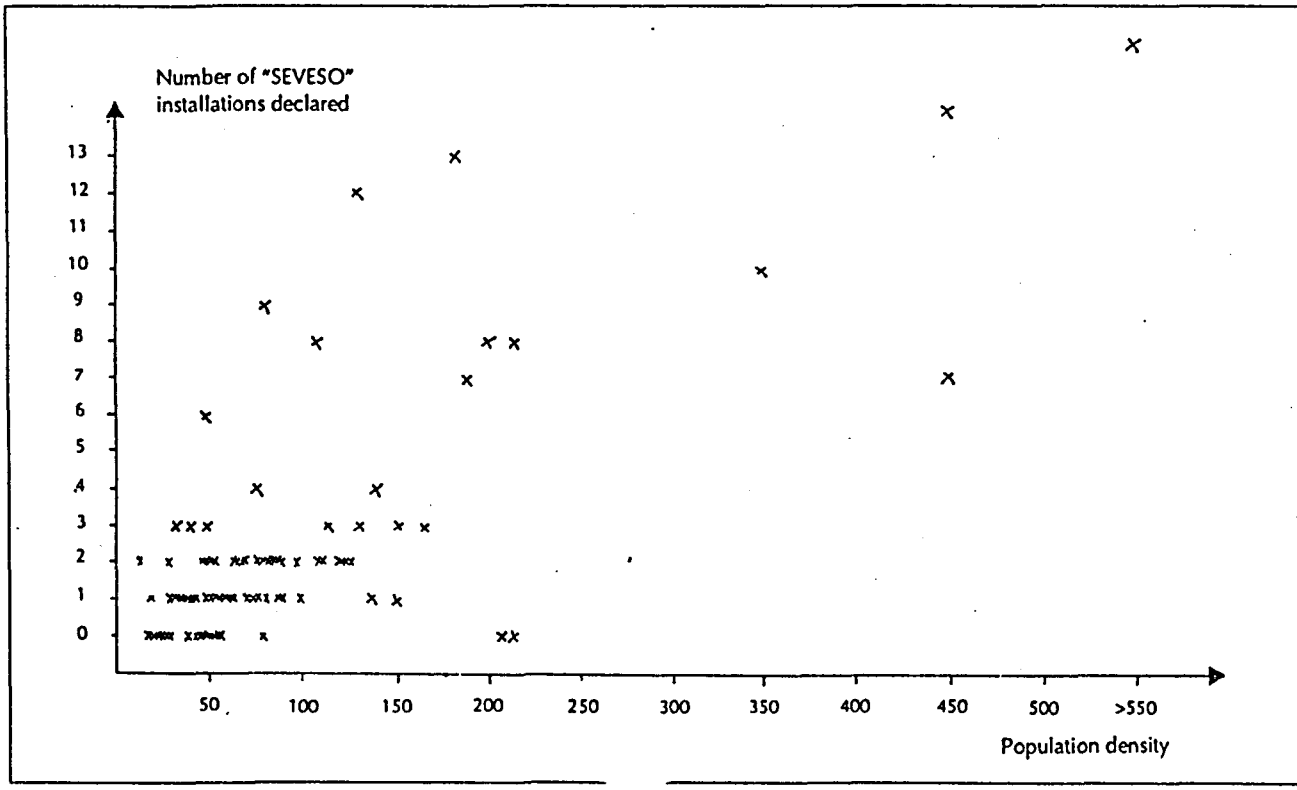


Figure 6.1 Correlation between population density and highrisk installations in France

Industrial activities and infrastructure

In July 1976 a cloud of trichlorophenol leaked from the reactor at a chemical plant in Seveso, contaminating 1 800 hectares of land and injuring local inhabitants and livestock. This accident revealed the gaps in the scientific knowledge about the effects of synthetic products and the lack of suitable arrangements for operating the plant and controlling the consequences of any incident.

Over ten years later a fire at the Sandoz plant in Basle and the subsequent fire-fighting measures spilt highly toxic products into the River Rhine. This accident created a greater awareness of the potential transfrontier consequences over long distances.

Large-scale infrastructure projects, such as dams, in turn pose risks which must be kept under control.

Nuclear hazards

The explosion of a reactor at the Chernobyl nuclear power station on 26 April 1986 served as a reminder, if any was needed, of the potential scale of the consequences of a nuclear accident: almost 2 million hectares around the power station were contaminated and 300 000 people remain under surveillance. Above all, however, the accident illustrated the interdependence of countries in situations like this (see Figure 6.2) and the consequences in terms of costs and disruption of economic activity. A systematic survey of the reactors in central and eastern Europe is under way with a view to closing down the most dangerous ones.

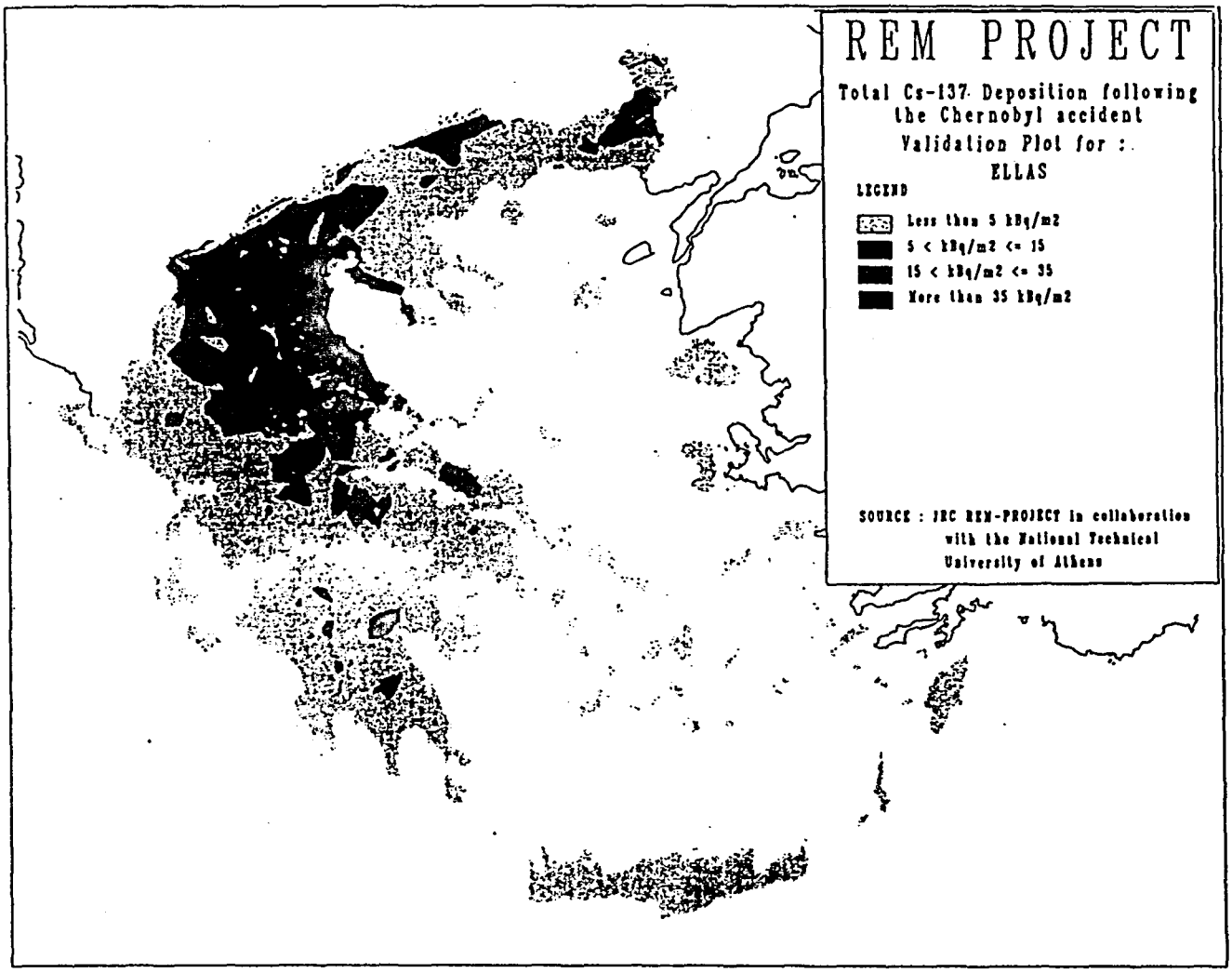


Figure 6.2 Radioactive caesium fallout in Greece

Transport of hazardous products

From the Torrey Canyon and Amoco Cadiz accidents in the English Channel to the Exxon Valdez disaster in Alaska, every year incidents occur, some major, others minor. They bear witness to the scale of the problem and to the difficulty of finding solutions. To add to this, oil is not the only commodity carried by oil tankers. Toxic products are transported too. Road and rail freight services are dwarfed by shipping in terms of unit capacity, but they directly expose the land en route and the local populations to risk.

Genetic engineering

History is marked by numerous biological disasters: last century mildew devastated Europe's vines. More recently, Dutch elm disease wiped millions of these trees from the landscape of Europe and North America. There is a danger, however tenuous, that genetic manipulation of certain species could release modified organisms into the environment which could upset the natural balance of the existing fauna and flora. A Directive has been adopted to control this risk.

Forest fires

In contrast to the risks described above, the higher risk today of forest fires cannot, of course, be attributed to the introduction of new technology. The root cause lies in changes in land use and management. Land left to lie fallow plus the build-up of brushwood in forests or livestock pastures, combined with increased tourism and vandalism, have created a worrying situation described in the Section on forestry.

War

Perhaps it seems improper to talk about the environmental consequences of war, as if to divert attention and play down the horror. In practice, however, ecological damage adds to the human suffering and constitute a further problem to be solved before returing to normal life. To give just one example, in early 1991 the retreating Iraqi army set hundreds of oilwells in Kuwait on fire, unleashing air pollution which forced the evacuation of hundreds of people. For months SO2 emissions of some 28 000 tonnes a day were recorded, equivalent to over 70% of annual emissions from the Community as a whole, plus CO2 emissions of almost 500 000 tonnes a day, just over double the level in France.

7. BIOLOGICAL DIVERSITY: A COMMON HERITAGE TO PRESERVE AND REGENERATE

The general development of the Community's biological heritage gives several reasons to fear for its survival:

- *several species or populations of animals needing extensive space are in danger of extinction;*

- *residual forest ecosystems remain in an extremely precarious predicament; in the southern regions of the Community the continuity of woodlands can no longer be guaranteed;*

- *the area of open countryside has contracted dramatically and is continuing to do so under the combined impact of changes in land use and eutrophication;*

- *large aquatic environments have become extremely rare and are at great risk. For their safeguard, a land management policy is needed with the objective of preserving entire catchment areas. Other types of habitat (for example, bogs and reed beds) are equally at risk but, technically, easier to preserve because of their small size.*

Without substantial reinforcement of existing measures and of the steps taken to implement them, the already severe depletion of the biological heritage will continue in most of the Community. Even in places where pressures are being contained, it will take several years before regeneration starts. Above all, in the peripheral regions there is a danger that the legitimate need for economic development could be pursued at the expense of their rich biological diversity, unless an enormous effort is made to ensure sustainable development. In the short term, the plight of individual species and habitats cannot be expected to improve apart from in a few regions with no large-scale environmental problems or where preventive measures have already been taken.

Europe's enormous variety of climates and soils, combined with its jagged coastline, are ideal conditions for rich biological diversity. Today this diversity is far more marked in the south of the Community as a result of the effect of fluctuating glacial periods which, since the Tertiary Period, have intermittent affected Europe down to the shores of the Mediterranean (see Figure 7.1).

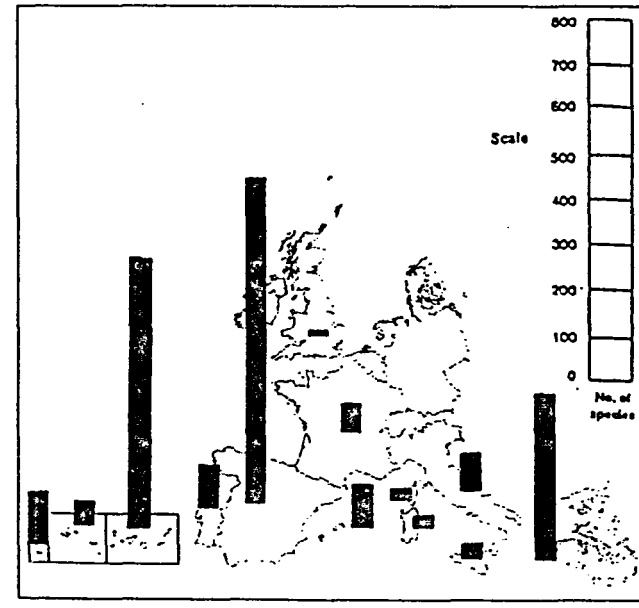


Figure 7.1 (a)Number of indigenous plant species in the Community

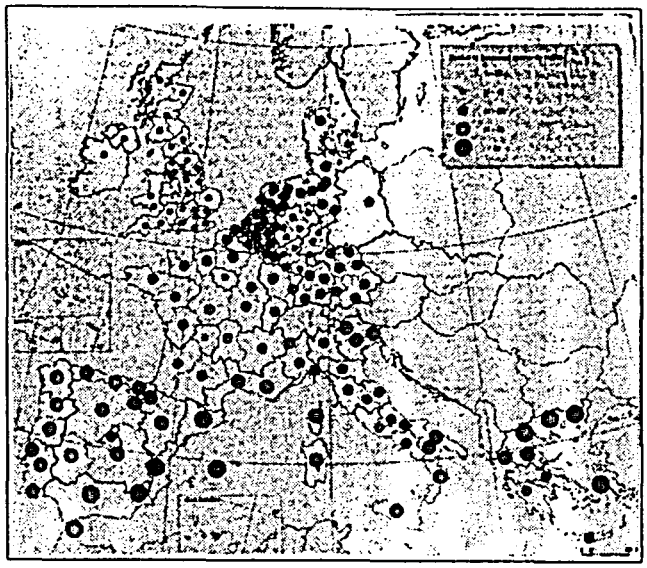


Figure 7.1 (b)Distribution of threatened species of bird

But northern regions too have unique ecosystems, in particular open countryside such as heathland or fields divided by hedgerows and trees. Almost all these habitats are the fruit of arable or livestock farming which, over the centuries, has slowly shaped and enriched the countryside. In marked contrast, over the last few decades intensive farming and forestry, infrastructure-building and urban spread have led to a general depletion of this biological heritage, a process still ongoing in most regions (see Figure 7.2a). Most land has been taken up by activities which leave little room for wildlife, to such an extent that over 95% of the existing species of fauna and flora are squeezed into less than one quarter of the Community's territory (see Figure 7.2b).

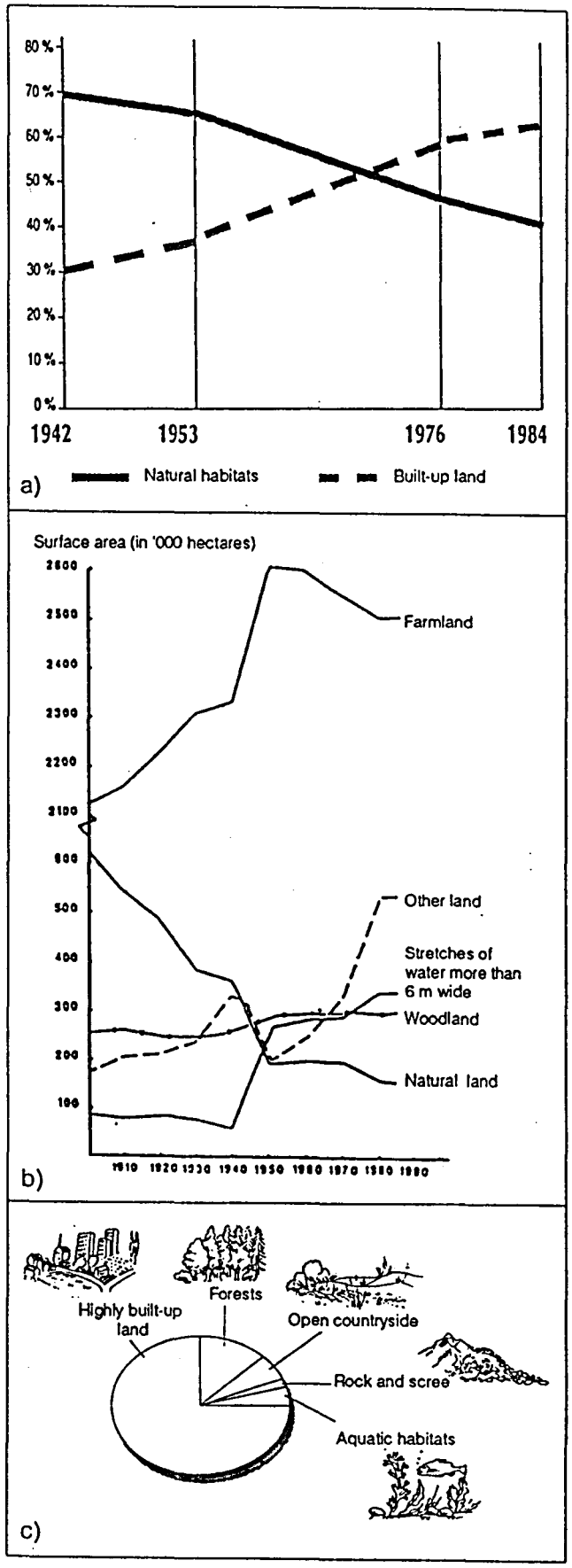


Figure 7.2 (a)Relative trends in natural habitats and built-up land in the Camargue region
(b)Land-use trends in the Netherlands
(c)Land-use in the Community today

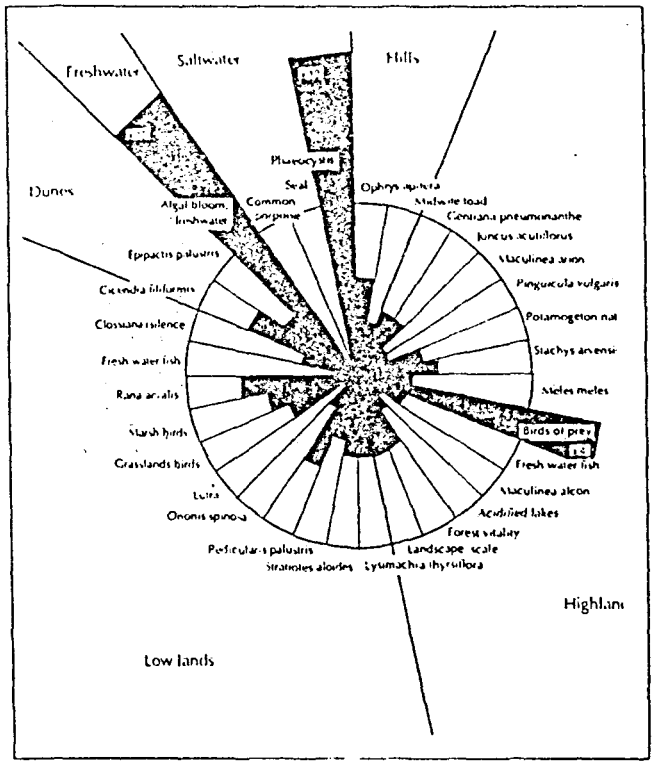


Figure 7.3 Relative trends in different species groups in the Netherlands (1930 to 1990)

areas. This has brought with it enormous diversity as regards the types of forest. However, the clearing of forests to make way for farmland and to use the timber, started back in Neolithic times. Today, forests still cover 24% of the Community's territory, but the figure varies sharply from one country to another: from 6% in Ireland to 30% in Germany.

Last century the forests started to spread once again, but generally in the form of monocultures, mostly of non-indigenous species, which, therefore, did little to preserve or regenerate the biological heritage (see Figure 7.4).

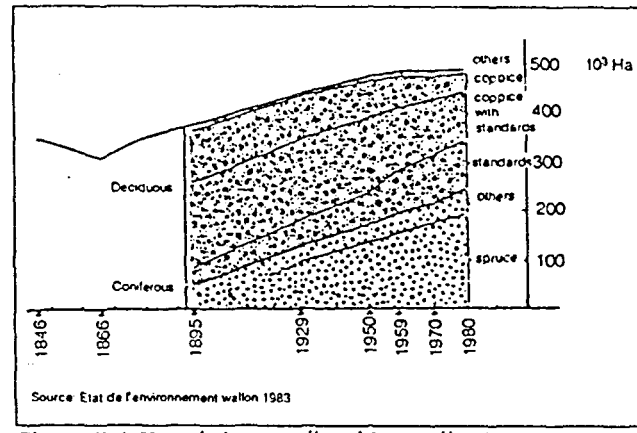


Figure 7.4 Trends in woodland in Wallonia

The figures on the state of wildlife remain fragmentary. The impressive mass of disparate data accumulated in annals, reports and other publications will not suffice. In order to assess the state of a given species or type of habitat and decide whether the situation is satisfactory, worrying or critical, it is essential to know the number and distribution of the individual specimens or of their habitats within their range. Generally, no such comprehensive Europe-wide picture or time series are available. There is a clear need to step up the European and international action taken over the last few years to fill this gap and to put it on a more systematic footing. Nevertheless, the information available today amply suffices to make everyone aware of the serious state of Europe's biological heritage and to introduce extra emergency measures.

Forests

Forests are particularly interesting habitats from the biological point of view. Their relative stability houses a multitude of species living side by side in a chain of complex interrelationships as rivals or predators. Ecological conditions in Europe are particularly propitious for forests. Left undisturbed, forests would ultimately oust grassland or shrubs virtually everywhere in the Community. Originally, forests covered virtually the entire Community, except for cold mountaintops and a few extremely arid, wet or windy

Roughly half the woodland in the Community consists of large forests. Not only their size but also their structure and composition must be maintained as they are vital to the survival of the flora and fauna which they house. Although on the whole forest cover has been improving, certain types of forest, such as moist forests and alluvial forests are still losing ground. Moreover, only a very small fraction (less than 1%) of the woodland comprises relic ecosystems which, because of their small size, highly vulnerable and therefore require special conservation measures (see Figure 7.6).

Mediterranean forest ecosystems give particular cause for concern. The reafforestation policies pursued over the last few decades gave no thought to maintaining biological diversity, with timber production being the sole objective. In practice, they have fallen far short of even their production targets. The drift from the land, combined with greater fragmentation of the habitat for tourist purposes in particular, have resulted in a sharp increase in fires, wreaking enormous economic and ecological damage (see Figure 7.5). Increasingly, the declared objective of forestry policies is to make forests perform three functions at the same time: timber production, recreational amenities and conservation. However, there is as yet no quantitative indications of a change towards these balanced objectives.

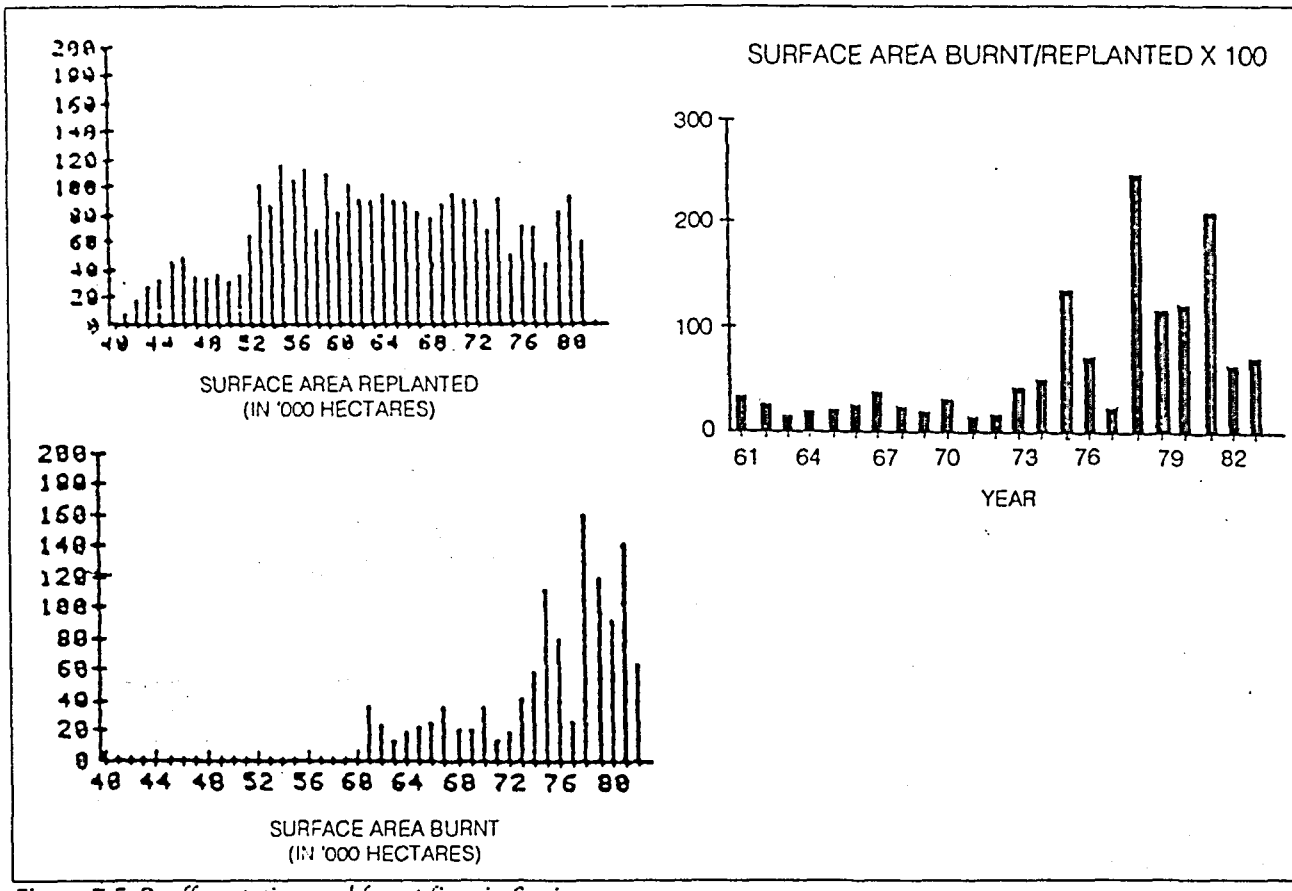


Figure 7.5 Reafforestation and forest fires in Spain

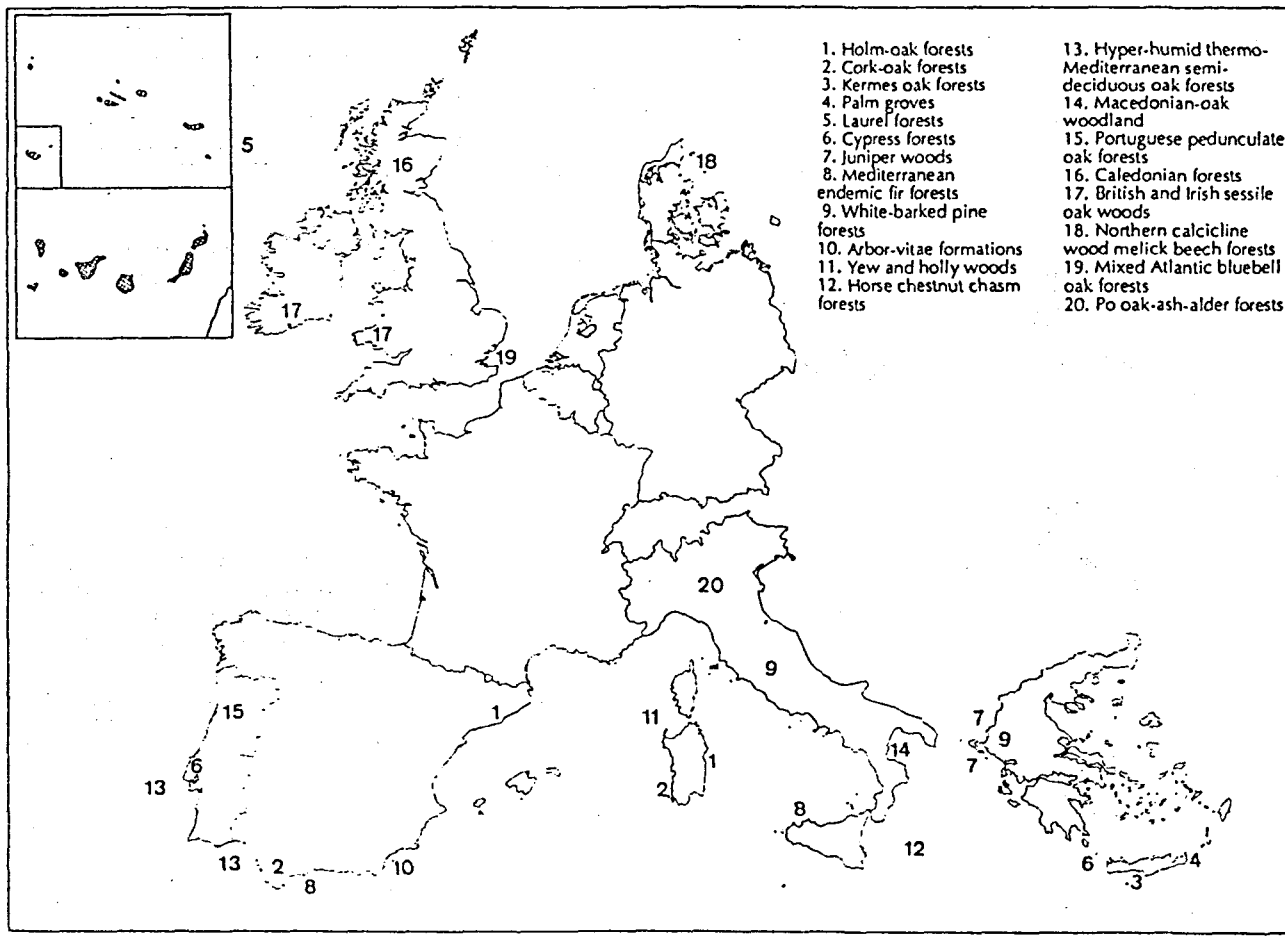


Figure 7.6 The main relic forests in the Community

Open countryside

Non-intensive livestock rearing has created and preserved unique grassland or shrub habitats, such as heathland or Alpine meadows (see Figure 7.7).

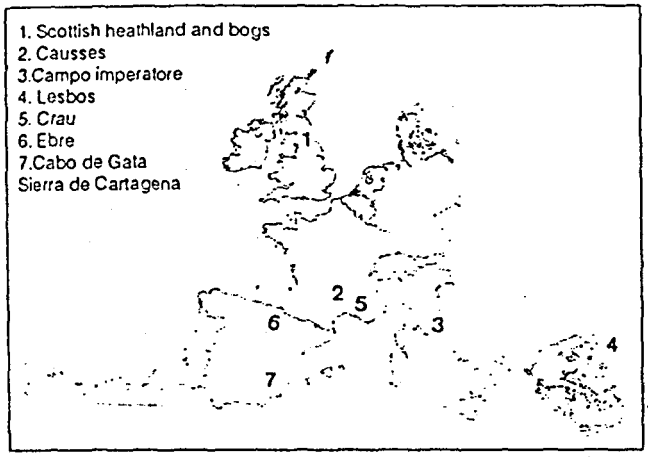


Figure 7.7 Important areas of open countryside in the Community.

Today these habitats cover only a small percentage of their original area. For example, in England the total area of heathland shrank by 72% between 1830 and 1930 (see Figure 7.8 on the Poole Basin). In the Netherlands, Denmark and Wallonia, over 90% has disappeared. Spain's grasslands contracted by over 60% between 1915 and 1985. These trends were matched by a proportionate decline in the wildlife dependent on these habitats (see Figure 7.9). There are two causes for this decline in wildlife: on the one hand, the habitats have been replaced as the land has been turned over to other uses (particularly afforestation) while on the other pesticides have affected the food chains within these ecosystems (for example, by reducing the variety of insects on which many birds depend).

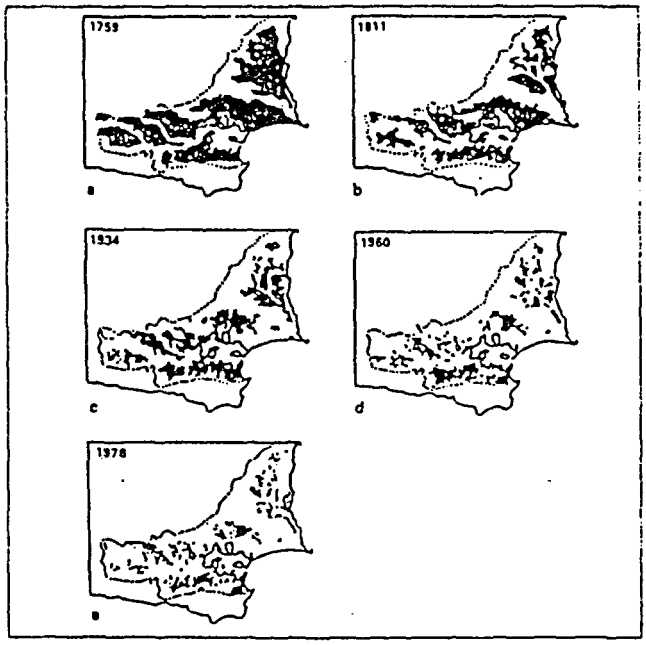


Figure 7.8 Changes in the extent of heathland in the Poole Basin

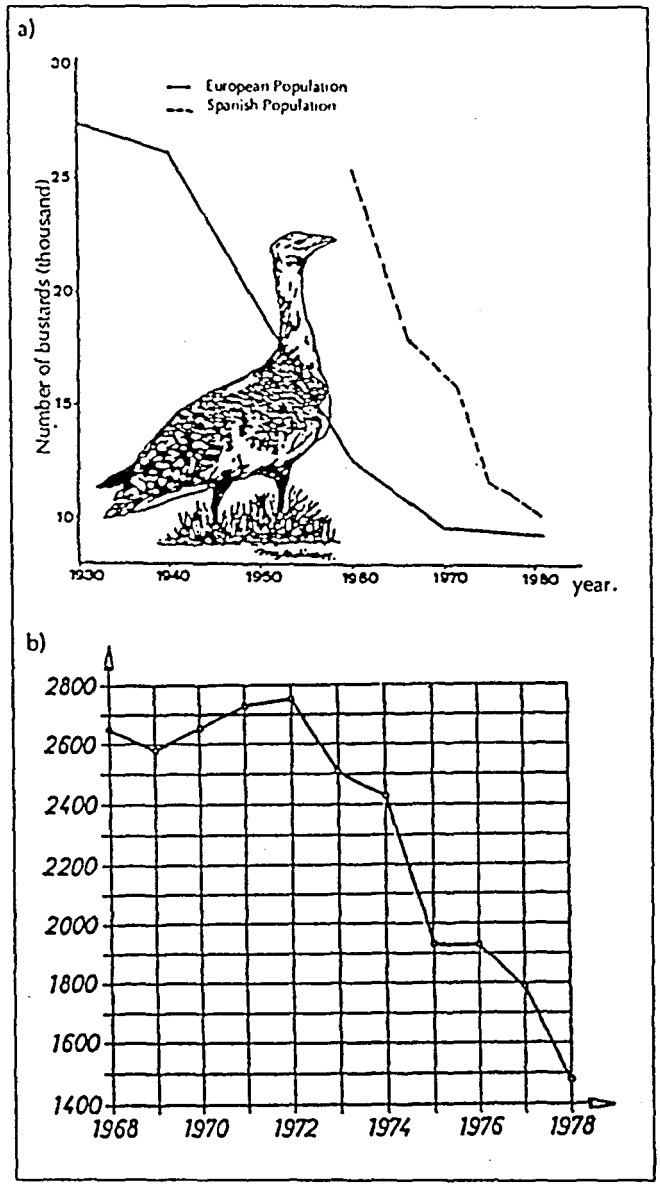


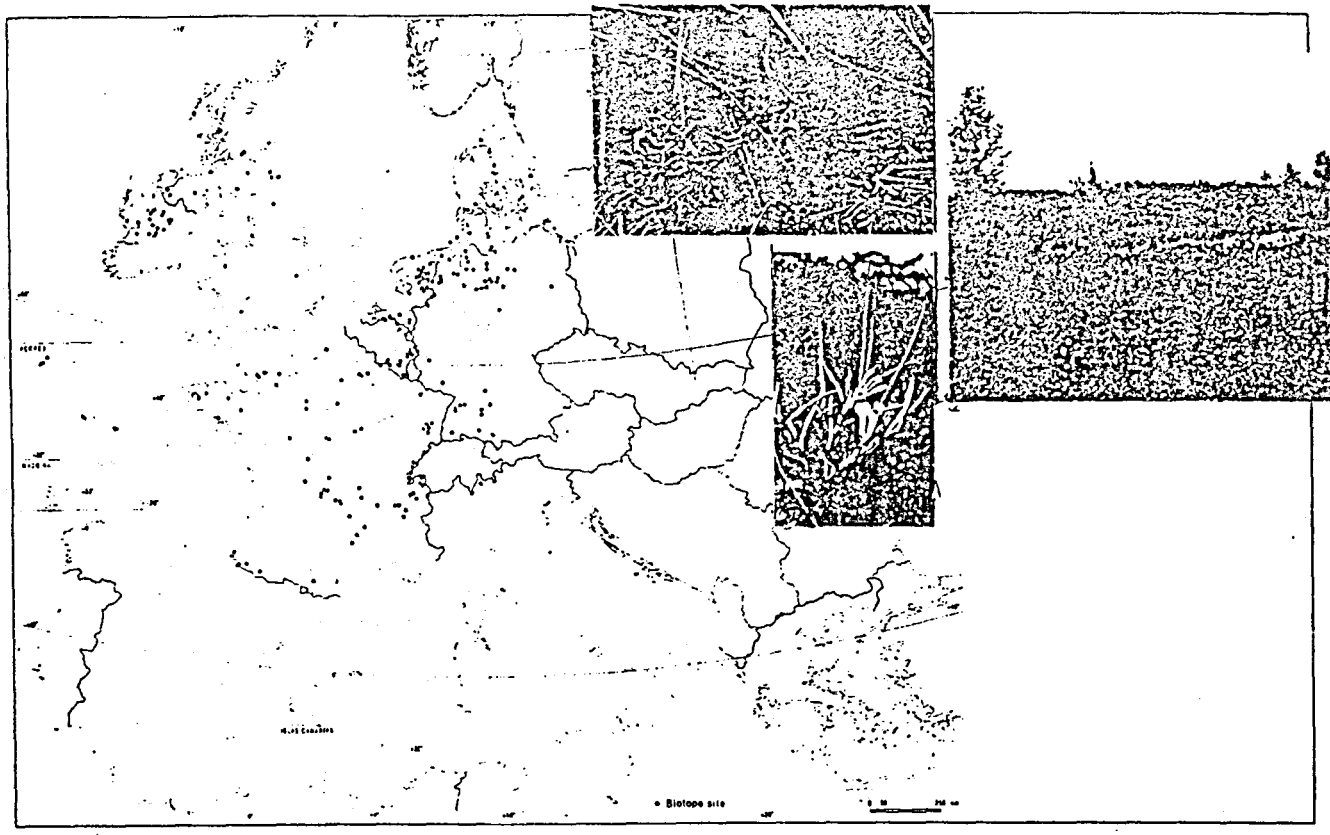
Figure 7.9 Population trends for: (a) bustards in Spain and Europe; (b) Tetrao tetrix in Bavaria.

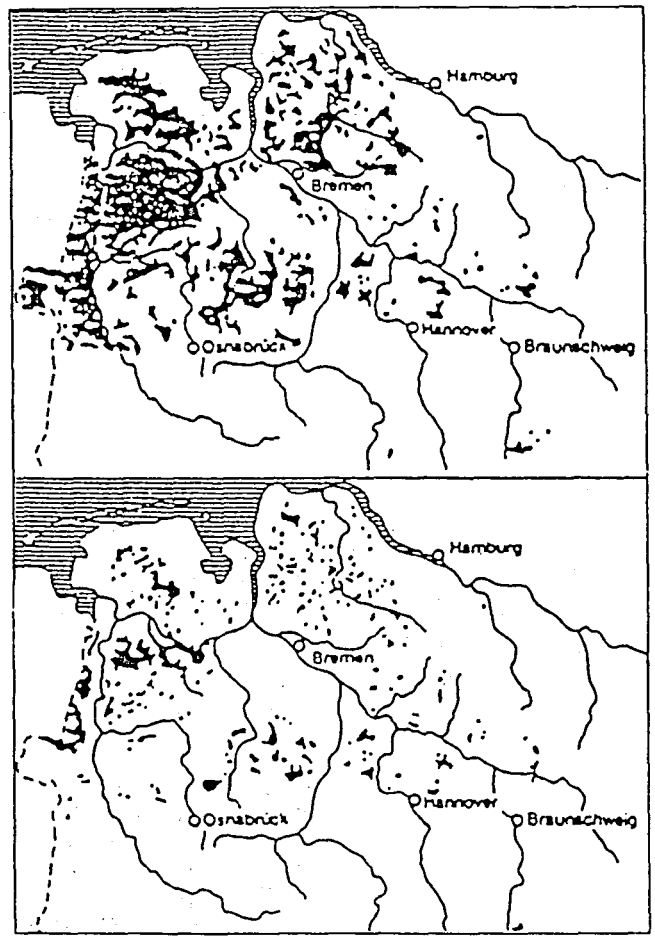
Aquatic habitats

Europe's indented coastline, together with its rivers and distinctive soil and climatic conditions, have endowed the Community with extensive wetlands of outstanding ecological value. Recently, the development of artificial lakes for recreational purposes has worked to the advantage of some fauna, particularly ducks, geese, cormorants and herons. In the opposite direction, other types of aquatic environment have shrunk sharply, particularly reed beds, salt marshes and bogs (see Figure 7.10).

In the Community, virtually all river and estuarine ecosystems have suffered, principally under the impact of pollution and development, to the extent that the major biological interest of these systems has been lost. The rivers in the lowlands of Northern Europe are in such a state that most species of freshwater fish and mammals

living in them are at risk. The Loire is the only major river in Europe's middle latitudes which still follows a semi-natural course.





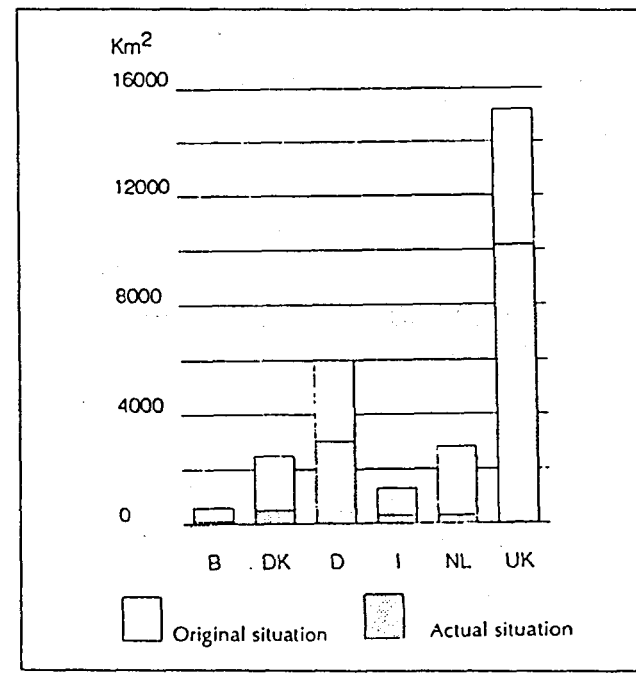


Figure 7.10 (a) Raised bogs in the Community (b) Trends in Northern Germany (c) Trends in the Community.

Unfortunately, a number of species have, so to speak, become "stars" against their will as their numbers have dwindled to the point that their very survival is in doubt (see Figure 7.11). Special protection programmes are needed. Some have already been prepared, for example for the monk seal. The current position and short-term prospects for the one hundred or more species on the danger list are giving great cause for concern. The programmes will have to be applied as rapidly and resolutely as possible.

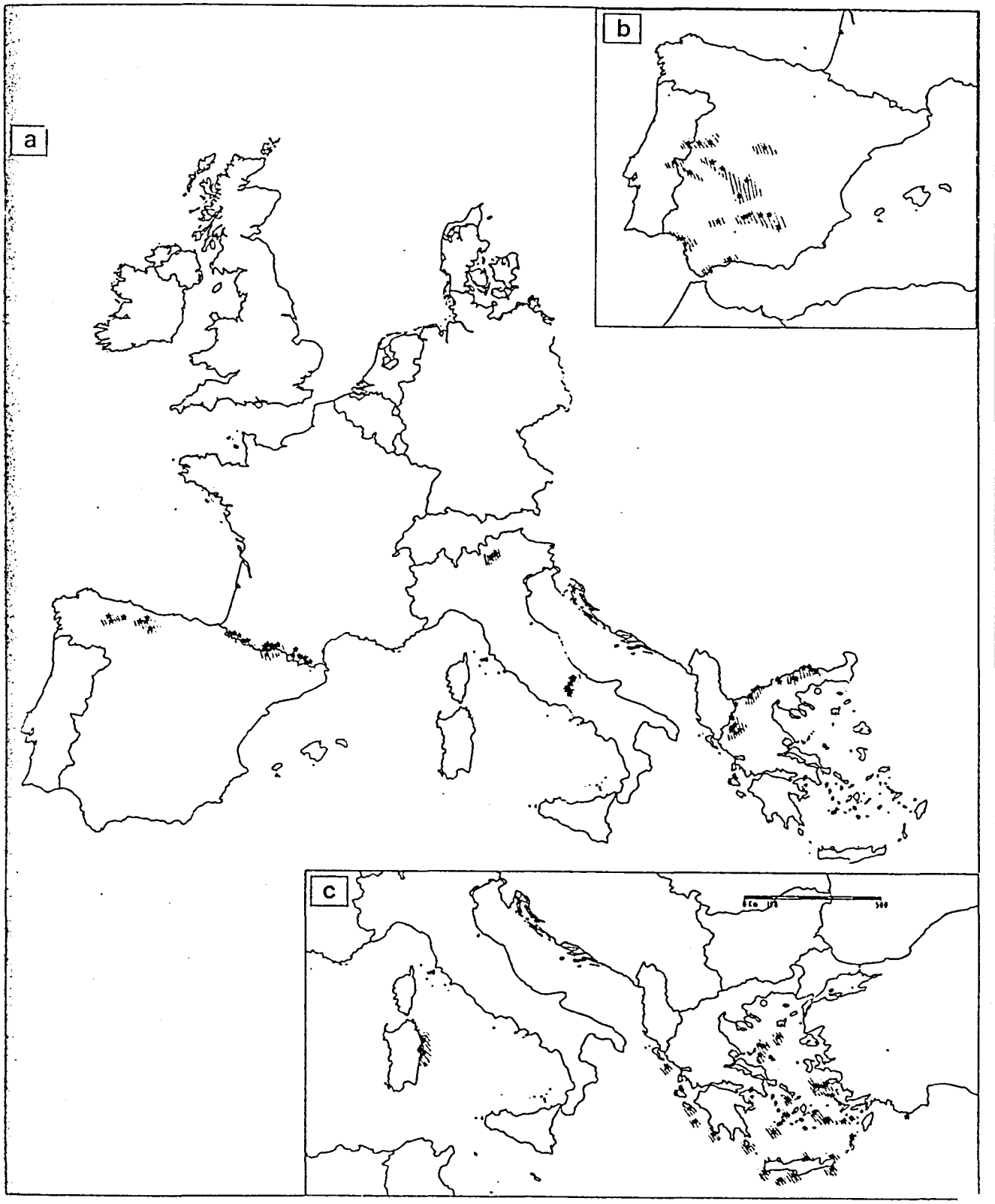


Figure 7.11 Range and population of (a) bear; (b) the Spanish or Pardel lynx and (c) the monk seal.

Part two

CAUSES OF ENVIRONMENTAL DEGRADATION

As we have seen, many, if not all, human activities have a direct or indirect impact on the environment and the availability of natural resources. Knowledge of these interrelationships - as yet limited - has shown that one given activity may have effects on one or several environments, just as any one environment may suffer the combined effects of several activities. Consequently, it is on these activities that environmental policies must act and this requires an overall approach based on the concept of sustainable economic development. The situation of agriculture, forestry, fisheries, energy, industry, transport and tourism is therefore presented from the point of view both of observed impact on the environment and of past and future trends.

1. AGRICULTURE, FORESTRY AND FISHERIES

Agriculture has become an important source of pollution, and traditional landscapes have to a large extent disappeared. However, the conflict between nature and agriculture is not so intrinsically great given the extent to which the latter depends on natural resources. Nevertheless, the change in agricultural practices over the last few decades has given rise to a whole new category of environmental problems (Figure 1.1):

Agriculture and Environment - Key Concerns

Environmental Issues	Associated Agricultural Issues
Human health consequences of residues in food, water and soil	Use of pesticides, fertilisers, hormones, veterinary products, and feed supplements
Loss of fauna and flora	Abandonment of "traditional agriculture", use of pesticides and fertilisers, drainage, habitat destruction
Surface and groundwater pollution, including marine pollution	Excessive applications of fertilisers and livestock waste leading to leaching to groundwater and run-off to surface waters. Poor management of farm wastes, such as manure and silage liquor
Air pollution	Ammonia and nitrous oxides derived from intensive livestock units, slurry spreading, burning of straw and wastes
Aquifer depletion, salinisation of soils and water supplies	Excessive or poorly managed irrigation
Soil compaction, erosion and pollution	Inappropriate farming methods, eg ploughing of vulnerable soils, use of heavy machinery, spreading of sewage sludge contaminated with heavy metals
Biotope loss	Drainage, land consolidation, land improvement, removal of hedges and ditches, abandonment of traditional systems
Landscape change	Increased field size, mechanisation, removal of traditional features, abandonment of farming, construction of new buildings, monoculture
Odours	Intensive livestock farms, spreading of wastes

Figure 1.1 Agriculture and environmental problems

These types of problem vary considerably acute throughout the Community. Some are chiefly limited to the intensively cultivated zones and where use of fertilizers and chemicals is greatest and herd densities highest; most of these areas are situated in the north of the Community, with some exceptions such as the Po Valley and the coastal belts of Spain.

A heavy regional concentration of crop types can be observed (33% of wheat production on 5% of the UAA, 59% of maize on 14% of the UAA). This is accompanied by a decline in the area of land devoted to agriculture due, in addition to urbanization and abandonment of farmland, to production surpluses. These important phenomena are explained in the following, although the available data are frequently limited to a few countries or aspects only.

Of the three principal nutrients required for growing crops (nitrogen, phosphorus and potassium), it is above all nitrogen which is associated with increased yields and is the main cause of environmental concern.

The trend in fertilizer consumption shows a slight decline in nitrogen use in some countries since the middle of the 1980s. By contrast, Figure 1.2 shows that the total in the Community as a whole has increased by almost 50% in the period concerned, and that consumption is increasing particularly rapidly in some countries such as Ireland, Italy, Greece and Spain:

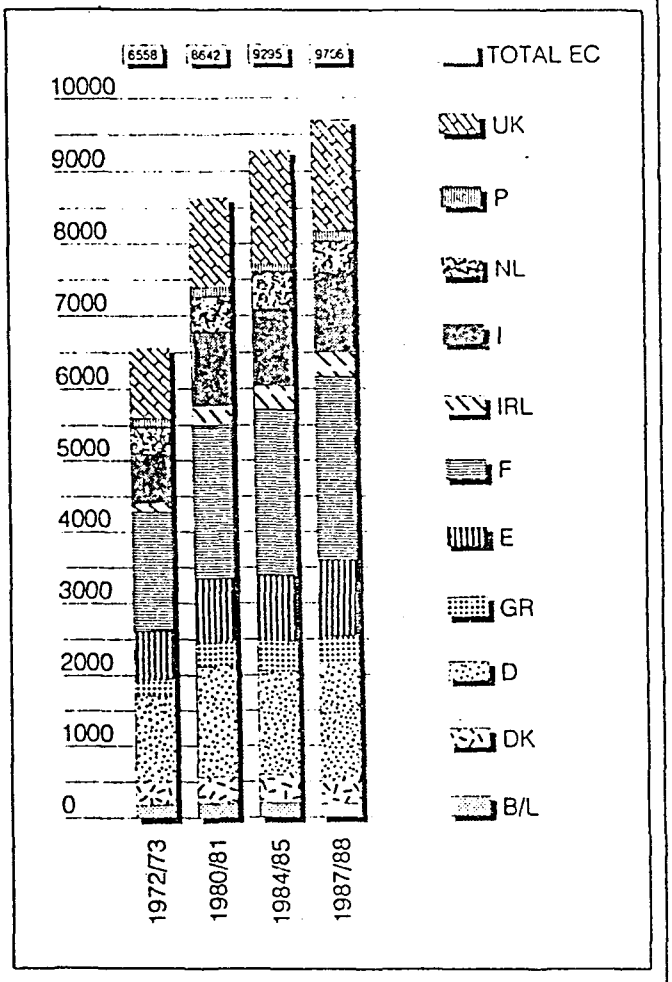


Figure 1.2 Consumption of nitrogen fertilizers

By contrast, the figures indicate a gradual decline in consumption of phosphate fertilizers. Other data showing the long-term trend in the average application rate of nitrogen fertilizer per hectare reveal that it has tripled in the Netherlands, and is growing rapidly in Denmark, the United Kingdom, Germany and Belgium.

At the same time, there has been a considerable growth in the total amount of farmyard manure spread on land; this is due to the increase in livestock in Europe, particularly the high densities of pigs, chickens and cattle in certain regions (Figure 1.3). The chief effect of the increase in consumption of nitrogen fertilizer has been nitrate pollution of water (see section on water). Other effects such as the decline in species of fauna and flora are also recognized: for example, the number of plant species found along hedgerows subject to regular applications of fertilizer is much lower than in those not affected.

Pesticides

About 350 different products (herbicides, insecticides, fungicides, nematicides, etc.) are known to be in use in the Community today. There are major differences in use of pesticides between countries (Figure 1.4); large quantities of herbicides are used in several regions in the north of the Community, reflecting bioclimatic conditions and the type of crop. In the south, fungicide use is more important (vineyards and market gardens). The vast majority of crops are now treated with pesticides. In France, for example, a survey showed that in 1986-87, 86% of cereals were treated with herbicides, 10% with insecticides, 33% with fungicides and 83% of seeds were treated chemically.

Pesticide use has a variety of consequences. There are hazards for farmworkers applying the products, but residues are also found in foodstuffs and drinking water, where they pose a more general human health problem. Agrochemicals have various effects on soils, fauna and flora, most of which are not yet understood. The number of organisms acquiring resistance to the commonly used pesticides is growing, and there are doubts about the long-term effectiveness of the use of agrochemicals to control diseases.

Surveys in a number of Member States have shown that 40 or more products are present in surface or ground water at a concentration of 0.1 mg/litre or over; this is at the limit of what is considered to be acceptable in the drinking water Directive (see section on water).

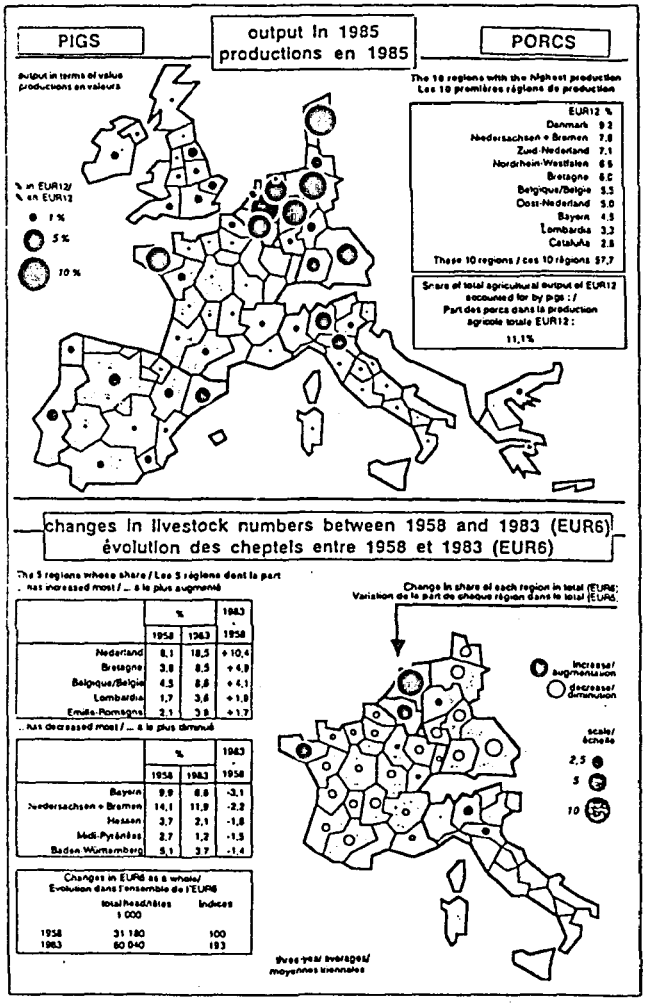


Figure 1.3 Livestock density in Community countries

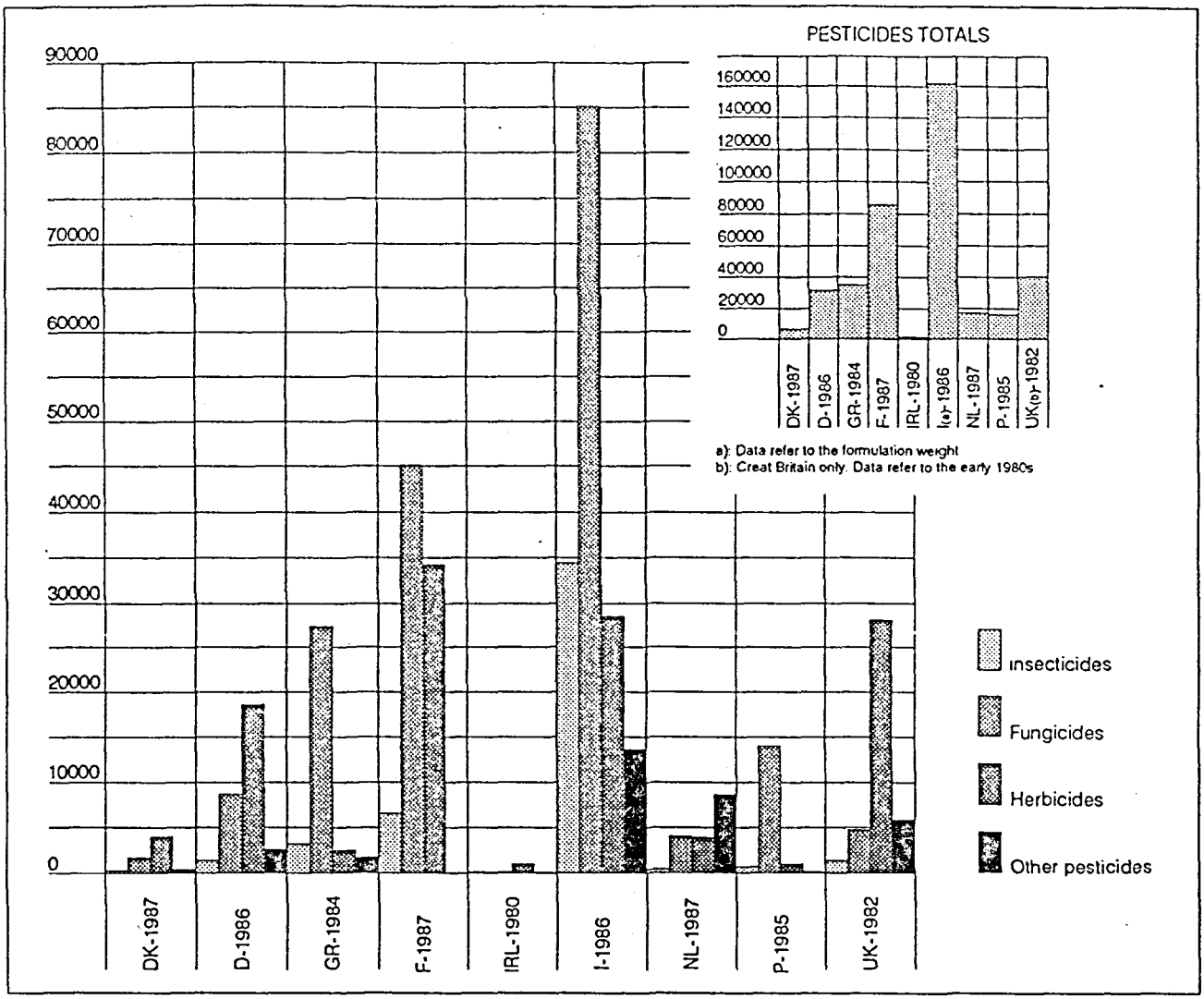


Figure 1.4 Consumption of pesticides in selected Community countries

Organic farming

Organic farming seeks to resolve many of the problems characterizing intensive agriculture: energy consumption, contamination of aquifers, soil erosion and threats to human health and nature. It is not a specific farming practice, but rather it constitutes a global method of studying and making use of complex ecological interactions. Instead of using large amounts of external products, such as chemical fertilizers and pesticides, organic farmers profit from certain natural phenomena and make optimum use on their farm of renewable resources.

Organic farming, for long a marginal activity, has expanded considerably since 1980. While still of minor importance in terms of production volume (Figure 1.5), its impact on society is much greater owing to its methods and concern for the environment.

	B	DK	D	GR	ES	F	IRL	I	L	NL	P	UK	TOTAL
Producers	150	500	2685	-	350	3000	97	800	11	410	34	620	8655
Surface (ha)	1000	7000	54000	-	2800	2000	1500	9000	450	6200	420	15000	117670

Figure 1.5 Situation of controlled organic farming - Estimate 89 for Europe

Agriculture and rural development

The share of the Community's active population working in agriculture currently stands at about 7.7% and the trend is downward. This decline is marked by a strong regional component, with it being estimated that within ten years, 75% of the farming population will live in the Mediterranean region. Rural development must therefore be viewed in a new perspective, and the emphasis of agricultural, environmental and economic development policy placed on developing the potential of each type of rural area in the Community.

The less-favoured areas (Directive 75/268 and Regulation 797/85) today cover about 52% of the 130 million hectares of the Community devoted to agriculture, and account for over half the territory of Greece, Italy, Portugal and the UK.

Forestry

The pressure of demand on forestry resources is much higher in the Community than elsewhere. While the Community may appear to have abundant forest resources, they are insignificant compared with the large producer countries, whether in terms of the wooded area, growing stock or average annual increment. In particular, potential timber production in relation to the population (i.e. in relation more or less to consumption requirements) is significantly lower in the Community.

Leaving aside their limited importance compared with the main producer countries, the Community's forestry resources are characterized by their extreme diversity. First of all, the forestry potential varies greatly from one Member State to another, and in addition there is enormous diversity of production structures, as regards the nature and quality of the stands, the characteristics of the forest owners (63% of the total afforested area is managed by private owners) or the development possibilities (Figure 1.6) depending on whether timber production falls short of, or exceeds, demand.

Three countries produce about two-thirds of the total raw timber harvested in the Community: France, Germany and Spain. There are some striking disparities; Portugal, for example, produces the same amount of raw timber as Spain on an area 4 to 5 times smaller, and three times more than the United Kingdom, which has the same acreage of forests as Portugal.

However, given the great diversity of natural growth conditions, economic, social and political circumstances and rural development trends in the Community, the enormous heterogeneity of the structure of forestry resources can best be appreciated at regional or, indeed, local level. An analysis revealed nine different types of region. Another feature is the highly scattered nature and fragmentation of forests. This is particularly true of private forests, where the average area of the management, production and marketing unit is five hectares.

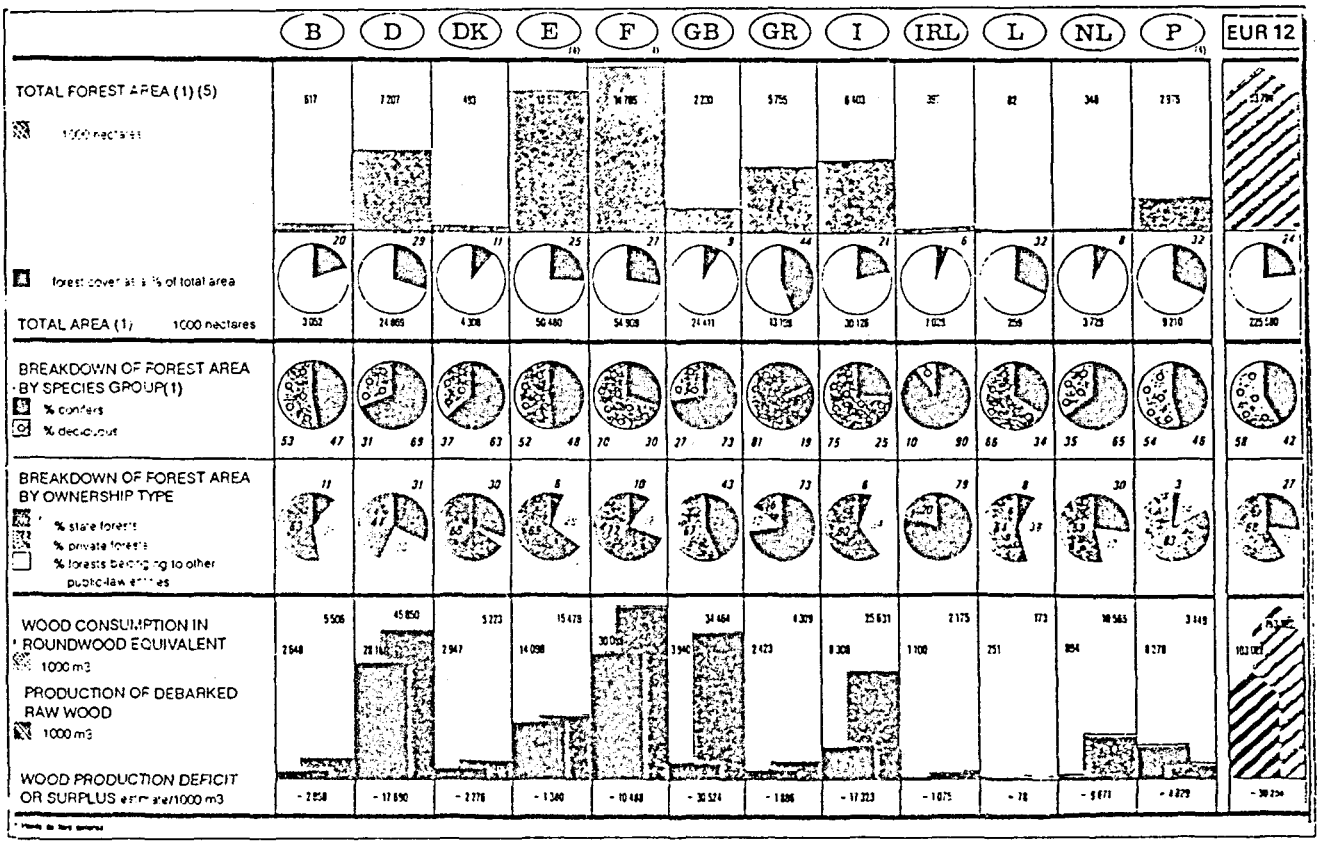


Figure 1.6 Forestry in the Community

Monocultures are an example of forestry intensification in order to meet the needs of industrial society in the 20th century. The species concerned have been used because of their productivity and their suitability for direct planting in open terrain.

However, such unnatural, intensive forestry has environmental repercussions. It has contributed, and is still contributing, to the disappearance of natural and semi-natural habitats (heathland, chalk grassland, riparian meadows, peatlands) and the dependent wildlife (flora, birds, insects, etc.). The remaining sites have become insular, and thus more fragile and threatened. This effect is clear to see but it is much more difficult to evaluate the impact on the quality of soils and their possible degradation.

An example of the effects of forestry can be seen in Portugal, where intensive planting and exploitation of eucalyptus has caused problems of soil erosion and depletion, as well as social problems. Eucalyptus competes with the natural vegetation for water; there are 25 species per are in deciduous forests, 14 species in pinewoods and 10 in eucalyptus stands. Bird species are reduced by three-quarters in summer and almost half in winter. On a different level, exhaustion of soil for short-term production of eucalyptus biomass doubtless constitutes a risk, as young timber removes more nutrients than old timber for the same volume.

Conifers and eucalyptus are also highly flammable, and tourism poses problems in this respect; the litter from eucalyptus plantations is flammable, and fire causes these trees to germinate at the edge of the stands and even beyond. Surveys of fires show that the situation has become critical in the south of France, the Iberian Peninsula and Sardinia (Figure 1.7).

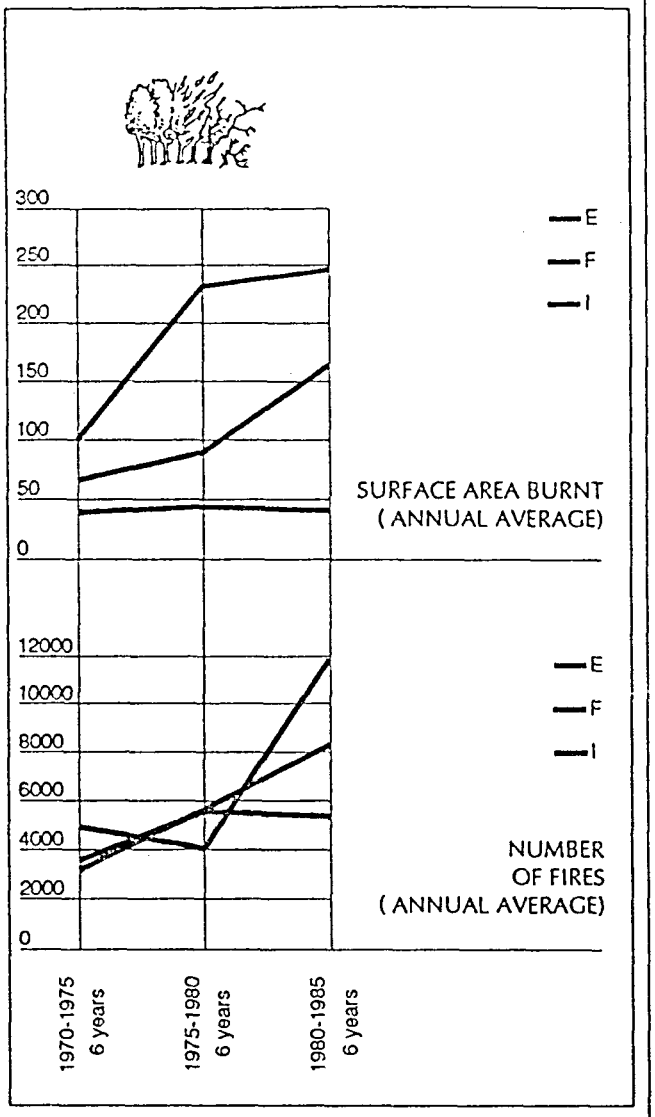


Figure 1.7 Forestry fires and areas destroyed in three Community countries

Fisheries

Seventy per cent of Community fisheries, which rank fourth in importance on a world scale, are concentrated in the north-east Atlantic and 12% in the Mediterranean. Over exploitation of fish stocks has been a problem for some years. It led the European Community to adopt a common fisheries policy in 1983, one of the four priority areas of which concerned conservation, management and access to resources. Current data on fish catches and the fishing fleet show that the present arrangement set up under the common policy has certain limitations and shortcomings.

While total catches (Figure 1.8) remained stable at about 6.5-7 million tonnes between 1973 and 1987, certain developments in the different Member States indicate that pressures on stocks have increased. Countries which traditionally made a large part of their catch outside Community waters have seen a reduction in their total, as fishing limits were extended to 200 miles: this is true of Germany (50% less), Spain, Portugal and the United Kingdom. Conversely, Ireland's catches have practically doubled, reflecting a modernization of its fishing fleet. Denmark, too, has considerably increased its catches.

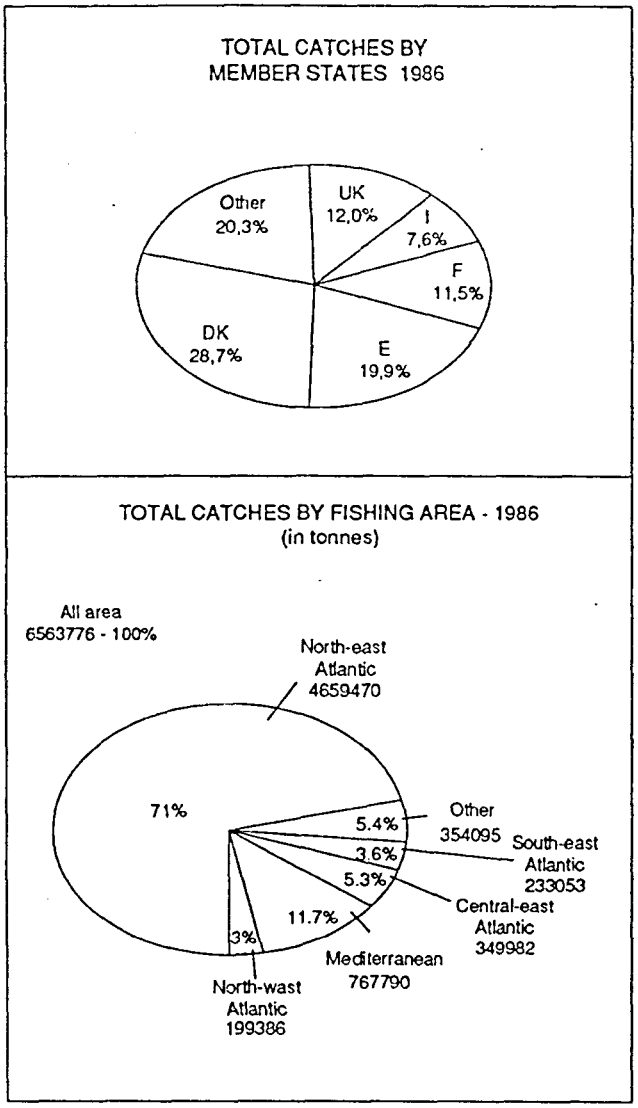


Figure 1.8 Fisheries: total catches

The total horse power of the Community fleets, in kilowatts, as at 1 January 1987 compared with the objective set under the 1983 Structural programme and that established for 31 December 1991.

Member State	Objective of 1983 programme	Situation at 1.1.87	Objevtive for 31.12.91
B	70 656	71 250	69 242
DK	525 825	571 996	515 300
D	161 494	137 000	132 000
GR(1)	457 147	511 127	448 000
E	2 131 412(2)	2 130 156	2 088 783
F	914 000	918 087	895 720
IRL	1 178 939	1 239 132	1 154 600
I(2)	181 200	212 260	177 576
NL	390 080	462 900	382 278
P(3)	500 247(2)	487 240	490 242
UK	763 513	759 953	748 245
CE	7 274 513	7 501 101	7 101 986

(1) Mediterranean fleet only
(2) Estimated
(3) Mainland

Figure 1.9 Characteristics of the Community fishing fleet

These developments have led to a deterioration of all stocks with, for example, exploitation of cod and herring in the North Sea being four times too high; "fish mortality" is therefore excessive with the over-capacity of the fleet being one of the principal causes.

The total number of fishing vessels increased by 38% between 1979 and 1987. A good indicator confirming these trends is the development of the power of the fishing fleet; in 1987, this figure was higher than the maximum limit established in 1983 by the structural programme to prevent exhaustion of resources (Figure 1.9).

This pressure on Community stocks is compounded by a development of fishing techniques, the impact of which may be considerable on the marine environment: examples, despite strict regulations on the subject, are mesh sizes which do not permit selection of catch, enormously long drift nets and irresponsible trawling of the sea-bed which destroys flora and fauna.

Aquaculture

The Community promotes the expansion of aquaculture by providing aid to the establishment, extension or modernization of production units. More than ECU 120 million was spent on this between 1983 and 1988. Estimates show an increase in aquaculture production of 60% for the year 1991 compared with 1983. These figures obscure a high concentration of aquaculture in certain regions. Aquaculture has repercussions both on the environment (wastes) and on resources (high consumption of fish meal).

What does the future hold for fisheries?

An improvement in fisheries structures is essential; for this reason, the Commission adopted a proposal for an amendment to the Regulation on Community measures to improve and adapt structures in the fisheries and aquaculture sector. This Regulation, which entered into force on 1 January 1991, concerns the extension of certain structural measures to small-scale fisheries and the introduction of two new projects relating to redeployment operations and joint enterprises. This represents a first major step towards adapting structural policy to the needs of the common fisheries policy, in particular the crucial need to conserve resources.

2. ENERGY

Energy is a key factor in the economy and society. Its impact on the environment, while doubtless depending on the size of energy demand, is today to a greater extent determined by the manner in which it is produced.

In particular the use of the best technologies available, stemming from the latest research, is the best way to increase energy efficiency and thus to reduce the impact on the environment. In this regard, the foreseen global increase in the consumption of energy, linked to growth in economic activity which is expected as the need to improve energy efficiency and measures to control impacts on the environment.

Development and distribution of energy production and consumption

There has been a constant increase in per capita energy consumption over the last few years, which amounted to 3.7% for the period 1981-89 (Figure 2.1). The figures show a strong growth in total primary energy demand between 1960 and 1987 for the Europe of Nine, with some variations during that time; however, this growth took place before 1980. Significant trends have emerged for the primary energy sources: a slight downward trend for solid fuels (from 23 to 21% of total requirements between 1981 and 1989), a significant drop for fossil fuels (from 53 to 45%), but a steady growth for natural gas (from 17 to 18%) and nuclear energy (from 4 to 14%) (see corresponding sections below).

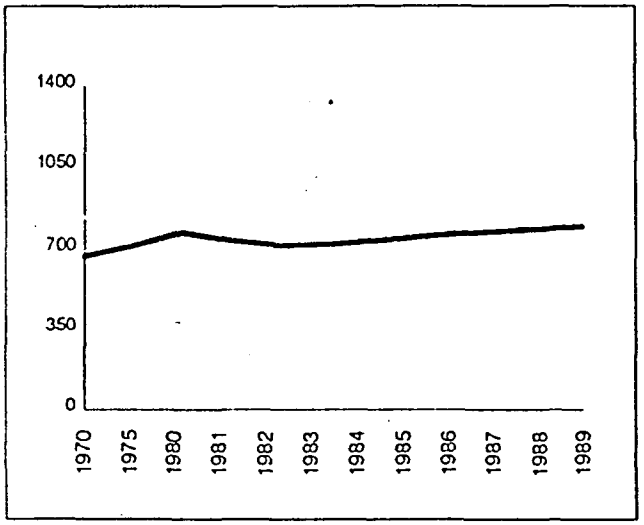


Figure 2.1 Development of energy comsuption (EUR 12 in M toe)

Hydroelectricity (4% of demand in 1987) and geothermal energy (0.2%) have a reduced share, while the share of the other renewable sources (solar, wind) has remained weak There were also changes in total energy consumption and in energy use in the different sectors over the same period (Figure 2.2). The proportion of energy consumed by transport has increased, chiefly because of the development of road and air transport (see section on transport).

	1980	1985	1 987	1989
INDUSTRY	249.5	213.1	231.8	226.2
TRANSPORT	170.4	181.5	198.8	222.4
OTHER	277.4	281.9	289.0	304.2
TOTAL	697.3	676.5	719.6	752.8

Figure 2.2 Final energy consumption by sector in the Community

Energy consumption by industry has tended to diminish as a proportion of overall consumption; however, the steel and chemical industries still account for around 11% of total energy consumption and the proportion of energy consumed by the "domestic and other" sector has grown: in most countries, this sector now accounts for over 40% of total final energy consumption (Greece, Portugal, Luxembourg and Spain about 20%).

Sulphur dioxide (SO2) emissions due to combustion have tended to decline overall, but a large part of these emissions come from a few regions only (see chapter on air). Carbon dioxide (CO2) emissions from these activities, taking the estimated total for 1987 as a basis, are forecast to show a relative increase in the medium term (+ 17% in 2010), unless the stabilization at 1990 levels decided by the Community is achieved.

Electricity production

Electricity accounts for a growing share of final energy consumption which varies according to region and sector. The more rapid economic development of the countries in the south of the Community has led for example to an annual increase of the order of 5% in Spain over the last few years, compared with only 2% in the United Kingdom or the Netherlands.
In the coming years, with demand (mainly from industry) increasing, production will continue to increase (Figure 2.3).

Electricity production also has an important environmental dimension owing to the operation of large power stations, both nuclear and conventional fossil-fuelled. This concern has resulted in a number of measures being taken; the relative reduction in conventional generating capacity in the Community's central regions has generally been accompanied by an improvement in pollution control measures (reduction of dust and SO2 emissions).

However, in 1990 this production was responsible for 31% of CO2 emissions to the air, 63% of SO2 emissions and 22% of NOx emissions. There are national and regional variations in SO2 emissions, depending on the fuels used; in France, less than 30% of SO2 emissions are due to electricity generation, as nuclear power is predominant.

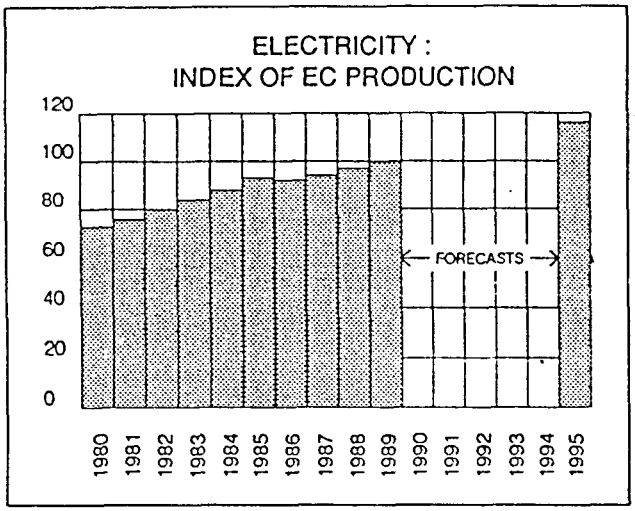


Figure 2.3 Development of Community electricity production

Fossil Fuels

The use of fossil fuels (responsible for emissions) is increasing at a lower rate than total primary energy needs of the Community (see figure 2.4).

Coal and Oil

Without adequate control by appropriate technologies, the combustion of coal and oil produces the highest emissions of sulphur dioxide and nitrogen oxides. In addition, solid fossil fuels produce the greatest emissions of carbon dioxide per unit of energy consumed.
The exploration and production of oil could cause accidental oil spills, explosions and fires. The transport and storage of raw and refined products can cause oil pollution at sea or on land as well as emissions of unburnt hydrocarbons and volatile organic compounds (see refineries, page 66). Oil refining principally affects the environment through the production of waste water and the emission of different pollutants to air.

Natural gas

Natural gas is a fuel which can be substituted for oil as an energy source and which is considered relatively clean (in terms of NOx and CH4 emissions) at all stages of production, distribution and consumption. However, the risk of leaks at these different stages represents a possible hazard on a potentially large scale (particularly explosions or release of volatile organic compounds).
The share of natural gas in gross energy consumption at Community level amounted to 19% of the total in 1987; however, the increase since 1983 (1.5%) has been fairly small. Gas consumption is planned to increase within a regular range (Figure 2.4), although numerous unknowns (including long-term volume of electricity consumption) make it difficult to predict the policy to apply in ten years time.
The use of natural gas varies greatly according to country, its share ranging from 4% in Spain to 52% in the Netherlands. With the exception of Ireland, all Member States have increased their consumption (Figure 2.5).

	1980	%	1987	%	1995	%	2000	%	2010	%
Combustibles solides	235	26	230	27	247	26	275	28	322	31
Pétrole	494	54	419	49	480	50	466	47	428	42
Gaz	184	20	207	24	236	24	250	25	276	27

Figure 2.4 Evolution in the use of fossil fuels in the Community (Mtep)

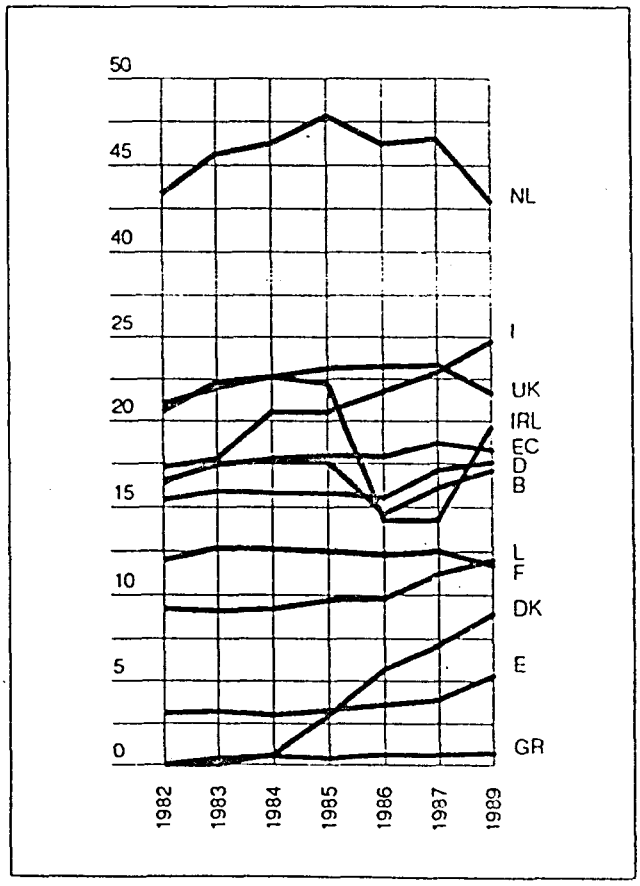


Figure 2.5 Share of natural gas in gross domestic consumption

Nuclear energy

In 1988 nuclear energy accounted for 14% of final energy consumption and 34% of electricity generation in the Community. Accounting, as it does, for 25% of primary energy production, nuclear energy is also the largest "single" source of energy produced in the Community; however, there are large differences between Member States: in France and Belgium, 70% of electricity is generated by nuclear power stations, while Denmark, Greece, Ireland, Italy, Portugal and Luxembourg do not use nuclear energy.

The Mediterranean regions of the Community are experiencing large relative and absolute growth in conventional power generation, but have scarcely any nuclear power, with the exception of Spain; Italy has even decided to close its first small nuclear power stations. The short-term forecasts anticipate a slight increase in the share of nuclear power in electricity production at Community level, with France making up a very large part of this development (Figure 2.6).

Installed nuclear power capacity and share in electricity production

	1988		1990		1995	
(GWe)	Capacity	(Share-%)	Capacity	(Share %)	Capacity	(Share)
EC	101.3	33.9	106.4	35.0	110.6	36.5
Belgium	5.5	65.5	5.5	65.0	5.5	62.0
FR of Germany	21.5	34.0	23.0	35.0	23.0	33.0
Spain	7.6	36.1	7.6	38.0	7.6	34.0
France	52.8	69.9	56.3	76.0	61.6	79.0
Netherlands	0.5	5.2	0.5	5.0	0.5	5.0
United Kingdom	13.4	19.3	13.5	21.0	12.4	20.0

Figure 2.6 Installed nuclear capacity and share in electricity generation

Renewable Energy

One of the objectives of Community energy policy is to increase the role of renewable energy, even if in the medium term this is unlikely to exceed 8% (of total production).
A particular effort will be made to limit the possible environmental impacts of these energies.

Trends

With regard to the development outlined above, account must be taken of major regional differences within, and also outside, the Community when considering responsibility and measures (see section on "climate change").

The economic growth which will follow from the opening up of the single market may have a variety of effects on the energy/environment equation. According to the Commission, several types of scenario can be envisaged for the coming years (shown in Figure 2.7, which gives the scenario for 2010 taking 1990 as the base year). The environmental impacts of using fossil fuels are above all diminished by energy efficiency measures which reduce energy consumption relative to gross national product. The relationships between energy consumption and emissions to the air have scarcely changed. With the exception of sulphur dioxide emissions, there is little improvement in the situation compared with 1990. The slight progress that has been made is due mainly to the increase in nuclear power.

It is clear on reading these scenarios that the stabilization of CO2 emissions at their 1990 level decided by the Community will not be possible without controlled measures. The Commission has therefore presented a package of measures which includes improvement of energy efficiency and replacement of fuels, with support for renewable energy sources. These measures comprise a combination of regulations, information and training activities and a proposal for a new combined energy and carbon tax.

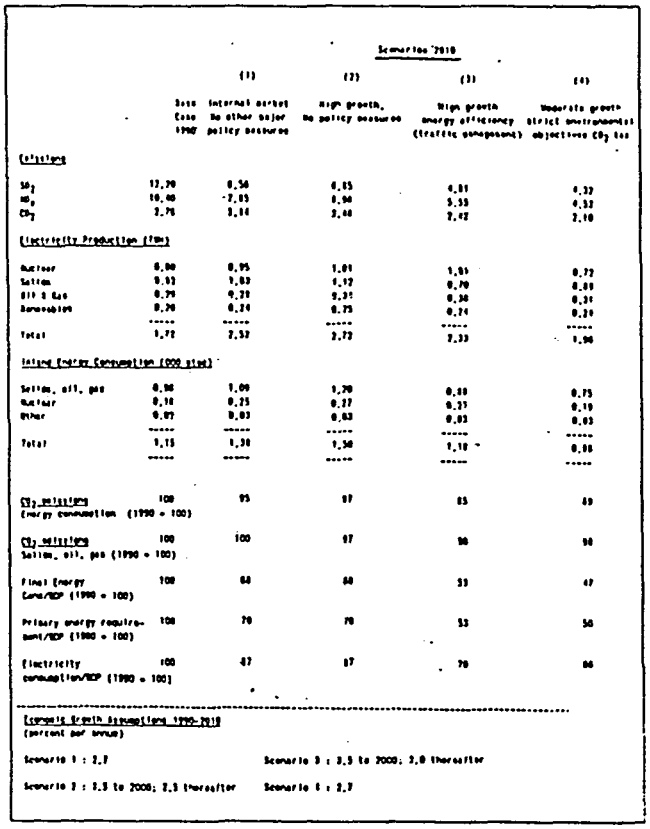


Figure 2.7 Energy scenarios and impacts on policies

3. INDUSTRIAL ACTIVITY

The situation in certain industrial sectors is described in the following subsections. Sectors considered environmentally significant in terms of their production capacity and intensity of environmental impact are discussed (Figure 3.1). This survey is neither exhaustive nor complete, owing to the lack of reliable data.

SELECTED INDUSTRIAL SECTORS	RAW MATERIAL USE	AIR	WATER RESOURCES	LAND RESOURCES	SOLID WASTE	NOISE	RISKS OF ACCIDENT	OTHER IMPACTS
MICRO-ELECTRONICS	Chemicals (e.g. solvents) and/or	Toxic gases		Contaminations of soils and ground water by toxic chemicals (e.g. chlorinated solvents) Accidental spillage of toxic material				
PETRO-CHEMICAL REFINERIES	Inorganic chemicals	Major pollutant: SO_2, HC, NO_x, CO, particulates, odours	Cooling water BOD, COD, oil, phenols, chromium, effluent from gas scrubbers		Sludges from effluent treatment, spent catalysts, tars		Risk of explosions and fires	Risk of accidents noise, visual impact
CHEMICALS	Inorganic and organic chemicals	Major pollutant: organic chemicals (benzene, toluene), odours	Organic chemicals, heavy metals, suspended solids, COD, cyanide		Major pollutant: sludges from air and water pollution treatment, chemical process wastes		Risk of explosions, fires and spills	Exposure to toxic substances, potentially hazardous products
IRON AND STEEL	Iron ore, limestone, recycled scrap	Major pollutant: SO_2 particulates: NO_x, HC, CO, hydrogen, sulphide, acid, mists	Process water BOD, suspended solids, oil, metals, acids phenols, sulphides, sulphates, ammonia, cyanides, effluents from wet gas scrubbers		Slag, wastes from finishing operations, sludges from effluent treatment		Risk of explosions and fires	Accidents exposure to toxic substances and dust, noise
NON-FERROUS METALS (e.g. aluminium)	Bauxite	Major pollutant: CO, SO_2 particulates	Gas scrubber effluents containing fluorine, solids and hydrocarbons		Sludges from effluent treatment, spent coatings from electrolysis cells (containing carbons and fluorine)			
TEXTILES	Wool, synthetic fibres, chemicals for treating	Particulates, odours SO_2, HC	Process water BOD, suspended solids, salts, sulphates, toxic metals		Sludges from effluent treatment	Noise from machines		
LEATHER	Hides, chemicals for treating and tanning		Process water BOD, suspended solids, sulphates, chromium		Chromium sludges			

Figure 3.1 Environmental impact of certain industries

In a changing soci-economic context, the environment is a competition factor influencing overall management of enterprises. Environmental protection has therefore become a fully-fledged market sector (there are large differences between Member States in this area, the German environmental market being larger, for example, than the French and British markets combined: see section on economic aspects).

In geographical terms, the dynamics of industrial activity can be equated, from an environmental point of view, with intensity and location of production. Intensity has a multiplying effect on potential or real impact, and location involves land use and a measure of regional planning in order to establish the operational and communications structures necessary (transport, services, employment, water supply, etc.). Relocation of production therefore has an important role in this field and can also have retrospective effects on the environment, e.g. abandoned industrial sites (see section on quality of life).

Refineries

The United Kingdom continues to account for the larger part of Community oil production (82%) through exploitation of North Sea resources (92% of Community production came from offshore oil fields in 1988, compared with 87% in 1980). However, the other Community countries increased their production by 98% during the same period, which is partly explained by the increase in the number of wells drilled (Figure 3.2). Consumption, for its part, declined by about 15% between 1980 and 1985 before increasing again at the end of the 1980s (Figure 3.3).

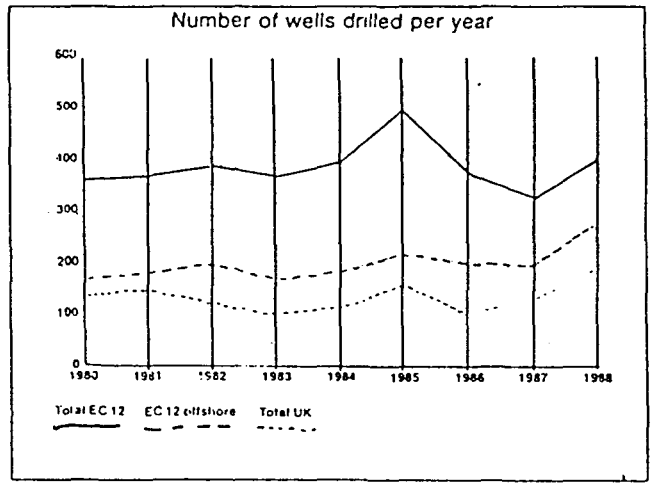


Figure 3.2 Development of oil drilling in the Community

	Oil		
	Mil. tonnes		%
	1980	1989	% change
France	109.9	88.4	-2.4
Germany	131.1	107.4	-2.2
Italy.	97.9	94.3	-0.4
Spain	52.2	46.6	-1.3
UK	80.8	81.2	0.1
Benelux	65.2	57.4	-1.4

Figure 3.3 Petrol consumption

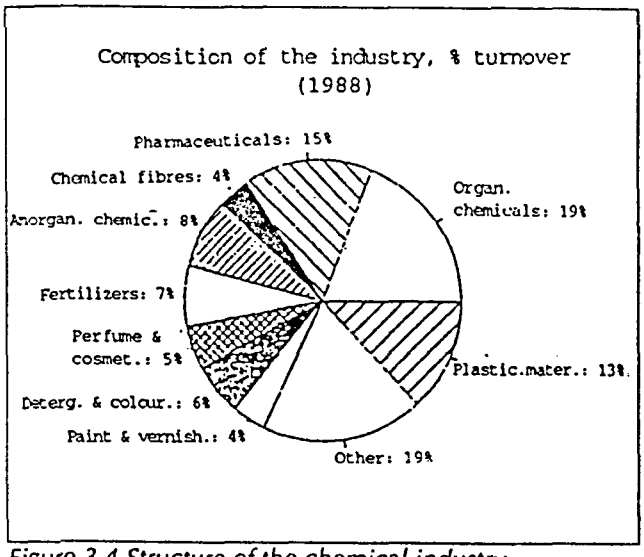


Figure 3.4 Structure of the chemical industry

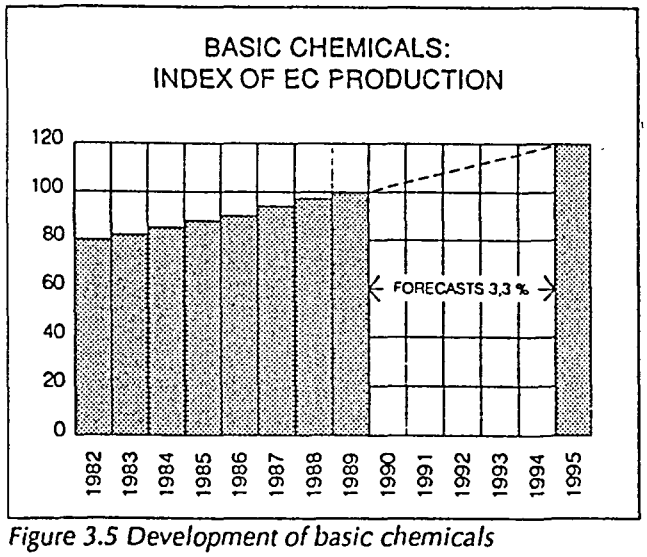


Figure 3.5 Development of basic chemicals

It is interesting in this connection to consider the development of refining and petrochemical activities (which are linked for technical reasons). Apart from the air pollution considered in the section on energy, they also take up a great deal of space and involve significant technological hazards. From the geographical point of view, the development of exploitation of the North Sea basin has added to the maritime bias of the industry and helps to explain the considerable expansion of its activities on highly crowded estuary sites at the mouth of the Scheldt, Meuse and Rhine.

A relative, limited shift of refining towards inland areas can be seen where a variety of conditions coincide: route of large trans-European crude oil pipelines, significant distance from major oil ports and the presence of dynamic, modern, industrial zones. This is the case in Baden-Württemberg and the Rhône-Alpes region. There is also a relative shift towards coastal Mediterranean sites, affecting Spain, Portugal, Sardinia, Sicily and Greece.

Chemical industry

The chemical industry ranks third among manufacturing industry in the Community, representing almost 10% of value-added in 1988 and showing annual growth of about 3.5%. The main sectors of activity cover a large category of products, illustrated in Figure 3.4, many of which may pose a serious threat to the environment by reason of their intensive use (e.g. solvents, fertilizers). By 1995, the industry's growth rate (average 3.3% per annum) will be lower than in the past, but still somewhat higher than demand (2.9%)(Figure 3.5).

The production and consumption trends over the last few years for some products are summarized below:

- fertilizers and nitrogenous compounds: increase in production (10% between 1980 and 1988) and an increase in consumption of over 2% per annum since 1980. Their use in agriculture has resulted in nitrates in water and cadmium in soil (see section on agriculture, same Chapter; section on water; section on soil);
- plastics and synthetics: increase in production (40% between 1980 and 1988) which will continue at an average annual rate of 4.5% until 1995;
- pesticides and other agrochemicals: an increase in demand of 2% per annum is forecast. Research in this sector is aimed at developing products which are less harmful to the environment.
- paints (Table 7), varnishes and coatings, inks and mastics: production and consumption stable. There is an increase in the use of "environment friendly" pigments;
- perfumes, cosmetics and toiletries: sales increased by 27% between 1985 and 1989.

There are at least 9 000 chemical companies operating in the Community, 7 of which are among the world's largest. The European Community accounts for almost 30% of the world chemical industry, whence the need for strict precautions and careful monitoring of the effects of chemicals on human health and the environment; there are currently 7 million known chemical substances in the world, 100 000 are on the market and nearly 1 000 are put on the market each year. In the Community, 300 million tonnes of chemicals are transported in the course of one year, over 50% of them by road.

These products are also being increasingly used by a growing number of consumption and production sectors (pharmaceuticals, solvents, lubricants, etc.), and if the trend resulting from progress in organic chemistry and the processing industries continues, it is estimated that 50% of the products that will be used in 15 to 20 years do not yet exist. This poses the question of whether it will be possible to have sufficient information on their toxicity and risk potential, since, if all the laboratory resources currently available were used, it would only be possible to test 500 products each year, even assuming the necessary sums were made available. The Community legal instruments already in force or due to be adopted shortly constitute elements of a monitoring policy based on three complementary principles:

- identification and inventories of substances placed on the Community market (Directive 67/548/EEC). The number of notifications received since 1981 (entry into force of the Directive) has shown a constant, rapid increase, reaching 1 370 in October 1991 (Figure 3.6). A new proposal should be adopted shortly providing for the systematic collection of data on the 100 000 existing substances on the market prior to 1981;
- hazard evaluation: a recent adaptation of Directive 67/548/EEC to technical progress (to which should be added Directive 88/379 on preparations) introduced criteria for classifying substances on the basis of the hazard they may present to the environment. According to preliminary estimates between 40 and 45% of new substances will be classified in this category. Classification forms the basis of the whole Community system for the management of chemical substances;
- risk evaluation and control measures, such as restrictions on or total prohibition of use, and the establishment of emission limit values

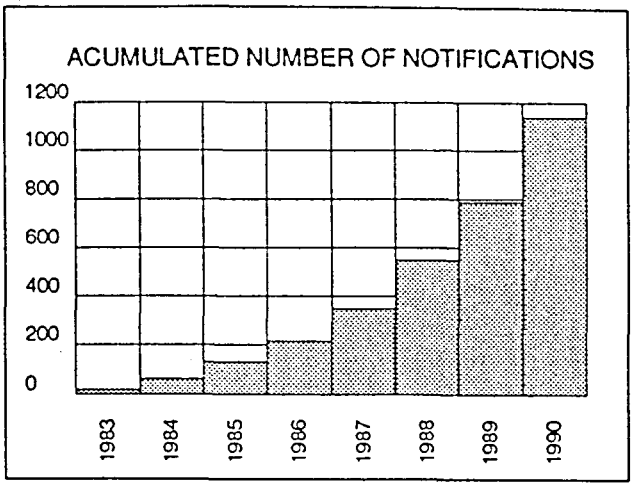


Figure 3.6 Cumulative number of notifications

Steel industry

Following a substantial decline at the beginning of the 1980s, steel production and consumption started to rise again after 1985; in 1987 scrap recycling accounted for 45% of total steel production. However, production is likely to decline again slightly in the coming years (Figure 3.7).

Final consumption of steel (1)
(Crude steel equivalent)

(million tonnes)	1980	1981	1982	1983	1984	1985	1986	1987
Final consumption	97.8	89.0	84.5	82.3	85.0	85.6	97.4	97.7
Cons. per capita (kg)	362.0	328.0	311.0	303.0	313.0	315.0	302.0	301.0
Direct net exports	15.8	20.4	11.3	11.8	16.8	18.8	15.5	17.4
Indirect net exports	15.0	20.3	17.4	16.2	17.5	16.3	14.3	12.3
Stock variation	-0.7	-3.4	-1.6	-0.6	1.0	0.2	-1.3	-1.2
Scrap cons.in rolling mills	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2
Total Community production	127.7	126.1	111.4	109.5	120.1	120.6	125.6	126.0

(1) 1980 EC 9, 1981-85 EC 10

Source EUROSTAT (Sidr)

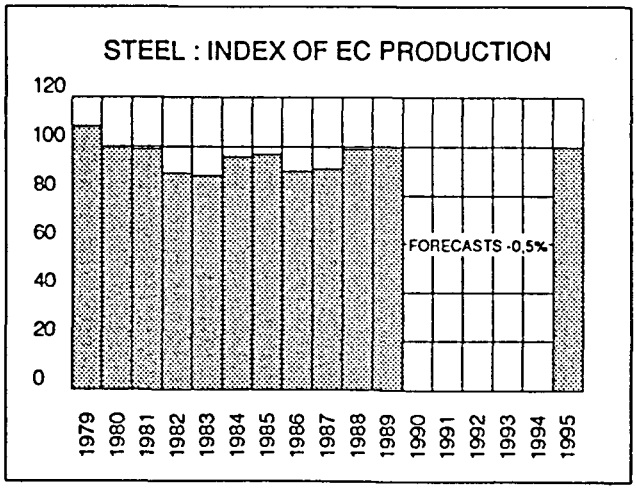


Figure3.7 Final consumption of steel in the Community

The decline of the old steel industries in the interior of north-west Europe clearly alleviates air pollution problems in densely populated areas where steelworks were sited in the middle of housing zones, but it also creates problems of rehabilitating industrial wastelands, which are often made worse by abandoned spoil tips.

This decline contrasts with the development of the steel industry on the continental coastline of the North Sea and, more particularly, of a Mediterranean steel industry also, for the most part, in a coastal location. This movement of the steel industry to coastal areas involves consumption of enormous areas of the coastal belt, due to the huge dimensions of the installations and the storage areas planned to receive the cargos of bulk ore carriers. However, it is also due to overdimensioning of reserved zones, in particular since the expected knock-on effects of the Mediterranean steel industries, regarded as development foci at the time of planning, have fallen short of expectations. In place of the hoped-for local development upstream of the steel industry, it is not rare to see two-way shipping traffic unloading ore and coal and loading semi-finished products. In terms of industrial history, it could be argued that this migration of the steel industry to the coast will be no more than an intermediate stage between its traditional association with coal-mining in the old-established industrial regions and the transfer of production of semi-finished products to the developing countries.

Tanneries

European tanneries show a high geographical concentration. 90% of tanneries are located in the south of the Community with Italy, which has about 3 000 of the 4 300 Community tanneries, well ahead of Spain (8%) and Portugal. The tanneries in these regions are mainly located along the coasts (Valencia, Catalonia, Tuscany, Campania, Veneto). Water pollution by chromium used in the production process represents the main hazard of this activity.

While the standard of pollution-control measures may appear relatively high in the producer countries, the fabrication in other regions of intermediate products (semi-finished leathers such as "wet blue") which are subsequently re-exported to the producer countries shifts the pollution problem to those regions where levels of protection are frequently lower or non-existent, and where limited technologocal resources prevent adaptation to standards.

This is an important fact in an industry where production of hides and skins is steadily increasing (Figure 3.8). It illustrates the complexity and interrelatedness of the difficulties to be solved when Community directives impose limits on the presence of certain chemicals (such as pentachlorophenol) in surface waters and of insecticides such as HCH. As regards HCH, for example, tanneries use it indirectly as it is present in the skins they treat which are frequently imported from other countries.

Cement works

Cement production, in decline for 10 years, is a heavy energy consumer, with consumption varying by a factor of 2 depending on the country in which it takes place (mainly Italy and France). In the last few years, the cement industry has devoted 15% of its total investment to new technologies (dust filters) to reduce emissions to the air.

Mining

For many years the quantity of raw materials extracted in the Community, has been declining, and more recently, with the accession of Spain and Portugal has levelled off.

Community production by type of hides and skins (1)

(million ECU)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Cattle and calf	159.2	162.8	169.3	176.4	186.2	181.0	187.4	191.1	188.5	186.5	185.1
Sheep and goat	100.6	106.1	116.6	115.7	128.9	135.4	120.5	115.4	109.2	106.1	103.0
Others (2)	6.5	5.5	6.2	5.5	6.5	8.3	6.0	4.9	4.8	4.8	4.3

(1) 1989-90 Cotance forecasts
(2) Excluding Germany

Source Cotance

Figure 3.8 Community production of hides and skins

Production above all of copper, zinc, lead and bauxite diminished during the 1980s, with only very few mines left in the Community.

Wood pulp, paper and board (Figure 3.9)

This sector has grown by almost 3% per annum since 1984, a trend likely to continue (Figure 3.10). While the Community appears to be self-sufficient in timber at current pulp production levels, it will be difficult to sustain the planned expansion of this production without intensification of forestry or increased timber imports, particularly of logs from tropical forests (see section on global issues). In addition, it is to be feared that forests already exploited will be utilized more intensively and plantations for fast-growing species (e.g. eucalyptus) extended in Spain and Portugal will be generally intensified (see section on forestry in this chapter).

Country	Wood pulp	Newsprint	Other paper and board	Total
EUR 12	1	2	3	2+3
Belgium	356	96	835	931
Denmark	65		155	155
Germany (FR)	1945	746	8970	9716
Greece	21 (1)	15 (1)	256 (1)	271 (1)
Spain	1298 (1)	134 (1)	2423 (1)	2557 (1)
France	2016	304	5272	5576
Ireland				37
Italy	591	212	4430	4642
Luxembourg	-	-	-	-
Netherlands				2039
Portugal	128			
United Kingdom	395	449	3476	3925

Figure 3.9 Wood pulp, paper and board

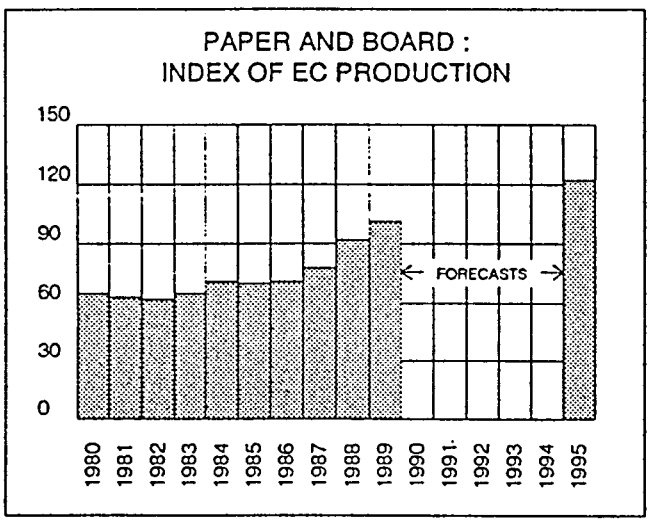


Figure 3.10 Dvelopment of paper and board production

The paper recycling rate in the industry increased from 32% in 1980 to 36% in 1986, while paper production increased by 35% over the same period.

4. TRANSPORT

Transport is more than just an economic activity. A few figures may suffice to illustrate this: 7% of Community GDP, 7% of jobs, 40% of public investments and almost 30% of energy consumption. In addition, since these indicators are generally measured in terms of direct contribution to GDP, they do not take account of the other activities resulting from transport (services and manufacturing), nor do they measure transport's primordial role in the overall functioning of modern societies. The environmental effects are summarized in Figure 4.1, which shows that the impact of transport on the environment is varied and complex; it can be exacerbated when the operational conditions of the various transport modes deteriorate owing to an inadequacy of infrastructures compared with traffic (congestion). However, irrespective of the traffic volume, transport infrastructures have a permanent impact. The impact ranking (Figure 4.1) shows that the road transport modes (and road transport infrastructures) have a greater impact than the other forms of transport, not only because the road transport modes are more heavily used but also because of their more intensive unit impact (by tonnes/km or travellers/km). However, with regard to the information contained in this table, caution is called for in comparing the columns for a given mode of transport, since it implies value judgments on the relative importance of each environmental component; nevertheless, it can be concluded that air pollution, land use and health and safety are the environmental aspects most affected by the transport sector. Finally, it is important to note that the same causes occurring in different places will not generally have the same effects or be of the same intensity. This may be due to climatic conditions (Athens is often given as an example), ecological or occasionally cultural factors. This is discussed in the following sections.

Transport and environment - impact typology

	Air pollution	Water pollution	Land and forests	Health and safety
Permanent impact			Land use disruption of landscape and habitats	
Operational impact	Emissions of CO and other gree house gases, particulates, HC2 etc.	Spillage culates	Acid rain, partiharmful effects	Accidents, noise and vibrations of emission
Impact risk (due to playload)	Spillage of dangerous substances	Spillage of danferous substances	Spillage of dangerouse substances, fire risk	Toxic leaks, risk of fire and explosions
Congestion	Compared with the purely operational impact, congestion has a greater impact in terms of time loss and reduced energy efficiency			

Impact ranking by environmental component and transport mode

	Air pollution	Water pollution	Land use	Health and safety
ROAD	•••	•	•••	•••
RAIL	• (a)		••	•
WATERWAYS		••	•	
SEA	•	•• (b)	•	
AIR	•(c)		•	•

Key: *slight impact ** significant impact *** serious impact empty box, very slight impact
(a) Plus the danger of transferring the problem to the electricity production sector
(b) The impact may become serious in the event of an accident
(c) The environment effects of mobile sources at high altitudes are still little known

Figure 4.1 Transport and the environment. Impact typology

Transport is the principal source of emissions of gases and polluting substances to the air. Transport is responsible for 22% of CO2 emissions to the air, 4% of SO2 and 57.7% of NOx (see section on air). Maritime transport, for its part, is responsible for a considerable proportion of marine pollution (see section on water); the figures showing SO2 emissions from traffic on the busiest shipping routes (Channel/North Sea) gives a good idea of how much this transport mode contributes to air pollution (Figure 4.2), and above all gives an indication of the pressures weighing on the coastal areas in this region.

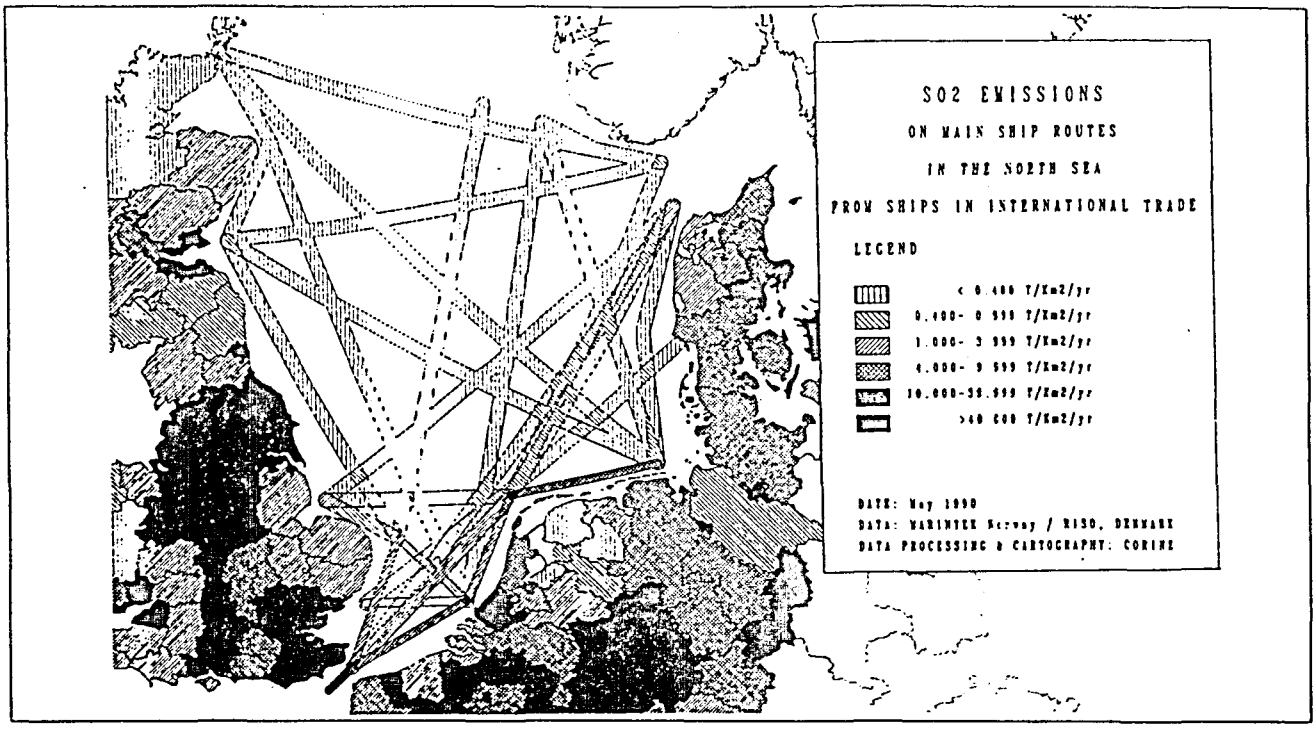


Figure 4.2 SO2 emissions by ships

On average, road transport in the Community is responsible for half the pollution of the air by nitrogen oxides. There was a substantial expansion of the number of vehicles on the road between 1970 and 1987, even in countries which already had a high vehicle density. If we assume that this density will stabilize slightly above its current level in the countries with the highest vehicle ownership (0.5 vehicles/person), we would, with technology remaining constant, witness a substantial increase in NOx pollution in countries with the lowest emissions at present (Figure 4.3); this scenario assumes that the relationship between the number of cars and heavy goods vehicles will remain constant and that the rate of demographic growth will be very moderate.

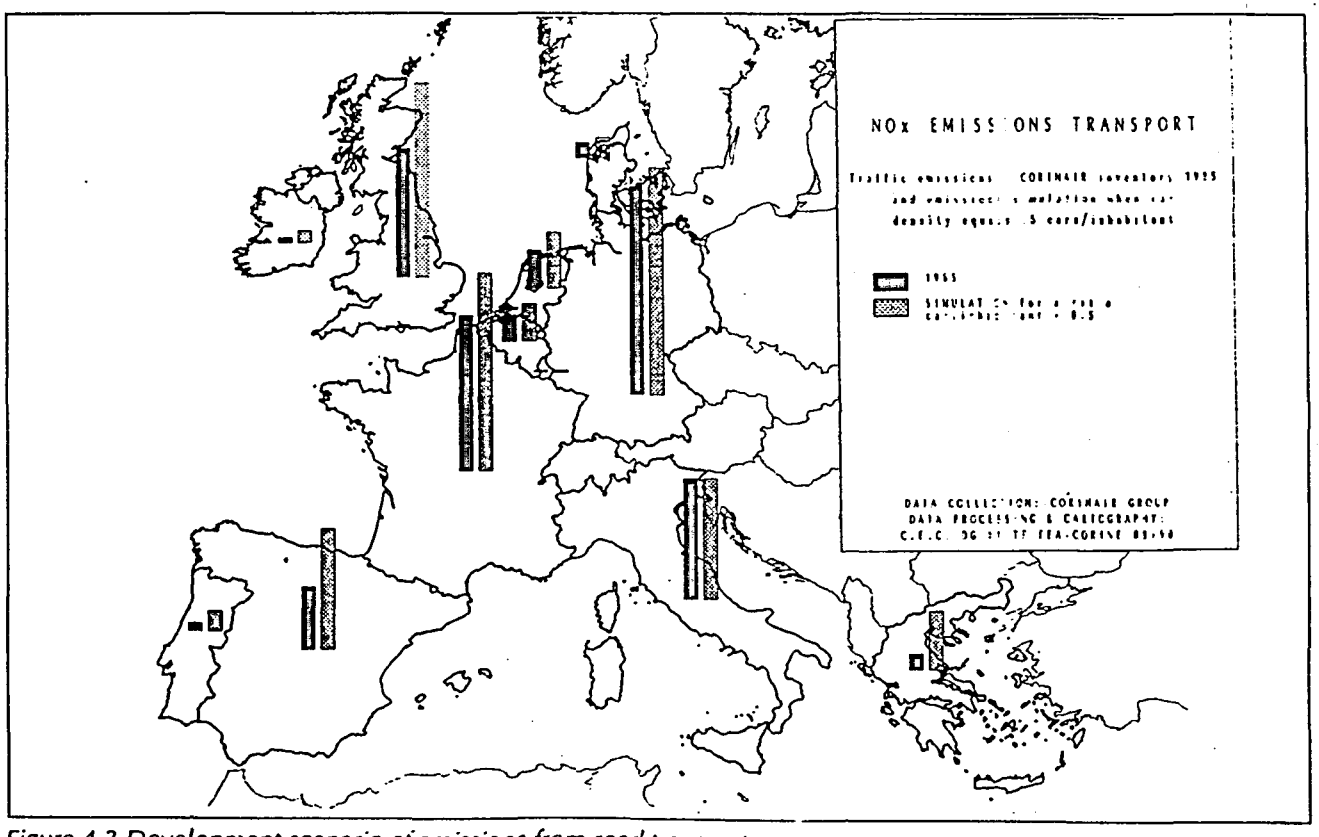


Figure 4.3 Development scenario of emissions from road transport

Taking the Community as a whole, which obscures regional disparities, the global scenarios show a very slight decline in NOx emissions but a substantial increase in CO2 and SO2 emissions (Figure 4.4).

Scénario	1987	1995	2000	2010
Conventional wisdom scenario				
CO^2	100	117	121	125
NOx	100(a)	101	81	86
SO^2	100(a)	128	135	143
Sustaining high economic growth scenario				
CO^2	100	126	121	76

(a) 1986

Note: see table 2.4 for relative importance of each type of pollutant

Source: CEC DG XVII, Energy 2010 (1989). See Annex 2 for a description of the alternative scenarios

Figure 4.4 Development scenario of CO2, NOx and SO2 emissions from energy consuption

The emissions are closely linked to energy consumption; in 1987, the transport sector consumed 28% of the energy balance at Community level (compared with 20% in 1973), only 2.8% of which was in the form of electricity, the remainder being oil products. Road transport was responsible for 84% of the total energy consumed by the transport sector, a percentage which has scarcely changed since 1973. The energy production sector itself is responsible for almost 40% of total CO2 emissions, and there is no technology currently available capable of breaking this link between C02 emissions and energy consumption. It has been estimated (by Commission departments) that a rapid introduction of the most energy-efficient vehicle would reduce specific energy consumption per kilometre by 50% in the year 2010, which would be reflected in a similar reduction of CO2 emissions from road transport. However, these estimates must be viewed with extreme caution, particularly as regards the development of the number of vehicles on the road.

With regard to pollution by lead, which is contained in motor fuels, it is interesting and encouraging to note a steady, sometimes very rapid development in the number of retail outlets distributing unleaded petrol in the various Member States, even though there are still substantial differences (Figures 4.5 and 4.6). These differences give rise to problems in the case of transfrontier journeys.

Number of retail outlets distributing unleaded gasoline (at year's end)

	1986	1987	1988	% of all retail outlets	Estimates for summer 1989
Belgium	50	105	700	15	3 500
Denmark	900	2 000	2 930	90	2 900
FR of Germany	13 000	19 200	18 658	100	18 500
Greece	50	215	215	4	230
Spain	65	82	98	2	100
France	89	330	1 200	4	4 000
Ireland	0	30	400	13	400
Italy	72	1 258	5 120	15	5 200
Luxembourg	21	179	375	94	380
Netherlands	7 500	7 500	7 300	100	7 300
Portugal	0	35	50	3	50
United Kingdom	174	715	4 157	21	10 000

Figure 4.5 Number of retail outlets for unleaded petrol

(%)	1986	1987	1988	Sales volume 1988 (5)
Belgium	.1	.2	.5	1.0
Denmark	10.3	29.7	33.0	663.0
FR of Germany (1)	10.9	25.7	44.5	15 430.0
Greece	0.0	0.0	0.0	0.0
Spain	0.0	0.0	.1	20.0
France	0.0	.1	.2	64.0
Ireland	0.0	0.0	0.0	.2
Italy	0.0	.2	.7	113.0
Luxembourg (2)	1.0	1.8	10.2	44.0
Netherlands (3)	15.3	20.4	26.0	1 170.0
Portugal	0.0	0.0	0.0	0.0
United Kingdom (4)	0.0	.1	1.1	343.0

(1) March 1989 — 54%.
(2) February 1989 — 15.6%.
(3) January 1989 — 31.3%.
(4) February 1989 — 5.7%.
(5) 1 000 m^3.

Source: National sources.

Figure 4.6 Share of unleaded petrol in total sales of motor fuels

In the case of noise, of which transport remains the principal source, a significant proportion of the Community population is exposed to noise levels in excess of 55 decibels. Although exposure to intolerable noise (black spots) is declining, more people now live in areas where noise levels are unsatisfactory (grey areas). While some action has been taken (anti-noise walls along major urban roads, underground trains in suburban areas), the overall situation is not improving (see section on quality of life).

Infrastructures

In December 1990 the European transport ministers adopted the outline plan for the high-speed rail network. This provides for the construction of some 9 000 km of new track by 2020, the adaptation of 15 000 km of existing lines (in particular to create or extend closed security zones or to diminish track curvature) and the modernization of 12 000 km of network interconnections (Figure 4.7).

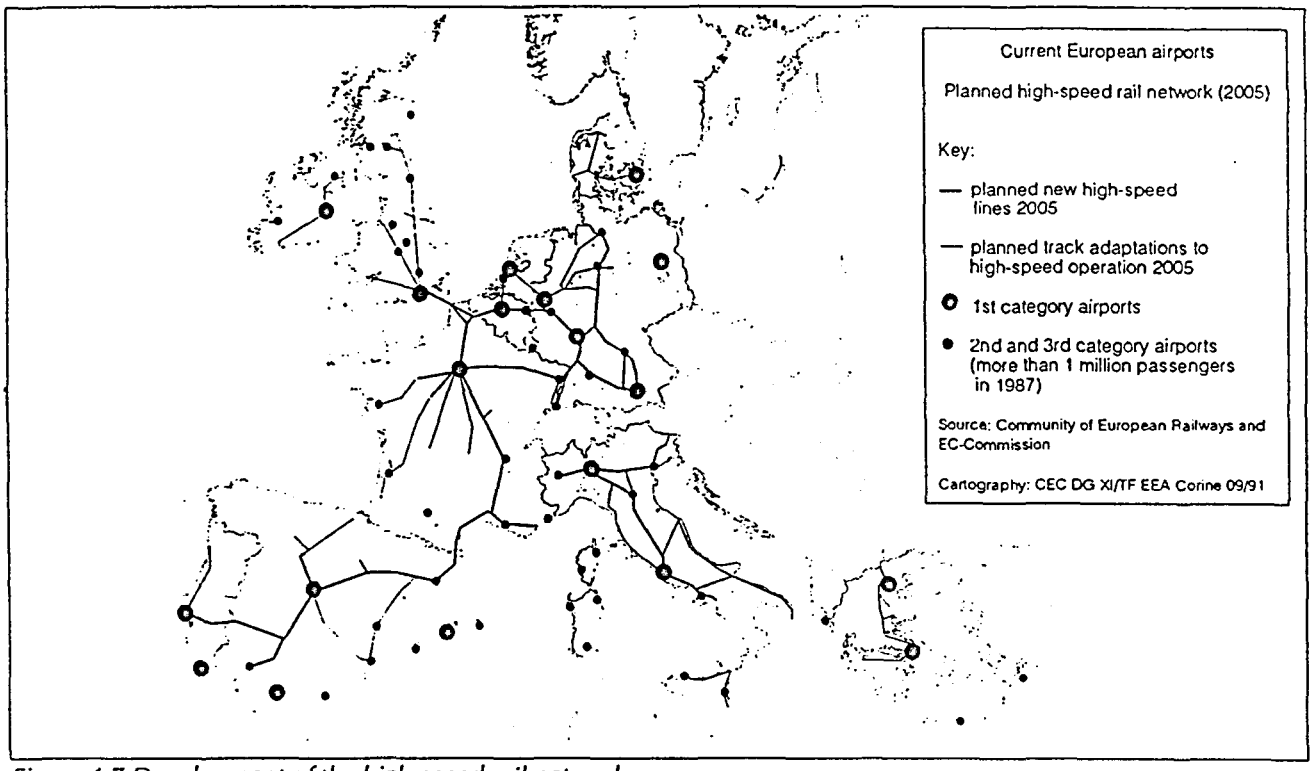


Figure 4.7 Development of the high-speed rail network

Many new lines will have to cross the most populated regions of the Community, which generally already have a particularly dense infrastructure, as well as regions in which the environment is still free from certain pressures. The final choice of route is already the subject of heated local debate.

However, the soci-economic advantages of high-speed trains should also be stressed. While the question of environmental protection is fully justified, high-speed trains are also seen as a means of relieving congestion in air and road transport with less serious attendant environmental effects. However, in the last few years, the rail network has been steadily shrinking in some countries owing to the closure of lines that had ceased to be profitable as a result of rural depopulation and competition from the motorcar.

This development comes on top of the motorway network, which is already very dense in the north-west of the Community (Figures 4.8 to 4.10).

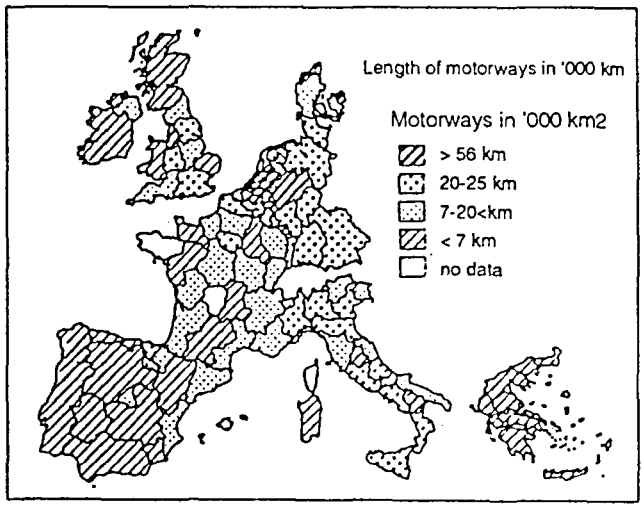


Figure 4.8 Density of the motorway network

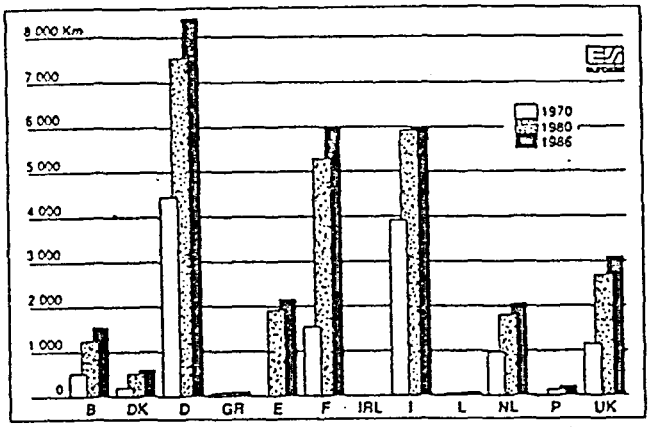


Figure 4.9 Development of the motorway network

DEVELOPMENT OF THE LENGTH OF THE ROAD NETWORK (IN KM)

	B	DK	D	GR	E	F	IRL	I	L	NL	P	UK
1970	94 218	62 678	440 322	35 257	:	783 000	86 695	280 325	4 949	:	:	344 057
1975	122 370	65 792	462 803	36 482	:	774 788	:	285 540	4 963	:	:	351 457
1980	121 750	68 405	477 854	37 367	:	797 000	92 294	288 562	5 094	93 430 (1)	18 634	360 292
1985	131 810	69 554	485 890	40 359	168 470	796 355	92 294	293 754	5 157	94 233 (2)	18 582	369 076
1986	:	69 597	487 041	40 395	168 469	796 257	92 294	294 295	5 208	:	18 638	371 058

(1) 1982. (2) 1984.

Figure 4.10 Development of the road network

Trends

Leaving aside the problem of congestion, the intensity of Community road traffic is increasing in order to meet growing demand for passenger or freight transport and to sustain the development of regions lagging behind economically. Between 1970 and 1985, road traffic increased by 67%, while the volume of freight transported by inland modes increased by 32%. Total passenger transport increased by 49%, while the figure was 56% for private cars; passenger transport by air increased by 100% during this period.

The particularly rapid growth in international transport of goods by road is due above all to faster industrial growth, the adoption by industry of "just in time" strategies and, without any doubt, behaviour anticipating the single market. The congestion problems and costs resulting from this development will doubtless get considerably worse if there is no improvement in the infrastructure. The European Conference of Ministers of Transport has predicted bottlenecks in the major European traffic corridors by the year 2000 if road traffic were to increase by more than 1.1-1.3% per annum. At present, road traffic is increasing at a much faster rate and, if we look at the forecasts (scenario in which there is no major change in behaviour on the part of users and producers or in policies), this could reach 2.8% annually for goods and 2.9% for passengers between 1985 and 2000. Figure 4.11 resumes these elements for the main transport modes and shows a growing, sustained increase until 1995.

Thus the environmental problems posed by intensification of traffic (particularly in the urban environment) are compounded at Community level by the problem of overall regional planning (see Section on quality of life).

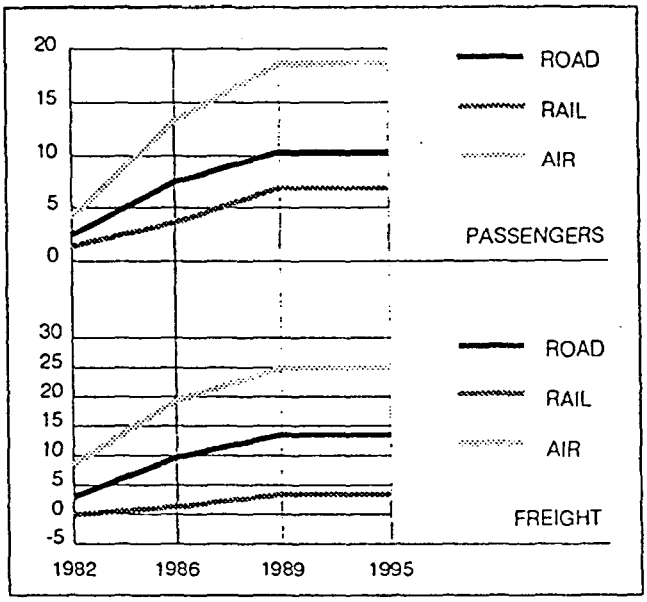


Figure 4.11 Average annual Community growth rate by transport mode

5. TOURISM

Although tourism has still far from developed its full potential - which is a very important environmental indicator - the growth rate is currently slowing down as tourists are clearly more sensitive to changes in the main macroeconomic indicators, such as income, prices and exchange rate. Nevertheless, the tourist industry is a very important factor in the European economy, generating jobs (7.4 million) and income (5.5% of GDP). All the indicators examined show that tourism (here we are principally concerned with mass tourism) increased in Community countries between 1980 and 1987 (Figure 5.1). Bed nights increased by 13.8%, which represents an increase of 8% for residents and 27.6% for non-residents of the country visited; arrivals at the frontiers increased by over 30%; receipts for travel in the balance of payments increased by 32% in real terms and expenditure by 25%; accommodation capacity increased by an average of 18%, without counting secondary residences for which no data are available.

VARIATION IN % 1980 - 1987

	Total nights spent	Nights spent by residents	Nights spent by non-residents	Arrivals at the frontiers	Receipts for travel(1)	Expen-diture for travel(1)	Capacity in hotels and simil.	Capacity in supplem. accom.
B	18.9	10.7	40.3	-	44.9	4.5	1.5	15.8
DK	3.2	5.9	-0.2	-	20.1	51.1	15.2	-
D	10.9	8.7	28.0	-	0.9	-4.3	18.5	41.4
GR	15.3	-3.4	22.1	70.0	10.0	43.0	35.0	99.7
E	44.3	26.2	56.4	32.9	81.6	35.8	9.2	49.3
F	9.0	6.3	15.3	19.9	20.2	18.5	10.9	29.0
IRL	-	-	-	13.6	4.3	1.2	-8.6	-
I	15.9	19.1	10.8	10.4	-2.0	70.5	6.2	22.2
L	1.6	8.8	0.8	-	-	-	-	-14.6
NL	13.5	11.4	23.4	-	35.4	14.6	5.7	11.7
P	14.9	-14.4	48.9	131.8	50.2	9.7	25.4	37.8
UK	-3.4	-10.0	21.9	24.3	38.2	73.9	-	-
CE	13.8	8.0	27.6	31.5	31.9	24.6	14.1	23.2

(1) in real prices

Figure 5.1 Development of tourism in the Community

Although tourism is a key element in the economy of the countries on the Community's periphery, statistics on this activity are still incomplete. The regional dimension of tourism is still poorly known owing to inadequate statistics: internal fluxes of tourists are inadequately recorded, nights not spent in hotels or similar accommodation are greatly underestimated, and the definitions used differ from one country to another or even from one region to another.

However, an exhaustive inventory of reception capacities in the whole accommodation sector and the take-up rates recorded in the hotel sector in some countries confirm the essentially coastal Mediterranean nature of Community tourism and its importance for the peripheral belt. The largest numbers are recorded on the western seaboard of Spain and the Balearic Islands, the south of Languedoc-Roussillon and Provence-Côte d'Azur, Liguria and the northern part of the Italian Adriatic coast. Certain parts of the French Atlantic seaboard (Aquitaine, Brittany, Normandy) and the Belgian coast are also preferred destinations (Figure 5.2). However, the analytical scale does not take sufficient account of the discontinuity of tourist areas and the striking disparities within a given region, in particular the contrast between the coastal and inland zones of certain areas of Spain or Italy.

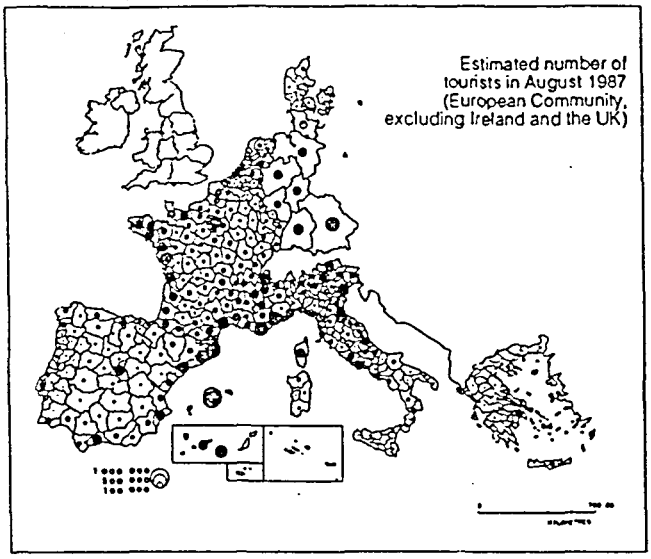


Figure 5.2 Number of tourists in August 1987

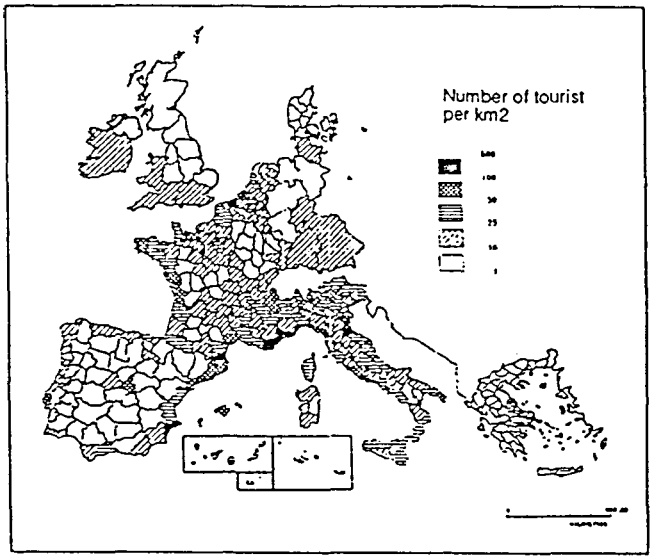


Figure 5.4 Tourist density

certain areas of Spain or Italy.

The expansion of tourism along the Community's southern coasts and in certain mountain regions has led to excessive growth of the built-up areas both through new projects or development of original sites. This is reflected in high or extremely high tourist densities (Figures 5.3 and 5.4) in certain localities: 1400 tourists per square kilometre on the Costa Brava, 4250 in the Tarragona area, 50 million tourists in the Alps every year, etc. These figures actually underestimate reality since, for example, in the case of coastal areas we should be considering the density in a very narrow coastal strip.

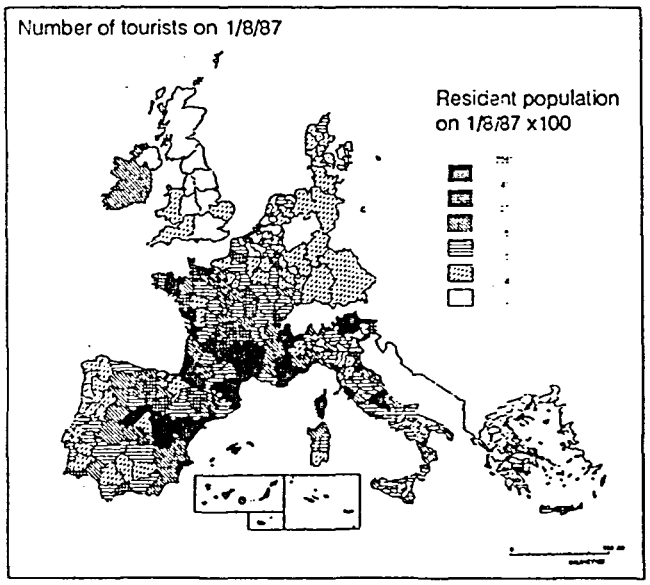


Figure 5.3 Tourists and resident population

The number of international tourists on the Mediterranean coast doubled between 1970 and the end of the 1980s from 58 to 117 million; the increase was fivefold in Greece; the relative share of coastal tourism in Spain increased from 42% to 65% in ten years. In mountain areas, the construction of ski pistes and related infrastructure including access roads and parking required the felling of thousands of hectares of forests; in the Alps, for example, for 12 million skiers there are about 40 000 ski runs and over 14 000 tows and lifts. However, these forests constituted natural barriers against avalanches which have now become much more frequent as a result of these changes.

This expansion of tourism also gives rise to management problems: waste collection and treatment, dimensioning of waste water collection networks, sewage treatment facilities, organization of water distribution, creation and extension of access roads to sites.
Within a mere 25 years, for example, most of the coastline of Languedoc and Provence in France, the Costa Brava and Baleares in Spain and Sicily became urbanized, in most cases in a disordered fashion, resulting in fundamental changes to the landscape, way of life and the very nature of management problems and greatly increasing certain risks such as forest fires. Around 200 000 hectares of Mediterranean forests are thus destroyed every year by fire; 75% of the dune systems in the south of the Community (from Gibraltar to Sicily) have disappeared since 1960; 526 Mediterranean botanical species and varieties are threatened to varying degrees in France (of which 145 are on the verge of extinction or have totally disappeared).

From the point of view of economics, the idea that tourism stimulates the development of the peripheral regions needs to be qualified. While tourism may contribute to regional development, it often imposes a heavy expenditure burden on the regions concerned, e.g. for infrastructures.

Furthermore, since capital, technology, consumer goods and labour often originate from outside the region, for many decisions, including those concernig environmental protection, local people are not sufficiently involved. Over 30% of the total expenditure by tourists in the Balearic Islands, a region with a particularly successful

tourist industry, does not benefit the islands. Thus the local communities fail to reap the profit, part of which could be used to improve local or regional pollution abatement infrastructure or to maintain ecologically sensitive areas. Therefore the effects of mass tourism depend to a very large extent on the social and economic characteristics of the host environment and on its ability to preserve its "natural" capital.

Trends

It seems as though the above phenomena are set to continue, exacerbating the risks to the environment and natural resources. Some developments, mainly relating to utilization of coastal areas, are particularly worrying. On the Mediterranean coast, the recent United Nations Blue Plan forecasts an overall growth of the order of 70% between 1984 and the year 2000 not only in tourist numbers but also in the demand for drinking water and in resultant waste and effluents; at the same time, land use for the necessary hotel accommodation is expected to increase by about 82%. In the Netherlands, where marina capacity has already doubled over the last ten years in the Wadden Sea, a continuing upward trend is expected in view of the growing number of yachts. The same applies to the United Kingdom where the number of marinas in estuaries is likely to increase by 50% in the near future, with 78 projects in progress.
Mountain areas are also likely to experience increasing exploration by mass tourism.

Part three

ECONOMIC ASPECTS

1. DAMAGE

Human activity, it has to be said, has so far proved to have an adverse impact on the environment, creating a multitude of problems and demands for a better environmental quality. The type of damage inflicted on the environment is extremely varied, but it always has a physical expression (deterioration of the quality of an environment, disappearance of a habitat, exhaustion of a resource, impairment of the health of certain individuals, etc.) or in some cases the damage may even be psychological, e.g. when a cultural symbol disappears (extinction of a species closely associated with the history of a region, change of landscape, etc.).

However, whatever its origin and the form it takes, such damage represents a cost. Certain types of damage, once they have been clearly identified, can be evaluated in monetary terms because it concerns commercial objects or services (i.e. objects or services which have a price). Restoration of historical monuments affected by air pollution, for example, comes into this category. Where the economic (monetary) cost cannot be directly identified, it is sometimes possible to estimate it using indirect calculation methods. However, these methods have certain limits and uncertainties (significant margins of error and bias, disparities in estimates), so that extreme care must be taken in interpreting the results. Nevertheless, despite their imperfections, they give an approximate idea of the volume of costs associated with environmental degradation (see Figure 1.1). They can also be used to compare the classic socioeconomic indicators (particularly budgets, GDP, etc.). In this sense, the procurement of reliable economic data on damage caused to the environment permits the integration of the environmental dimension into this area of decision-making.

SECTOR AND/OR TYPE OF DAMAGE	COUNTRY	YEAR/ PERIOD	ESTIMATED DAMAGE COSTS	METHOD USED	REMARKS	SOURCE
1. AIR POLLUTION TOTAL DAMAGE FROM FOREST DIE BACK	GERMANY (excluding the former GDR).	1980 -2060	DM 5.5 -8.8. BILLIONS PER YEAR	1.LOST OUTPUT. 2.WILLINGNESS TO PAY 3. INDIRECT VALUATION	FOREST DIEBACK 1.LEISURE ACTIVITIES. 1+2 WATER & LAND 3.	EWERS 1*
2. AIR POLLUTION LOSS OF TIMBER HARVEST	EC/excl. SPAIN		$ 9.776.8 m per year (1987 prices)		30.2 MIL. m3 pa	IIASA
3. AIR POLLUTION DAMAGE TO HISTORIC MONUMENTS AND OTHER CULTURAL PROPERTIES	NETHERLANDS	1984	Dfl 15-30 Dfl m	Alternative replacement cots.		KUIK et al. 2*
4. AIR POLLUTION DAMAGE CAUSED TO: -NATURE FORESTS AGRICULTURE AND GOODS. -HUMAN HEALTH	NETHERLANDS		DM 200-340 m/pa DM 100-600 m/pa			KERVER AND RINGREK (1988)
5. AIR POLLUTION DAMAGE DUE TO TRANSPORT	NETHERLANDS		0.15 -0.2 % of GDP			KANAFANI 3*
6. AIR POLLUTION DAMAGE CAUSED BY INLAND TRANSPORT	FRANCE		0.4 % of GDP			BARDE & BUTTON 4*
7. AIR POLLUTION DAMAGE CAUSED BY TRANSPORT	GERMANY		0.4 % of GDP			KANAFANI (1983)3*
8. AIR POLLUTION CUMULATIVE CUMULATIVE DAMAGE ANNUAL DAMAGE	NETHERLANDS	TO 1985 1986	Dfl 4.0 - 11.4 bn Dfl 1.7 - 2.8 bn			MINISTRY OF PUBLIC HOUSING PHYSICAL PLANNING AND ENVIRONMENTAL MANAGEMENT (1985)
9. AIR POLLUTION	NETHERLANDS		0,18 % of GDP			ENV (85) 27
10. AIR POLLUTION	U.K.		0,16 % of GDP			OECD
11. NOISE	FRANCE FRANCE GERMANY (excl. former GDR NETHERLANDS	1986	0,11 % of GDP 0,08 % of GDP 1,00 % of GDP 0,02-010 % of GDP			QUINET (1989) OECD OECD KANAFANI 3*
12. WATER : WATER BASED ACTIACTIVITIES AND IMPACTS ON WATER QUALITY	NETHERLANDS	1985	Dfl 185 m			KUIK et al. 2*
13. WATER POLLUTION	NETHERLANDS	1986	Dfl 300-900 m			OPSCHOOR 1986 5*
14. ENERGY : GROSS SOCIAL COST (ENVIRONMENTAL EFFECTS) OF ELECTRICITY -GENERATED FROM FOSSIL FUEL -IN NUCLEAR POWER PLANTS	GERMANY (excluding former GDR)	1990	DPf/KWH 2.05-7.93			HOHMEYER (1990)6*
15. EXPENDITURES DUE TO FAILURE TO AVOID ENVIRONMENTAL DAMAGES	GERMANY	1980 1988	DM 11.5--0.77 GDP DM 19.5 (1980 prices)--1.16 GDP		INCLUDES ONLY "DEFINE" EXPENDITURE FOR EXAMPLE CLEANING OF CONTAMINATED LAND SITES.	LIEPERT (1989) 7*

Figure 1.1 Estimated costs of population and environmental damage

However, there is no doubt that some of the damage associated with environmental degradation is poorly known and, secondly, the cost of this damage is considerably underestimated. Consequently, failure to take any action to protect the environment is costly and impairs the long-term efficiency of the economic system. The example of the former GDR is particularly instructive, since recent work by the IFO Institute puts the total amount of investment necessary until the year 2000 to restore the quality of the environment at over DM 200 billion (see Figure 1.2). This enormous cost that will have to be borne by the German people is the consequence of the disastrous, negligent environment policy conducted by the former Communist regime. Figures 1.3 and 1.4 give a breakdown of the expenditure required to restore sites contaminated by waste and for water management.

EXPECTED INVESTMENT REQUIREMENTS IN THE ENVIRONMENT MANAGMENT SECTOR IN THE FORMER G.D.R. UNTIL THE YEAR 2000(bn DM)

Sectors	
Clean Air	22,5 a)
Drinking water supply	16,9
Waste water treatment	125,2
Waste disposal	34,3 b)
Remedial action	10,6
Noise abatment	2,0
Total	211,4

a) Estimates taken over
b) Includ. Operation costs

Figure 1.2 Expected investment requirement in the environment managment sector

TOTAL OF IMPROPER DISPOSALS

Measures	Suspect sites	Cost of Mrd. DM
1) Discontinued1 regular monitoring	1 075	0,08
2) Analysis and evaluation	16 802	0,60
2a) Remedial action	2 457	7,55
of which Category A	191	3,82
Category B	656	2,12
Category C	1 610	1,61
2b) Monitoring (for 10 years)	14 351	2,34
Total	27 877	10,57

Figure 1.3 Estimated investment requirement for remedial action

WATER MANAGMENT	EXPENDITURE REQUIRED (bn DM)
Extension of sewerage network by 9,5000 km to increase coverage from 73.2 % to 92.5 % of households	9.5
Extension of private and industrial sewerage by 14,800 km	10
Improvement of 27,600 km of sewers (30 % of existing sewerage network)	27.6
Upgrading of existing waste water treatment to introduce tertiary treatment (Public 9.5 million p.l. industry 33.6 million p.l.)	25.6
Extension of waste water treatment capacity (Public 5.2 million p.l., industry 16.5 million p.l.)	32.5
Construction of liquid measure treatment facilities (27-35 million p.l.)	27-35
Rainwater treatment	2.5

Figure 1.4 Water managment

2. EXPENDITURE

Taking account of the environment also has an economic cost, although it is of an entirely different nature since it takes the form of expenditure on prevention, protection and damage repair, monitoring the implementation of environment policy and the functioning of environmental administration. The purpose of this expenditure is to restore, enhance or maintain environment quality and, consequently, the associated benefits (services).

To take Germany as an example, environmental expenditure is estimated at about 2.2% of GDP (1990). This figure has to be compared with the estimated cost of environmental damage, which is put at 6% of GDP. There are few comparative data available for all Member States. Figure 2.1 below gives the data for a number of Community countries.

It can be seen from these tables that expenditure on protecting the environment is still insufficient in view of the cost of environmental damage (even if the available estimates are wholly inadequate). Nevertheless, it would be wrong to believe that there is an automatic relationship between the level of expenditure by a country to protect its environment and the quality of this environment.

Having said that, it is still true that the level of expenditure by a country on its environment is a good indicator, firstly, of the extent of the damage with which it is confronted and, secondly, of the place that the environment has on the scale of national priorities.

What is the situation with regard to expenditure by the Community? The three principal sources of finance are the ACE programme, the structural Funds and the European Investment Bank. The overall budget of the ACE programme (Community Action for the Environment) amounts to ECU 24 million for the period 1987-92. ERDF participation (European Regional Development Fund) in the financing of projects directly concerned with protecting the environment (ECU 135 million between 1985 and 1988) is shown in Figure 2.2. The ERDF also contributed to the financing of multiannual programmes with an "environment" dimension (ECU 70 million between 1985 and 1987, ECU 55 million in 1988). In addition, the three Community structural Funds (EAGGF-Guidance Section, ERDF and ESF) were reformed in 1988 in order to concentrate expenditure on a limited number of priority objectives. Four of them: objectives 1, 2, 5a and 5b concern the environment. Planned expenditure on the environment under the structural Funds is shown in Figure 2.2 below. Still within the framework of the structural Funds, the Envireg programme has a budget of the order of ECU 500 million.

STRUCTURAL INDICATORS						"ENVIRONMENT" EXPENDITURE					CHARACTERISTIC RATIOS				
	GDP 1988 G-ECU (1)	GDP per capita (2)	Structure of pressure on the environment (3)	Total 1988 G-Ecu (4)	Average annual growth rate 1980-88 in vol(%)	Sectoral breakdown(as % of total)					Env.expenditure/ GDP(%)	Env. exp./ pressure on the env.(6)	Env.investment/ total investment	Env. inv. business/ total inv. businesses (7)	Env. exp. manufacturing/VA manufacturing
						Waste	Air	Water	Noise (5)	Nature protection(5)					
B-L	133,5	16,0	4,5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DK	91,1	17,4	1,7	1,0	NA	27	19	52	1	1	1,1	1,1	2,5	0;8	1,4
D	1017,5	17,9	22,9	16,5	3,4	23	29	46	1	1	1,6	1,5	3,8	7,7	1,3
GR	44,8	8,7	2,5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E	291,9	12,1	9,8	1,8	4,0	46	1	32	1	20	0,6	0,4	1,1	0,2	0,3
F	809,0	17,3	16,0	8,3	2,8	40	11	45	2	2	1,0	1,1	1,4	2,9	1,5
IRL	27,7	10,3	1,1	0,3	3,6	45	15	35	3	2	1,0	0,6	2,1	0,9	0,9
I	704,4	16,5	17,1	5,7	5,0	19	27	48	1	5	0,8	0,7	3,1	0,3	0,6
NL	192,5	16,2	5,2	2,7	3,1	28	13	47	4	8	1,4	1,1	1,7	3,4	0,8
P	35,3	8,6	2,0	0,3	4,0	14	2	75	1	8	0,8	0,3	1,6	0,1	0,2
UK	705,5	17,2	17,2	8,7	2,0	33	22	35	3	7	1,2	1,0	2,7	1,3	1,5
CE (12)	4053,2	15,9	100,0	45,3	3,3	29	22	44	2	3	1,2(10)	1,0	2,5(10)	3,0(10)	1,3(10)

(1) Gross domestic product at 1988 market prices-billion ECU- Source Eurostat
(2) Current prices and purchasing power standards - thousend PPS - Source Eurostat
(3) This indicator estimates the proportion of total pressure on the environment due to economic activities for each country. The higher the figure is for a given country, the greater the relative pollution impact of that country's production and consumption structures (relative share of chemical production in the Community, proportion of fossil fuel consumption, etc.). The method by which ERECO/BIPE calculated this indicator is given in the study.
(4) Excluding expenditure relating to the nuclear industry, water production and the quality of live, and work done directly by households (E.G. individual renovation)-Sources ERECO
(5) The figures for noise and nature protection are particularly uncertain, as the definition and type of expenditure to be taken into account varies significatly from one country to another
(6) By convention, the European average is fixed at 1.0.
(7) "Environmental" investment by businesses compared with their total investment. The main uncertainty concerns the method of accounting for internal mesures and clean technologies, which may vary from one country to another - Source ERECO.
(8) "Environmental" expenditure of manufacturing industry (industries excluding energy and construction) as a proportion of their total value added - Source ERECO.
(9) Provisional figures.
(10) The EC total does not include Belgium, Luxembourg and Greece - Source ERECO

Figure 2.1 Expenditure on environmental protection

Finally, the European Investment Bank (EIB) gives loans on favourable terms for equipment to improve environment quality (sewage treatment plants, drinking water supply, waste treatment facilities, etc.). Financial support to this type of operation amounted to ECU 1.7 billion in 1989 (i.e. 15% of the loans given by the EIB).

	1985	1986	1987	1988	TOTAL
Coastal protection	3.8	1.2	6.7	11.2	22.9
Improvement and protection of groundwater	11.4	29.5	6.7	7.2	54.8
Site protection and improvement	0.3	9.3	4.4	9.1	23.1
Waste incineration and recycling	8.0	2.8	6.1	9.8	26.7
Pollution control	-	2.6	1.3	3.7	7.6
Total	23.5	45.4	25.2	41	135.1

Water conservation and managment	899
Waste managment	150
Atmosphere pollution control	337.4
Soil conservation	61.3
Other	102
Similar urban development projects	178.3
Total	1.728

	Obj.1	Obj. 2	Obj.5a	Obj. 5b	Total
B	-	14,2	-	-	9
DK	-	7,3	2	-	55
D	-	116,4	20	110	238
GR	202	-	-	-	202
E	675	97,8	1	79,5	849,5
F	19,5	109,1	-	73	165
IRL	228	-	-	-	228
I	622	45,1	3	22	690
L	-	-	-	-	-
NL	-	5,4	1	-	4
P	168	-	-	-	168
UK	53	141,7	12	26	181
TOTAL	1967,5	537	39	310,5	2854
As a % of total expenditure relating to objective	5,1	7,5	1,0	11,1	

Figure 2.2 (a) ERDF expenditure on the environment 1985-88 (m ECU)
(b) EIB advances for environment projects in 1989 (m ECU).
(c) Estimated financial share of the structural Funds in expenditure on the environment 1989-93 (m ECU).

These figures show that the proportion of total budgets devoted by the European Community to protecting its environment is still small. The rare data available on the development of environmental expenditure point to a double trend: an overall increase in expenditure between 1982 and 1988 on the one hand, and the growing proportion of this expenditure shouldered by the private sector on the other. It is thought that these trends will continue in the coming years.

One thing appears certain, however: in the long term, the benefits to individuals and more particularly to society of a preventive environmental policy will more than offset its cost, i.e. the expenditure to which this policy gives rise.

3. BENEFITS OF ENVIRONMENTAL PROTECTION

While the cost of environmental damage in the Community is substantial, the benefits of a rational environmental policy, for their part, are also considerable. Three examples may serve to illustrate this idea: avoidance of damage, improvement of the competitiveness of industry, reduction of unemployment.

An example of a reduction of the cost of damage is that of forest dieback in Germany. Work on evaluating the economic advantages (timber production), social benefits (leisure and recreation) and ecological gain (improved water quality) of a policy to combat pollution shows that the benefits of a more vigorous conservation effort (reference scenario in Figure 3.1) would outweigh those of a cautious policy.

Expenditure on the environment is often considered as an additional cost which detracts from the competitiveness of the economy. It is becoming increasingly clear that this analysis no longer holds good. A recent study by the Commission shows that there is a correlation between the level of environmental standards respected by a firm and its competitive position. In fact, the more dynamic enterprises are increasingly using the environment as a weapon in their strategy to strengthen their market position. From this point of view, integration of the environment dimension is a factor both in technical innovation and in improving business competitiveness (see Figure 3.2). The additional short-term costs implicated in such integration (R&D, advertising, new investments, etc.) are generally more than offset by the long-term benefits (increased market shares, product differentiation, etc.) of such a policy.

	SCENARIO	
	Reference	Trend
Increased output from forestry, etc	2.9	0.6
Leisure and recreation benefits	5.4	2.5
Improved water and land quality	0.5	0.2
TOTAL	8.8	3.3

Figure 3.1 Economic benefits of avoiding damage to forests until 2060 (former Federal Republic of Germany (in '000 million ECU)

INDUSTRY	METHOD	% REDUCTION	PAYBACK TIME	
Pesticide production	Separation of plant wastes	100 % of dust	10	mounths
Farm equipment	Proprietary	80 % of sludge	2.5	years
Automotive	Pneumatic cleaning process	100 % of sludge, water	2.0	years
Microelectronics	Vibratory cleaning process	100 % of sludge	3.0	years
Paint, coatings	Pneumatic cleaning process	100 % of solvent, paint	<1.0	years
Leather-making	Ion-exchange, Adsoption	99 % of chromium	2.5	years
Pharmaceutical production	Water based solvent replaced organic solvent	100 % of solvent	<1.0	years
Organic chemical manufacturing	Adsoption, scrap condenser, Conservation vent, Floating roof	95 % cumene	1.0	mounths
Photographic processing	Electrolytic recovery, Ion-exchange, Adsoption	85 % of developper, 95 % of fixer, silver, solvent	<1.0	years
Equipment manufacturing	Ultra filtration	100 % of solvent, oil, 98 % of paint	2.0	years

Figure 3.2 Environment policy and technological progress

The defensive strategies of the first generation are gradually being replaced at company level - and in public policy - by more offensive, innovatory strategies. However, as can be seen from Figure 3.3 below which shows how small the share of integrated technology in pollution control investments is in three countries, this shift is still limited in scale.

SHARE OF INTEGRATED TECHNOLOGY IN POLLUTION CONTROL INVESTMENTS	
B	20 % (1)
FRG	18 % (2)
F	13 % (3)

Souces: (1) Interenvironment Wallonie (Flanders exclued)1988
(2) IFO Institude (Private investments only)
(3) Ministry of the Environment - 1987

Figure 3.3 Share of integrated technology in pollution control investment

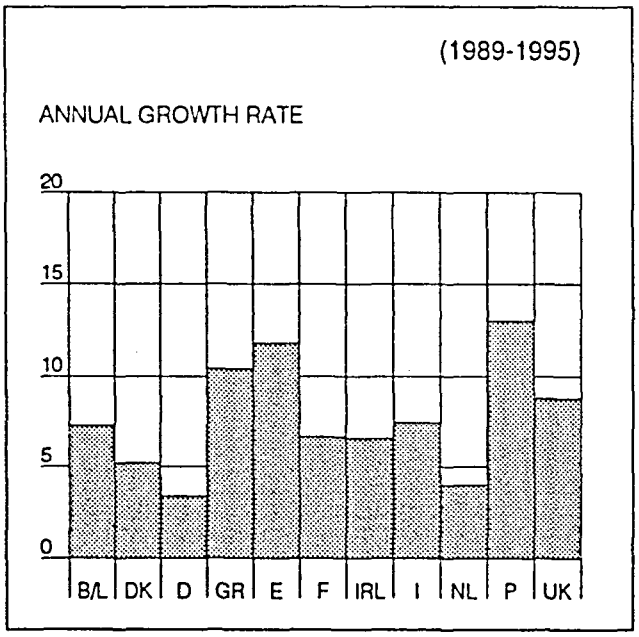


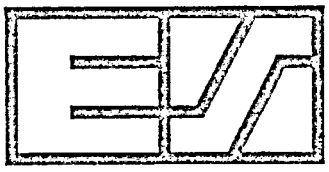
Figure 3.4 Projected annual growth of the environment market in the Member States

The clean technology sector (defined as industries producing technologies and services designed to monitor, limit, prevent and repair environmental damage) is naturally highly sensitive to trends in environment policy, whether they be of a regulatory nature or economic incentives. This sector includes many small and medium-sized businesses, but also the "environment" departments of large concerns.

Four countries, namely Germany, United Kingdom, France and Italy alone account for 85% of the environmental industries and services market in the Community. In addition, this market is highly international: German industry exported over 10% of its output in 1984; 60% of the machines and electrical installations used in Denmark to monitor pollution are imported; firms working under foreign licences hold over 65% of the French market for municipal waste incineration. In this context, a country with lax environmental standards risks having to import the bulk of its equipment sooner or later. The Community, for instance, is lagging so far behind in instrumentation and control that it had to import 80% of such equipment in the middle of the 1980s. What is therefore at stake is the future of the European clean technology industry. The same applies within the Community, for this sector is still poorly developed in the southern countries although demand there is expected to be strong in the coming decades. These countries must therefore be able to develop technologies adapted to their biophysical and economic conditions and independent expertise if they are to avoid excessively high imports and too large a trade imbalance. (Figure 3.4)

The third example is employment. For a long time, environmental protection was equated with unemployment. In certain circumstances, environmental policy can indeed depress employment in the short term. However, it is now broadly accepted that it may be beneficial to employment, either directly through the creation of specific posts, or indirectly as a result of a boom in the clean technologies sector and environment-related activities.

The environment industry employs between 1.2 and 1.5 million people in the Community, which is about 1% of total employment. This figure is doubled when account is taken of people working in environment-related sectors. In addition, expenditure on environmental protection has a positive effect on employment. This at any rate is what come out from the report of the Task force on "The Environment and 1992" which shows that a doubling of environmental expenditures would decrease employement demand by 100,000 in Germany and Great Britain if policies are coordinated.



eurostat

ENVIRONMENT STATISTICS

1991

STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES

eurostat

Communication to the Commission

Reference: *Environment Statistics 1991*
Annexe to the Report on the "State of the Environment in the European Community 1992"

This Eurostat publication on "Environment Statistics" aims to offer in systematic and standardized manner a set of statistics choosen to accompany, explain and illustrate the Communities' actions in the field of environmental policies. The statistical data bases available at Eurostat and the data collection undertaken jointly with OECD are the basic sources for this presentation. Account has been taken as much as possible of the statistical standards established by the Economic Commission for Europe of the United Nations.

This publication has the aim to complement the Commission's report on the "State of the Environment in the European Community" in putting the statistics used and quoted in the report in a statistical frame which shows the developments over time as well as comparisons across space. In following international statistical conventions comparisions with third countries are facilitated and the place of the Community in the world can be assessed.

These statistics have also been used in preparing the report and are widely quoted in the text. But this summarized and systematic presentation allows the text to be freed from methodological explanations ; it gives precise indications of the sources and recommendations for the reasonable use of the information. The presentation of time series over a long series of years also permits a better evaluation of trends and developments.

This publication is not comprehensive. It is the first approach of Eurostat in this field. The publication will be enlarged and gaps filled as progress in the harmonisation of the methods and the integration of environmental issues in the main body of socio-economic statistics is achieved. The restriction to statistics which are available over a long sery of years and for all Member States has also limited the choice. This illustrates the great efforts which still have to be made on the way to the establishment of regular official environment statistics.

NOTE: This document is based on a draft version of the publication *Environment Statistics 1991*. In this version, certain tables, definitions and footnotes have been omitted, and the text has not been fully updated from the previous edition.

Certain additional tables are contained in the following annexes:

Annex 1	The publication *Raw materials and environment.*
Annex 2	Tables supplied for the document *The State of the Environment in the European Community 1992*, which are not included in the publication *Environment Statistics 1991.*

INTRODUCTION

Following the increasing priority given to the environment in Community policies, as shown by the amendments to the EEC Treaty contained in the Single European Act and by the Fourth Environmental Action Programme (1987-1992), Eurostat has begun systematic publication of environment statistics. The present publication, which will appear at regular intervals, makes readily available a set of statistics which are directly relevant to Community actions on the environment. These statistics include:

(a) indicators for monitoring and verifying the effects of existing Community policies on the environment;

(b) quantitative information assisting the formation of new environmental policies for the Community, on subjects which have been identified as priority areas for Community action;

(c) information required for integration of the environmental dimension in other Community policies;

(d) basic data required for assessment of the environmental impact of public and private projects.

Eurostat is a Directorate-General of the Commission of the European Communities, with responsibility for European Community statistics. The statistics published here are the product of collaboration with Member States, with other services of the Commission, and with international organizations. Eurostat works with the Commission's Directorate-General for Environment and Nuclear Safety (DG XI), including the Task Force preparing the future European Environment Agency. Eurostat also cooperates with the Organization for Economic Cooperation and Development (OECD) in obtaining various data from Member States via a joint questionnaire. As far as possible, the nomenclature used for collection and publication of environment statistics follows the standards established by OECD and by the United Nations Economic Commission for Europe (ECE).

Almost any statistical data may have some environmental relevance; the scope of this publication has been deliberately focused by choosing statistical series according to the following criteria:

(e) direct relevance to existing Community environmental policies;

(f) direct relevance to priority areas for future Community action on the environment;

(g) availability of data of reasonable quality for at least eight Member States;

(h) availability of time series, since environmental indicators can frequently be interpreted only in terms of trends over long periods;

(i) basic indicators, such as population, land area and gross national product, which are involved in the presentation of all environment statistics;

(j) compliance with standard statistical nomenclatures and methodology.

In general, it is intended that this publication will complement the Commission's report on *The State of the Environment in the European Community.*

Documentation

European Community environmental legislation 1967-1987 (Vols 1-4)
Directorate-General for Environment, Consumer Protection and Nuclear Safety, Brussels
(Document XI/989/87)

The state of the environment in the European Community 1989
Directorate-General for Environment, Consumer Protection and Nuclear Safety, Brussels (to be published in 1992)

Community Legislation

Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment

Council Decision 85/338/EEC of 27 June 1985 on the adoption of the Commission work programme concerning an experimental project for gathering, coordinating and ensuring the consistency of information on the state of the environment and natural resources in the Community *(the CORINE project)*

Single European Act, 9 September 1985

Resolution of the Council of the European Communities and of the representatives of the Governments of the Member States, meeting within the Council of 19 October 1987, on the continuation and implementation of a European Community policy and action programme on the environment (1987-1992) *(the Fourth Environmental Action Programme)*

Council Resolution of 19 June 1989 on the implementation of a plan of priority actions in the field of statistical information: Statistical Programme of the European Communities (1989 to 1992)

Council Regulation (EEC) 1210/90 of 7 May 1990 on the establishment of the European Environment Agency and the European environment information and observation network

It is planned to improve this publication in the future by the inclusion of further suitable data and by new methods of presentation. Comments from readers are welcome and should be sent to:

John ALLEN
Eurostat - Environment (BAK 1638)
Bâtiment Jean Monnet
L-2920 LUXEMBOURG

Phone: +352 4301.7291 or 7287
Fax: +352 4301.7316

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1. BASIC INDICATORS

These general statistics are intended to provide a context for the environmental indicators presented in this publication. In particular, they show the differences between Member States in area, population and economic activity, which affect the interpretation of statistics relating to the environment.

In particular, it should be remembered that a concentration of industrial activities in a small country, such as Luxembourg, can produce misleading results for environmental indicators relating to pollution, when expressed on a per capita basis. Ideally, comparisons should refer to administrative regions of comparable size, but in reality few environment statistics are yet available at regional level across the Community.

1.1
Basisindikatoren
Basic indicators
Indicateurs de base

	Population Population Bevölkerung 1989 *(1 000)*	Area Superficie Fläche 1989 *(km²)*	Population density Densité de population Bevölkerungsdichte 1989 *(per km²)*
EUR12	324 532	2 259 876	144
Belgique/België	9 902	30 519	324
Danmark	5 130	43 093	119
BR Deutschland	61 422	248 619	247
Ellas	10 004	131 957	76
España	38 766	504 765	77
France	55 884	549 086	102
Ireland	3 538	70 283	50
Italia	57 399	301 281	191
Luxembourg	375	2 586	145
Nederland	14 760	41 478	356
Portugal	10 288	92 071	112
United Kingdom	57 065	244 139	234
USA	248 777	9 372 600	27
Japan	123 116	377 800	326

	GDP PIB BIP 1989 *(1 000 Mio ECU)*	GDP PIB BIP 1989 *(ECU per capita)* *(ECU par habitant)* *(ECU je Einwohner)*	Per capita GDP growth Taux de croissance PIB par habitant BIP je Einwohner in Wachstumsraten 1970-1989 *(% per annum/% annuel/% pro Jahr)*
EUR12	3 787	11 670	2.2%
Belgique/België	119	12 008	2.3%
Danmark	80	15 586	1.7%
BR Deutschland	916	14 917	2.1%
Ellas	47	4 715	2.4%
España	262	6 769	2.1%
France	775	13 875	2.0%
Ireland	28	7 996	2.7%
Italia	637	11 102	2.6%
Luxembourg	6	14 712	2.4%
Nederland	183	12 388	1.3%
Portugal	32	3 157	3.1%
United Kingdom	701	12 280	2.1%
USA	5 960	23 956	1.9%
Japan	2 078	16 882	3.5%

QUELLE: Eurostat CRONOS SOURCE: Eurostat CRONOS SOURCE: Eurostat CRONOS

2. POPULATION AND LAND USE

Population and population density are major factors determining the use of natural resources, and the impact of human activities on the environment. By world standards, population growth in the EC is slow, and the rate of growth has been declining for many years. Even so, the population of the 12 EC Member States has increased by more than 40 million since 1960. The high population density in many parts of Europe means that the control of land use is a major element in national environment policies. At Community level, an environmental component in planning and development policies is supported by legislation implementing the Berne Convention on the conservation of European wildlife and natural habitats.

The land use statistics presented here were collected in the context of agricultural statistics, and are not very detailed. However, they do demonstrate the decline in the area of farmland and a corresponding increase in the "other land" category, which includes built-up land. The area of forest and other wooded land has been stable or, in certain countries, increasing, but changes in the type of forests are not revealed by these figures. It is expected that more detailed statistics on current land use, based on satellite data, and using a standard classification for all Member States, will be provided by the CORINE Land Cover project.

The statistics on urbanization, based on population broken down by settlement size, are difficult to compare between countries because of the different ways in which settlements are defined. However, there is a clear downward trend for most countries in the rural population, living in settlements of less than 2000 inhabitants. For large urban settlements, with more than 100 000 inhabitants, the picture is varied, with an apparent upward trend in Spain, a downward trend in the Netherlands, and no clear trend elsewhere.

Notes:

- Statistics on total land area (Table 2.4) are included for reference only; no significance should be attached to variations in land area reported in Member States' official statistics.
- "Total land area" means the total national territory excluding inland waters.

Community Legislation
Council Decision 82/72/EEC of 3 December 1981 concerning the conclusion of the Convention on the conservation of European wildlife and natural habitats

ANMERKUNG:
Bevölkerung: Jahresdurchschnitt
QUELLE: Eurostat CRONOS SOCI

NOTE:
Population: annual average
SOURCE: Eurostat CRONOS SOCI

NOTE:
Population: moyenne annuelle
SOURCE: Eurostat CRONOS SOCI

2.1.1
Bevölkerung
Population
Population

(1000)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	279 748	293 284	303 388	311 909	317 890	321 921	322 774	323 617	324 532	325 981
EUR10	231 071	240 350	252 099	260 565	267 301	270 738	273 259	273 898	274 671	275 478	276 850
EUR9	223 105	232 023	243 549	251 772	258 254	261 095	263 324	263 935	264 681	265 474	266 817
Belgique/België	8 868	9 119	9 448	9 638	9 795	9 847	9 858	9 862	9 870	9 902	9 938
Danmark	4 439	4 581	4 758	4 929	5 060	5 123	5 114	5 121	5 127	5 130	5 133
BR Deutschland	52 382	55 433	58 619	60 651	61 829	61 566	61 024	61 066	61 199	61 422	62 100
Ellas	7 966	8 327	8 550	8 793	9 047	9 643	9 934	9 964	9 990	10 004	10 033
España	:	30 455	32 057	33 779	35 515	37 386	38 505	38 668	38 696	38 766	38 811
France	43 428	45 684	48 758	50 772	52 699	53 880	55 170	55 394	55 630	55 884	56 161
Ireland	2 921	2 832	2 876	2 950	3 177	3 401	3 540	3 541	3 543	3 538	3 515
Italia	48 789	50 200	52 112	53 822	55 441	56 434	57 141	57 246	57 345	57 399	57 541
Luxembourg	306	315	333	340	361	365	367	370	372	375	377
Nederland	10 751	11 487	12 295	13 039	13 666	14 150	14 492	14 572	14 665	14 760	14 849
Portugal	:	8 943	9 129	9 044	9 093	9 766	10 157	10 208	10 250	10 288	10 320
United Kingdom	51 221	52 373	54 350	55 632	56 226	56 330	56 618	56 763	56 930	57 065	57 205

2.1.2
Bevölkerungszunahme
Population growth
Croissance démographique

(% per annum / % annuel / % pro Jahr)

	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1989
EUR12	:	0.95%	0.68%	0.55%	0.38%	0.25%	0.31%
EUR10	0.79%	0.95%	0.66%	0.51%	0.26%	0.19%	0.33%
EUR9	0.78%	0.97%	0.66%	0.51%	0.22%	0.17%	0.33%
Belgique/België	0.56%	0.71%	0.40%	0.32%	0.11%	0.02%	0.20%
Danmark	0.63%	0.76%	0.70%	0.53%	0.25%	-0.04%	0.09%
BR Deutschland	1.13%	1.12%	0.68%	0.38%	-0.09%	-0.18%	0.44%
Ellas	0.89%	0.53%	0.56%	0.57%	1.28%	0.60%	0.25%
España	:	1.03%	1.05%	1.00%	1.03%	0.59%	0.20%
France	1.01%	1.30%	0.81%	0.75%	0.44%	0.47%	0.44%
Ireland	-0.62%	0.31%	0.51%	1.48%	1.36%	0.80%	-0.18%
Italia	0.57%	0.75%	0.65%	0.59%	0.35%	0.25%	0.17%
Luxembourg	0.57%	1.12%	0.40%	1.18%	0.24%	0.13%	0.64%
Nederland	1.32%	1.36%	1.17%	0.94%	0.70%	0.48%	0.61%
Portugal	:	0.41%	-0.19%	0.11%	1.43%	0.78%	0.40%
United Kingdom	0.44%	0.74%	0.47%	0.21%	0.04%	0.10%	0.26%

2.1.3
Bevölkerungsdichte
Population density
Densité de population

(per/par/pro km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	143	145	145	146	146	147
EUR10	:	:	:	160	164	166	168	168	168	169	170
EUR9	149	154	162	168	172	174	175	176	176	177	177
Belgique/België	293	302	312	319	324	326	326	326	326	327	329
Danmark	105	108	112	116	119	121	121	121	121	121	121
BR Deutschland	214	227	240	248	253	252	250	250	251	251	254
Ellas	:	:	:	68	70	75	77	77	78	78	78
España	:	:	64	68	71	75	77	77	77	78	78
France	80	84	89	93	97	99	102	102	102	103	103
Ireland	42	41	42	43	46	49	51	51	51	51	51
Italia	166	171	177	183	189	192	194	195	195	195	196
Luxembourg	119	122	129	132	140	142	143	143	144	146	146
Nederland	324	342	368	386	404	417	414	394	396	399	390
Portugal	:	:	:	:	:	107	111	111	112	112	113
United Kingdom	213	217	226	231	233	234	235	236	236	237	238

QUELLE: Eurostat CRONOS ZPA1

SOURCE: Eurostat CRONOS ZPA1

SOURCE: Eurostat CRONOS ZPA1

2.2.1
Landfläche
Land area
Superficie

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	2 220 558	2 221 154	2 223 123	2 223 199	2 223 044	2 223 940
EUR10	:	:	:	1 628 891	1 628 965	1 629 525	1 630 067	1 632 085	1 632 143	1 631 989	1 632 885
EUR9	1 502 158	1 502 337	1 502 065	1 500 021	1 500 095	1 500 655	1 501 230	1 503 248	1 503 306	1 503 152	1 504 048
Belgique/België	30 238	30 238	30 244	30 245	30 239	30 249	30 249	30 249	30 249	30 249	30 249
Danmark	42 389	42 343	42 332	42 370	42 375	42 380	42 381	42 393	42 393	42 393	42 393
BR Deutschland	244 365	244 321	244 330	244 140	244 065	244 398	244 251	244 251	244 251	244 251	244 118
Ellas	:	:	:	128 870	128 870	128 870	128 837	128 837	128 837	128 837	128 837
España	:	:	499 941	499 950	499 686	499 402	499 457	499 408	499 426	499 425	499 425
France	545 534	545 326	545 289	543 038	543 012	543 282	542 992	542 993	542 975	542 836	542 819
Ireland	68 895	68 892	68 893	68 892	68 892	68 893	68 893	68 893	68 893	68 893	68 893
Italia	294 004	294 004	294 045	294 063	294 080	294 056	294 067	294 068	294 067	294 069	294 081
Luxembourg	2 576	2 576	2 576	2 576	2 576	2 576	2 576	2 576	2 576	2 576	2 576
Nederland	33 148	33 627	33 437	33 779	33 810	33 939	34 975	36 964	37 041	37 024	38 057
Portugal	:	:	:	:	:	91 630	91 630	91 630	91 630	91 630	91 630
United Kingdom	241 010	241 010	240 920	240 920	241 047	240 884	240 847	240 862	240 862	240 862	240 862

2.2.2
Ackerland
Arable land
Terres arables

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	675 542	677 076	677 187	677 804	673 810	:
EUR10	:	:	:	:	489 190	490 899	492 383	492 479	493 140	489 152	:
EUR9	521 509	524 677	506 997	477 985	460 132	461 892	463 249	463 229	463 890	459 902	:
Belgique/België	9 250	8 750	8 625	8 044	7 698	7 437	7 425	7 435	7 439	7 381	7 112
Danmark	27 033	27 509	26 832	26 504	26 449	26 396	26 010	25 920	25 950	25 774	25 600
BR Deutschland	81 648	79 776	75 786	75 345	75 333	72 636	72 332	72 438	72 620	72 529	72 651
Ellas	:	:	:	:	29 058	29 007	29 134	29 250	29 250	29 250	29 250
España	:	:	156 981	156 903	158 213	155 585	155 635	155 650	155 606	155 600	:
France	188 026	191 392	183 308	165 084	170 620	172 052	176 650	177 394	179 125	175 638	176 591
Ireland	12 261	12 258	10 969	9 824	10 009	11 409	10 991	10 620	10 450	10 290	:
Italia	122 795	122 466	117 697	113 209	92 641	93 871	90 675	90 612	90 214	90 100	89 169
Luxembourg	768	740	686	643	596	572	553	558	559	555	560
Nederland	10 058	9 951	9 190	8 240	8 017	8 268	8 603	8 731	8 923	8 970	:
Portugal	:	:	:	:	:	29 058	29 058	29 058	29 058	29 058	29 058
United Kingdom	69 671	71 835	73 904	71 093	68 768	69 251	70 010	69 520	68 612	68 666	:

2.2.3
Ackerland (Anteil an der Gesamtfläche)
Arable land (as proportion of total area)
Terres arables (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	30.4%	30.5%	30.5%	30.5%	30.3%	:
EUR10	:	:	:	:	30.0%	30.1%	30.2%	30.2%	30.2%	30.0%	:
EUR9	34.7%	34.9%	33.8%	31.9%	30.7%	30.8%	30.9%	30.8%	30.9%	30.6%	:
Belgique/België	30.6%	28.9%	28.5%	26.6%	25.5%	24.6%	24.5%	24.6%	24.6%	24.4%	23.5%
Danmark	63.8%	65.0%	63.4%	62.6%	62.4%	62.3%	61.4%	61.1%	61.2%	60.8%	60.4%
BR Deutschland	33.4%	32.7%	31.0%	30.9%	30.9%	29.7%	29.6%	29.7%	29.7%	29.7%	29.8%
Ellas	:	:	:	:	22.5%	22.5%	22.6%	22.7%	22.7%	22.7%	22.7%
España	:	:	31.4%	31.4%	31.7%	31.2%	31.2%	31.2%	31.2%	31.2%	:
France	34.5%	35.1%	33.6%	30.4%	31.4%	31.7%	32.5%	32.7%	33.0%	32.4%	32.5%
Ireland	17.8%	17.8%	15.9%	14.3%	14.5%	16.6%	16.0%	15.4%	15.2%	14.9%	:
Italia	41.8%	41.7%	40.0%	38.5%	31.5%	31.9%	30.8%	30.8%	30.7%	30.6%	30.3%
Luxembourg	29.8%	28.7%	26.6%	25.0%	23.1%	22.2%	21.5%	21.7%	21.7%	21.5%	21.8%
Nederland	30.3%	29.6%	27.5%	24.4%	23.7%	24.4%	24.6%	23.6%	24.1%	24.2%	:
Portugal	:	:	:	:	:	31.7%	31.7%	31.7%	31.7%	31.7%	31.7%
United Kingdom	28.9%	29.8%	30.7%	29.5%	28.5%	28.7%	29.1%	28.9%	28.5%	28.5%	:

2.2.4
Dauergrünland
Permanent grassland
Prairies permanentes

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	506 038	492 347	490 004	487 719	480 599	:
EUR10	:	:	:	444 312	447 121	431 373	417 459	415 876	413 263	406 489	:
EUR9	412 840	415 143	419 083	426 422	429 231	413 483	399 569	397 986	395 373	388 599	:
Belgique/België	7 335	7 687	7 305	7 424	7 152	6 664	6 402	6 322	6 258	6 206	6 147
Danmark	3 915	3 431	3 248	2 995	2 774	2 518	2 206	2 190	2 105	2 210	2 190
BR Deutschland	56 508	57 053	57 248	55 001	52 441	47 542	45 663	45 369	44 805	44 494	44 068
Ellas	:	:	:	17 890	17 890	17 890	17 890	17 890	17 890	17 890	17 890
España	:	:	110 922	92 598	72 258	67 055	67 278	66 518	66 847	66 500	66 500
France	123 396	130 626	134 594	140 932	134 030	128 490	121 995	120 926	118 939	117 675	115 981
Ireland	34 739	33 157	36 079	38 089	47 125	45 623	46 118	46 120	46 535	46 657	:
Italia	50 881	50 050	50 560	51 662	52 041	51 265	49 544	49 444	49 419	48 970	48 832
Luxembourg	613	645	645	691	705	713	706	705	695	690	689
Nederland	12 395	12 599	12 793	13 261	12 406	11 598	11 265	11 080	10 898	10 806	10 674
Portugal	:	:	:	:	:	7 610	7 610	7 610	7 610	7 610	7 610
United Kingdom	123 057	119 894	116 611	116 367	120 555	119 070	115 670	115 829	115 718	110 890	111 970

2.2.5
Dauergrünland (Anteil an der Gesamtfläche)
Permanent grassland (as proportion of total area)
Prairies permanentes (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	22.8%	22.2%	22.0%	21.9%	21.6%	:
EUR10	:	:	:	27.3%	27.4%	26.5%	25.6%	25.5%	25.3%	24.9%	:
EUR9	27.5%	27.6%	27.9%	28.4%	28.6%	27.6%	26.6%	26.5%	26.3%	25.9%	:
Belgique/België	24.3%	25.4%	24.2%	24.5%	23.7%	22.0%	21.2%	20.9%	20.7%	20.5%	20.3%
Danmark	9.2%	8.1%	7.7%	7.1%	6.5%	5.9%	5.2%	5.2%	5.0%	5.2%	5.2%
BR Deutschland	23.1%	23.4%	23.4%	22.5%	21.5%	19.5%	18.7%	18.6%	18.3%	18.2%	18.1%
Ellas	:	:	:	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%	13.9%
España	:	:	22.2%	18.5%	14.5%	13.4%	13.5%	13.3%	13.4%	13.3%	13.3%
France	22.6%	24.0%	24.7%	26.0%	24.7%	23.7%	22.5%	22.3%	21.9%	21.7%	21.4%
Ireland	50.4%	48.1%	52.4%	55.3%	68.4%	66.2%	66.9%	66.9%	67.5%	67.7%	:
Italia	17.3%	17.0%	17.2%	17.6%	17.7%	17.4%	16.8%	16.8%	16.8%	16.7%	16.6%
Luxembourg	23.8%	25.0%	25.0%	26.8%	27.4%	27.7%	27.4%	27.4%	27.0%	26.8%	26.7%
Nederland	37.4%	37.5%	38.3%	39.3%	36.7%	34.2%	32.2%	30.0%	29.4%	29.2%	28.0%
Portugal	:	:	:	:	:	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%
United Kingdom	51.1%	49.7%	48.4%	48.3%	50.0%	49.4%	48.0%	48.1%	48.0%	46.0%	46.5%

2.2.6
Dauerkulturen
Perennial crops
Cultures permanentes

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	119 788	118 702	118 254	118 859	:	:
EUR10	:	:	:	:	62 403	60 712	60 813	60 364	61 445	:	:
EUR9	53 156	53 987	52 231	52 168	52 794	50 470	50 397	49 951	49 766	48 962	:
Belgique/België	379	370	321	225	186	148	142	142	146	151	159
Danmark	152	132	151	156	149	138	122	114	113	110	:
BR Deutschland	1 640	1 696	1 981	2 026	2 041	1 790	1 811	1 809	1 814	1 816	1 838
Ellas	:	:	:	:	9 609	10 243	10 416	10 413	11 679	:	:
España	:	:	:	48 677	51 299	50 377	49 239	49 241	48 764	49 000	49 000
France	20 568	19 732	17 730	16 618	16 309	14 258	13 244	13 119	13 022	12 454	12 200
Ireland	46	45	43	34	25	27	23	24	23	24	:
Italia	28 324	30 083	30 180	31 676	32 829	32 999	34 076	33 764	33 665	33 440	33 250
Luxembourg	18	16	15	15	15	15	16	16	15	14	14
Nederland	711	701	635	505	436	375	360	353	359	362	371
Portugal	:	:	:	:	:	8 699	8 650	8 650	8 650	8 650	:
United Kingdom	1 318	1 212	1 174	914	803	720	603	610	610	590	:

2.2.7
Dauerkulturen (Anteil an der Gesamtfläche)
Perennial crops (as proportion of total area)
Cultures permanentes (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	5.4%	5.3%	5.3%	5.3%	:	:
EUR10	:	:	:	:	3.8%	3.7%	3.7%	3.7%	3.8%	:	:
EUR9	3.5%	3.6%	3.5%	3.5%	3.5%	3.4%	3.4%	3.3%	3.3%	3.3%	:
Belgique/België	1.3%	1.2%	1.1%	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Danmark	0.4%	0.3%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	:
BR Deutschland	0.7%	0.7%	0.8%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%
Ellas	:	:	:	:	7.5%	7.9%	8.1%	8.1%	9.1%	:	:
España	:	:	:	9.7%	10.3%	10.1%	9.9%	9.9%	9.8%	9.8%	9.8%
France	3.8%	3.6%	3.3%	3.1%	3.0%	2.6%	2.4%	2.4%	2.4%	2.3%	2.2%
Ireland	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	:
Italia	9.6%	10.2%	10.3%	10.8%	11.2%	11.2%	11.6%	11.5%	11.4%	11.4%	11.3%
Luxembourg	0.7%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Nederland	2.1%	2.1%	1.9%	1.5%	1.3%	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%
Portugal	:	:	:	:	:	9.5%	9.4%	9.4%	9.4%	9.4%	:
United Kingdom	0.5%	0.5%	0.5%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%	:

2.2.8
Waldfläche
Woodland
Superficies boisées

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	531 103	533 903	534 856	538 458	538 617	539 907
EUR10	:	:	:	368 339	372 981	376 310	379 110	380 063	383 665	383 824	385 114
EUR9	269 901	273 795	287 851	310 789	315 431	318 760	321 560	322 513	326 115	326 274	327 564
Belgique/België	5 960	6 020	6 070	6 130	6 130	6 170	6 170	6 170	6 170	6 170	6 170
Danmark	4 376	4 376	4 725	4 725	4 725	4 933	4 933	4 933	4 933	4 933	4 933
BR Deutschland	70 462	71 064	71 817	71 695	71 615	73 175	73 600	73 600	73 600	73 600	74 005
Ellas	:	:	:	57 550	57 550	57 550	57 550	57 550	57 550	57 550	57 550
España	:	:	134 000	142 000	149 435	125 110	125 110	125 110	125 110	125 110	125 110
France	114 692	115 821	123 665	144 481	145 760	146 149	146 176	146 417	146 883	147 793	147 825
Ireland	1 393	1 588	2 297	2 738	2 982	3 182	3 270	3 270	3 270	3 270	3 270
Italia	53 635	54 442	57 570	58 430	60 152	60 379	60 861	60 966	64 101	63 350	64 203
Luxembourg	863	863	830	830	826	821	886	886	886	886	886
Nederland	2 390	2 621	2 839	2 941	3 041	2 901	2 930	3 302	3 302	3 302	3 302
Portugal	:	:	:	:	:	29 683	29 683	29 683	29 683	29 683	29 683
United Kingdom	16 130	17 000	18 040	18 820	20 200	21 050	22 734	22 969	22 970	22 970	22 970

2.2.9
Waldfläche (Anteil an der Gesamtfläche)
Woodland (as proportion of total area)
Superficies boisées (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	23.9%	24.0%	24.1%	24.2%	24.2%	24.3%
EUR10	:	:	:	22.6%	22.9%	23.1%	23.3%	23.3%	23.5%	23.5%	23.6%
EUR9	18.0%	18.2%	19.2%	20.7%	21.0%	21.2%	21.4%	21.5%	21.7%	21.7%	21.8%
Belgique/België	19.7%	19.9%	20.1%	20.3%	20.3%	20.4%	20.4%	20.4%	20.4%	20.4%	20.4%
Danmark	10.3%	10.3%	11.2%	11.2%	11.1%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
BR Deutschland	28.8%	29.1%	29.4%	29.4%	29.3%	29.9%	30.1%	30.1%	30.1%	30.1%	30.3%
Ellas	:	:	:	44.7%	44.7%	44.7%	44.7%	44.7%	44.7%	44.7%	44.7%
España	:	:	26.8%	28.4%	29.9%	25.1%	25.0%	25.1%	25.1%	25.1%	25.1%
France	21.0%	21.2%	22.7%	26.6%	26.8%	26.9%	26.9%	27.0%	27.1%	27.2%	27.2%
Ireland	2.0%	2.3%	3.3%	4.0%	4.3%	4.6%	4.7%	4.7%	4.7%	4.7%	4.7%
Italia	18.2%	18.5%	19.6%	19.9%	20.5%	20.5%	20.7%	20.7%	21.8%	21.5%	21.8%
Luxembourg	33.5%	33.5%	32.2%	32.2%	32.1%	31.9%	34.4%	34.4%	34.4%	34.4%	34.4%
Nederland	7.2%	7.8%	8.5%	8.7%	9.0%	8.5%	8.4%	8.9%	8.9%	8.9%	8.7%
Portugal	:	:	:	:	:	32.4%	32.4%	32.4%	32.4%	32.4%	32.4%
United Kingdom	6.7%	7.1%	7.5%	7.8%	8.4%	8.7%	9.4%	9.5%	9.5%	9.5%	9.5%

2.2.10
Sonstige Flächen
Other land
Autres sols

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	353 027	363 534	367 132	364 667	:	:
EUR10	:	:	:	:	227 776	240 922	250 459	253 413	250 719	:	:
EUR9	220 124	209 397	210 356	206 699	216 133	229 862	239 731	242 799	241 372	252 466	:
Belgique/België	7 044	7 141	7 653	8 152	8 797	9 561	9 841	9 910	9 967	10 071	10 393
Danmark	6 277	6 194	6 676	7 291	7 578	7 695	8 411	8 536	8 593	8 666	:
BR Deutschland	30 064	30 617	33 295	35 639	38 083	45 009	46 401	46 591	46 969	47 369	47 055
Ellas	:	:	:	:	11 643	11 060	10 728	10 614	9 348	:	:
España	:	:	:	54 972	63 331	95 965	96 887	97 531	97 759	97 875	:
France	92 784	81 694	79 937	69 883	70 218	76 528	78 833	79 044	78 893	83 027	83 957
Ireland	19 066	20 455	18 115	16 817	7 361	7 262	7 100	7 469	7 225	7 262	:
Italia	31 158	29 743	30 838	31 896	49 236	48 332	51 701	52 072	49 459	50 999	51 427
Luxembourg	304	301	390	386	423	444	404	401	410	419	415
Nederland	5 603	5 254	5 331	5 988	6 771	7 452	8 478	10 120	10 181	10 185	:
Portugal	:	:	:	:	:	16 140	16 189	16 189	16 189	16 189	:
United Kingdom	27 823	27 999	28 121	30 646	27 666	27 579	28 563	28 657	29 675	34 469	:

2.2.11
Sonstige Flächen (Anteil an der Gesamtfläche)
Other land (as proportion of total area)
Autres sols (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	15.9%	16.4%	16.5%	16.4%	:	:
EUR10	:	:	:	:	14.0%	14.8%	15.4%	15.5%	15.4%	:	:
EUR9	14.7%	13.9%	14.0%	13.8%	14.4%	15.3%	16.0%	16.2%	16.1%	16.8%	:
Belgique/België	23.3%	23.6%	25.3%	27.0%	29.1%	31.6%	32.5%	32.8%	32.9%	33.3%	34.4%
Danmark	14.8%	14.6%	15.8%	17.2%	17.9%	18.2%	19.8%	20.1%	20.3%	20.4%	:
BR Deutschland	12.3%	12.5%	13.6%	14.6%	15.6%	18.4%	19.0%	19.1%	19.2%	19.4%	19.3%
Ellas	:	:	:	:	9.0%	8.6%	8.3%	8.2%	7.3%	:	:
España	:	:	:	11.0%	12.7%	19.2%	19.4%	19.5%	19.6%	19.6%	:
France	17.0%	15.0%	14.7%	12.9%	12.9%	14.1%	14.5%	14.6%	14.5%	15.3%	15.5%
Ireland	27.7%	29.7%	26.3%	24.4%	10.7%	10.5%	10.3%	10.8%	10.5%	10.5%	:
Italia	10.6%	10.1%	10.5%	10.8%	16.7%	16.4%	17.6%	17.7%	16.8%	17.3%	17.5%
Luxembourg	11.8%	11.7%	15.1%	15.0%	16.4%	17.2%	15.7%	15.6%	15.9%	16.3%	16.1%
Nederland	16.9%	15.6%	15.9%	17.7%	20.0%	22.0%	24.2%	27.4%	27.5%	27.5%	:
Portugal	:	:	:	:	:	17.6%	17.7%	17.7%	17.7%	17.7%	:
United Kingdom	11.5%	11.6%	11.7%	12.7%	11.5%	11.4%	11.9%	11.9%	12.3%	14.3%	:

2.2.12
Gewässer
Inland waters
Eaux interieures

(km2)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	35 059	35 591	35 690	35 691	35 849	35 935
EUR10	:	:	:	29 079	29 494	29 308	29 843	29 891	29 910	30 069	30 155
EUR9	24 628	25 338	25 547	25 959	26 374	26 188	26 723	26 771	26 790	26 949	27 035
Belgique/België	269	269	269	269	275	269	269	269	269	269	269
Danmark	636	700	700	700	700	700	700	700	700	700	700
BR Deutschland	4 042	4 115	4 203	4 434	4 551	4 245	4 443	4 443	4 443	4 443	4 501
Ellas	:	:	:	3 120	3 120	3 120	3 120	3 120	3 120	3 120	3 120
España	:	:	4 800	4 800	5 150	5 310	5 308	5 358	5 340	5 340	5 340
France	6 068	6 061	6 055	6 040	6 076	5 805	6 095	6 094	6 112	6 249	6 266
Ireland	1 390	1 390	1 390	1 390	1 390	1 390	1 390	1 390	1 390	1 390	1 390
Italia	7 210	7 220	7 200	7 190	7 180	7 210	7 210	7 210	7 210	7 210	7 200
Luxembourg	11	11	11	11	11	11	11	11	11	11	11
Nederland	1 992	2 502	2 648	2 845	3 138	3 344	3 339	3 378	3 379	3 400	3 420
Portugal	:	:	:	:	:	441	441	441	441	441	441
United Kingdom	3 010	3 070	3 070	3 080	3 053	3 213	3 266	3 277	3 277	3 277	3 277

2.2.13
Gewässer (Anteil an der Gesamtfläche)
Inland waters (as proportion of total area)
Eaux interieures (proportionnellement au total des superficies)

(%)

	1955	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
EUR10	:	:	:	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
EUR9	1.6%	1.7%	1.7%	1.7%	1.8%	1.7%	1.8%	1.8%	1.8%	1.8%	1.8%
Belgique/België	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Danmark	1.5%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
BR Deutschland	1.7%	1.7%	1.7%	1.8%	1.9%	1.7%	1.8%	1.8%	1.8%	1.8%	1.8%
Ellas	:	:	:	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
España	:	:	1.0%	1.0%	1.0%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
France	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%
Ireland	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Italia	2.5%	2.5%	2.4%	2.4%	2.4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.4%
Luxembourg	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Nederland	6.0%	7.4%	7.9%	8.4%	9.3%	9.9%	9.5%	9.1%	9.1%	9.2%	9.0%
Portugal	:	:	:	:	:	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
United Kingdom	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%

2.3
Stadt- und Landbevölkerung
Urban and rural population
Population urbaine et rurale

QUELLE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

2.3.1
Anteil der Bevölkerung in Siedlungsgebieten mit >100 000 Einwohnern
Proportion of population living in settlements >100 000 inhabitants
Proportion de la population vivant en agglomérations de >100 000 habitants

(%)

	±1950	±1960	±1970	±1980	±1985
Danmark	33.5% (1950)	38.7% (1960)	39.2% (1970)	35.5% (1981)	35.1% (1986)
BR Deutschland	32.8% (1950)	38.1% (1961)	36.4% (1970)	:	32.8% (1986)
Ellas	:	27.7% (1961)	18.7% (1971)	21.5% (1981)	:
España	24.0% (1950)	27.7% (1960)	36.8% (1970)	42.0% (1981)	42.0% (1986)
France	:	:	18.1% (1975)	16.2% (1982)	:
Nederland	31.3% (1951)	32.7% (1961)	28.8% (1971)	26.6% (1981)	25.5% (1987)
Portugal	:	:	:	11.6% (1981)	:
United Kingdom	54.9% (1951)	50.6% (1961)	46.7% (1971)	52.4% (1981)	:

2.3.2
Anteil der Bevölkerung in Siedlungsgebieten mit <2 000 Einwohnern
Proportion of population living in settlements <2 000 inhabitants
Proportion de la population vivant en agglomérations de <2 000 habitants

(%)

	±1950	±1960	±1970	±1980	±1985
Danmark	8.5% (1950)	11.5% (1960)	11.7% (1970)	17.2% (1981)	16.3% (1986)
BR Deutschland	8.4% (1950)	7.3% (1961)	6.5% (1970)	:	6.1% (1986)
Ellas	:	46.0% (1961)	37.0% (1971)	32.0% (1981)	:
España	16.7% (1950)	14.5% (1960)	11.0% (1970)	8.6% (1981)	8.2% (1986)
France	:	:	27.2% (1975)	26.8% (1982)	:
Nederland	1.2% (1951)	1.0% (1961)	0.7% (1971)	0.6% (1981)	0.2% (1987)
Portugal	:	:	:	57.0% (1981)	:
United Kingdom	28.0% (1951)	19.0% (1961)	21.2% (1971)	11.6% (1981)	:

3. ENERGY

Statistics on trends in energy use and on changes in energy sources are fundamental for the development of environmental policies, particularly in areas such as air pollution and carbon dioxide emissions.

The *energy balance sheets* published by Eurostat provide detailed data on energy production and consumption, and also on transformations in the energy sector. The statistics presented here, which are based on the energy balance sheets, have been chosen for their relevance in an environmental context. It should be noted that, at present, some renewable energy sources (wood, solar energy, wind energy) are not included in the balance sheets.

Statistics on *primary energy requirements* show the gross energy inputs for Member States, broken down by fuel type or source. For fossil fuels, these are based on the actual energy content of primary fuel production, adjusted for imports, exports and stock changes, before any transformations. For other energy sources (nuclear energy, hydroelectric energy, geothermal energy and electricity imports), the "partial substitution model" used by OECD and the International Energy Agency (IEA) allows the primary energy requirement to be calculated as if the same amount of electricity had been produced in conventional thermal power stations with an average efficiency of 38.5%. This approach has the practical advantage that the statistics showing trends in overall energy requirements are not distorted by changes in energy sources. It also permits a realistic assessment of the relative contribution of different energy sources.

These statistics show a large increase in total primary energy requirement over the period covered by the tables (an 82% increase for EUR9 for 1960-1987), but this increase took place before 1980. However, there have been consistent trends in primary energy sources over the whole period, with solid and liquid fuels tending to decline, while natural gas and nuclear energy have become steadily more important. Hydroelectric and geothermal energy are of minor importance in the Community as a whole. Imports of electricity are a significant primary energy source for some countries.

The *final energy consumption* tables show changes in total energy consumption, and in energy use by different sectors. Total final energy consumption is less than the total primary energy requirement because of transformation losses. The most important transformation loss occurs during electricity generation, where the output of electricity is usually less than 40% of the primary energy input.

It is evident that the proportion of energy consumed by transport has increased, with this increase being accounted for mainly by road transport. Industrial energy consumption has tended to decline as a proportion of total consumption, although the iron, steel and chemical industries still account for about 11% of total energy consumption. The proportion of energy consumed by the "households and others" sector (which includes other non-industrial consumers such as offices and public buildings) has also increased. In most countries, this sector now accounts for over 40% of total final energy consumption, although the proportion is much lower in Greece, Spain, Luxembourg and Portugal.

These changes have to be seen in the context of a large increase in total final energy consumption (an 84% increase for EUR9 over the period 1960-1987), although total energy consumption has been relatively stable since 1980.

Electricity accounts for an increasing proportion of final energy consumption, and is treated in detail here because of the special environmental significance of large power stations, both nuclear and conventional (fossil-fuel based). *Electricity generation* data differ from *consumption* data because of distribution losses, consumption within the energy sector and exports or imports of electricity. Policy differences between Member States in relation to electricity generation are clearly demonstrated, with four countries (Belgium, Federal Republic of Germany, Spain and France) showing increasing dependence on nuclear energy. Three other countries (Italy, Netherlands, United Kingdom) have lower levels of dependence on nuclear power, which have not greatly increased over recent years. In the remaining five Member States, nuclear energy is not used for commercial electricity generation, although one of these (Luxembourg) imports over 90% of its electricity, much of it originating from nuclear power stations in neighbouring countries.

Documentation

Eurostat: Energy balance sheets 1986-1987
Office for Official Publications of the European Communities

Eurostat: Principles and methods of the energy balance sheets
Office for Official Publications of the European Communities

Energy balances of OECD countries 1986-1987
OECD/IEA, Paris

Major themes in energy. *Energy in Europe*, September 1989 Special Issue, Directorate General for Energy, Brussels.
Office for Official Publications of the European Communities

3.1
Primärenergiebedarf
Primary energy requirement
Besoins en énergie primaire

QUELLE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

3.1.1
Total
Total
Insgesamt

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	44 000 143	43 417 031	43 990 331	44 832 377	45 485 003	45 985 743
EUR10	:	:	:	36 505 932	40 465 627	39 853 004	40 398 531	41 140 387	41 423 112	41 812 681
EUR9	21 242 973	27 064 087	34 719 169	36 014 711	39 811 873	39 101 071	39 652 944	40 361 367	40 595 700	40 925 822
Belgique/België	962 918	1 234 097	1 709 594	1 728 222	1 886 273	1 776 326	1 829 448	1 839 041	1 861 807	1 889 661
Danmark	360 299	567 364	814 299	729 571	783 737	784 110	785 966	809 635	774 403	761 379
BR Deutschland	6 119 808	7 699 845	9 878 218	10 073 119	11 690 743	11 069 636	11 094 585	11 122 831	11 222 925	11 054 496
Ellas	:	:	:	491 221	653 754	751 933	745 587	779 020	827 413	886 859
Espana	:	:	:	:	3 077 974	3 062 242	3 069 484	3 140 588	3 450 123	3 520 532
France	3 529 818	4 703 264	6 273 337	6 917 239	8 033 344	8 025 679	8 144 398	8 333 220	8 273 922	8 439 534
Ireland	128 351	172 312	246 532	269 935	344 318	371 846	382 241	396 977	400 126	402 948
Italia	1 926 232	3 146 845	4 768 256	5 338 876	5 901 709	5 885 217	5 965 551	6 243 915	6 421 933	6 641 954
Luxembourg	137 660	154 792	181 225	175 777	167 770	150 042	148 233	146 846	152 442	162 926
Nederland	920 139	1 311 460	2 052 160	2 442 271	2 702 056	2 584 446	2 662 088	2 743 401	2 714 515	2 734 022
Portugal	:	:	:	:	456 542	501 786	522 316	551 402	611 767	652 531
United Kingdom	7 157 748	8 074 108	8 795 549	8 339 700	8 301 923	8 453 768	8 640 435	8 725 501	8 773 625	8 838 903

3.1.2
Total per capita
Total par habitant
Insgesamt je Einwohner

(TJ pro Kopf / per capita / par habitant)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	138.413	134.869	136.288	138.535	140.156	141.069
EUR10	:	:	:	136.573	149.464	145.843	147.495	149.780	150.368	151.030
EUR9	91.556	111.124	137.899	139.455	152.480	148.490	150.238	152.490	152.918	153.386
Belgique/België	105.598	130.619	177.384	176.443	191.562	180.188	185.509	186.323	188.029	190.151
Danmark	78.651	119.242	165.212	144.187	152.984	153.335	153.494	157.916	150.971	148.342
BR Deutschland	110.400	131.354	162.871	162.918	189.889	181.398	181.682	181.748	182.720	178.011
Ellas	:	:	:	54.300	67.799	75.691	74.831	77.980	82.705	88.394
Espana	:	:	:	:	82.329	79.529	79.380	81.160	88.998	90.709
France	77.266	96.462	123.559	131.259	149.097	145.471	147.026	149.797	148.055	150.275
Ireland	45.322	59.914	83.567	84.957	101.240	105.041	107.963	112.046	113.094	114.637
Italia	38.371	60.386	88.593	96.298	104.577	102.994	104.208	108.884	111.882	115.431
Luxembourg	437.154	464.841	533.328	487.591	459.771	408.612	401.171	395.065	406.621	432.507
Nederland	80.105	106.669	157.392	178.708	190.961	178.341	182.681	187.071	183.913	184.127
Portugal	:	:	:	:	46.747	49.403	51.170	53.796	59.466	63.230
United Kingdom	136.670	148.559	158.102	148.325	147.381	149.313	152.219	153.267	153.747	154.513

3.1.3
Natural gas
Gaz naturel
Erdgas

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	7 163 899	7 733 030	7 824 810	8 290 230	8 061 110	8 434 040
EUR10	:	:	:	5 847 100	7 090 939	7 634 560	7 717 890	8 180 510	7 920 940	8 248 230
EUR9	366 000	629 100	2 532 699	5 847 100	7 090 939	7 631 570	7 713 790	8 175 810	7 915 350	8 242 570
Belgique/België	2 200	2 600	143 100	341 300	373 070	306 820	277 540	306 060	302 060	335 680
Danmark	0	0	0	0	0	23 700	43 060	54 680	58 360	62 390
BR Deutschland	27 500	102 400	530 400	1 439 400	1 871 030	1 726 420	1 717 630	1 904 180	1 862 600	1 958 060
Ellas	:	:	:	0	0	2 990	4 100	4 700	5 590	5 660
Espana	:	:	:	:	72 960	98 470	106 920	109 720	140 170	185 810
France	100 600	172 600	343 800	658 200	903 140	1 016 200	1 018 660	1 051 430	994 090	1 023 800
Ireland	0	0	0	0	30 840	81 480	56 900	56 520	68 100	78 330
Italia	221 000	265 400	444 100	764 400	951 570	1 138 670	1 208 980	1 342 330	1 405 390	1 544 930
Luxembourg	0	0	500	14 400	17 770	12 700	12 620	14 430	14 850	16 970
Nederland	11 900	55 200	644 900	1 314 700	1 273 540	1 353 360	1 361 640	1 407 200	1 275 060	1 306 700
Portugal	:	:	:	:	0	0	0	0	0	0
United Kingdom	2 800	30 900	425 900	1 314 700	1 669 980	1 972 220	2 016 760	2 038 980	1 934 840	1 915 710

3.1.4
Natural gas as proportion of Total
Gaz naturel proportionnellement au Total
Erdgas als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	16.3%	17.8%	17.8%	18.5%	17.7%	18.3%
EUR10	:	:	:	16.0%	17.5%	19.2%	19.1%	19.9%	19.1%	19.7%
EUR9	1.7%	2.3%	7.3%	16.2%	17.8%	19.5%	19.5%	20.3%	19.5%	20.1%
Belgique/België	0.2%	0.2%	8.4%	19.7%	19.8%	17.3%	15.2%	16.6%	16.2%	17.8%
Danmark	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	5.5%	6.8%	7.5%	8.2%
BR Deutschland	0.4%	1.3%	5.4%	14.3%	16.0%	15.6%	15.5%	17.1%	16.6%	17.7%
Ellas	:	:	:	0.0%	0.0%	0.4%	0.5%	0.6%	0.7%	0.6%
Espana	:	:	:	:	2.4%	3.2%	3.5%	3.5%	4.1%	5.3%
France	2.9%	3.7%	5.5%	9.5%	11.2%	12.7%	12.5%	12.6%	12.0%	12.1%
Ireland	0.0%	0.0%	0.0%	0.0%	9.0%	21.9%	14.9%	14.2%	17.0%	19.4%
Italia	11.5%	8.4%	9.3%	14.3%	16.1%	19.3%	20.3%	21.5%	21.9%	23.3%
Luxembourg	0.0%	0.0%	0.3%	8.2%	10.6%	8.5%	8.5%	9.8%	9.7%	10.4%
Nederland	1.3%	4.2%	31.4%	53.8%	47.1%	52.4%	51.1%	51.3%	47.0%	47.8%
Portugal	:	:	:	:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	0.0%	0.4%	4.8%	15.8%	20.1%	23.3%	23.3%	23.4%	22.1%	21.7%

3.1.5
Liquid fuels
Combustibles liquides
Flüssige Brennstoffe

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	23 422 140	19 363 370	19 841 960	19 953 399	20 429 990	20 584 040
EUR10	:	:	:	20 365 000	21 011 990	17 415 750	17 859 030	17 916 800	18 174 820	18 247 350
EUR9	6 208 000	12 391 000	19 794 000	20 015 000	20 527 620	16 954 560	17 425 000	17 458 570	17 688 520	17 704 780
Belgique/België	281 000	574 000	1 006 000	945 000	958 660	729 890	812 040	793 310	805 740	786 460
Danmark	202 000	410 000	758 000	632 000	553 570	446 130	438 610	418 830	385 780	372 270
BR Deutschland	1 321 000	3 167 000	5 255 000	5 256 000	5 732 000	4 549 840	4 777 860	4 651 320	4 712 710	4 419 240
Ellas	:	:	:	350 000	484 370	461 190	434 030	458 230	486 300	542 570
Espana	:	:	:	:	2 064 210	1 595 300	1 604 970	1 669 360	1 862 600	1 850 090
France	1 158 000	2 236 000	3 841 000	4 443 000	4 569 430	3 525 820	3 544 290	3 617 550	3 560 230	3 674 960
Ireland	49 000	97 000	166 000	213 000	235 390	174 310	200 470	184 320	169 300	165 170
Italia	888 000	2 016 000	3 418 000	3 704 000	3 888 500	3 369 460	3 415 520	3 617 850	3 684 240	3 812 160
Luxembourg	9 000	34 000	55 000	55 000	45 940	44 210	48 190	54 460	55 930	61 400
Nederland	456 000	865 000	1 195 000	997 000	1 220 620	870 800	968 280	982 800	1 007 470	1 001 410
Portugal	:	:	:	:	345 940	352 320	377 960	367 240	392 570	486 600
United Kingdom	1 844 000	2 992 000	4 100 000	3 770 000	3 323 510	3 244 100	3 219 740	3 138 130	3 307 120	3 411 710

3.1.6
Liquid fuels as proportion of total
Combustibles liquides proportionnellement au total
Flüssige Brennstoffe als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	53.2%	44.6%	45.1%	44.5%	44.9%	44.8%
EUR10	:	:	:	55.8%	51.9%	43.7%	44.2%	43.6%	43.9%	43.6%
EUR9	29.2%	45.8%	57.0%	55.6%	51.6%	43.4%	43.9%	43.3%	43.6%	43.3%
Belgique/België	29.2%	46.5%	58.8%	54.7%	50.8%	41.1%	44.4%	43.1%	43.3%	41.6%
Danmark	56.1%	72.3%	93.1%	86.6%	70.6%	56.9%	55.8%	51.7%	49.8%	48.9%
BR Deutschland	21.6%	41.1%	53.2%	52.2%	49.0%	41.1%	43.1%	41.8%	42.0%	40.0%
Ellas	:	:	:	71.3%	74.1%	61.3%	58.2%	58.8%	58.8%	61.2%
Espana	:	:	:	:	67.1%	52.1%	52.3%	53.2%	54.0%	52.6%
France	32.8%	47.5%	61.2%	64.2%	56.9%	43.9%	43.5%	43.4%	43.0%	43.5%
Ireland	38.2%	56.3%	67.3%	78.9%	68.4%	46.9%	52.4%	46.4%	42.3%	41.0%
Italia	46.1%	64.1%	71.7%	69.4%	65.9%	57.3%	57.3%	57.9%	57.4%	57.4%
Luxembourg	6.5%	22.0%	30.3%	31.3%	27.4%	29.5%	32.5%	37.1%	36.7%	37.7%
Nederland	49.6%	66.0%	58.2%	40.8%	45.2%	33.7%	36.4%	35.8%	37.1%	36.6%
Portugal	:	:	:	:	75.8%	70.2%	72.4%	66.6%	64.2%	74.6%
United Kingdom	25.8%	37.1%	46.6%	45.2%	40.0%	38.4%	37.3%	36.0%	37.7%	38.6%

3.1.7
Solid fuels
Combustibles solides
Feste Brennstoffe

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	9 973 050	10 004 629	9 691 549	9 680 479	9 491 879	9 659 660
EUR10	:	:	:	8 125 200	9 325 540	9 152 899	8 873 339	8 874 809	8 751 070	8 758 890
EUR9	13 573 000	12 666 100	10 713 600	8 003 200	9 193 740	8 898 289	8 608 609	8 590 459	8 440 560	8 441 690
Belgique/België	677 900	654 900	554 000	384 000	459 270	413 850	370 310	362 970	367 410	403 080
Danmark	157 000	141 000	95 000	89 000	241 440	309 060	302 010	311 580	287 770	233 940
BR Deutschland	4 619 100	4 255 900	3 811 000	2 957 200	3 462 830	3 447 480	3 275 900	3 139 020	3 117 720	3 124 210
Ellas	:	:	:	122 000	131 800	254 610	264 730	284 350	310 510	317 200
Espana	:	:	:	:	628 960	823 900	771 360	735 430	658 340	800 060
France	1 889 400	1 838 300	1 506 200	1 055 000	1 304 540	1 021 790	853 240	792 890	766 850	844 800
Ireland	70 000	67 000	73 000	52 000	70 270	108 290	116 300	149 670	154 570	152 980
Italia	321 000	346 000	373 000	346 000	481 910	634 720	595 870	619 050	582 720	572 860
Luxembourg	128 400	113 000	110 400	83 000	76 580	59 340	54 020	43 800	45 870	48 140
Nederland	451 200	391 000	212 000	102 000	171 480	275 870	272 350	286 180	342 790	341 730
Portugal	:	:	:	:	18 550	27 830	46 850	70 240	82 470	100 710
United Kingdom	5 259 000	4 859 000	3 979 000	2 935 000	2 925 420	2 627 890	2 768 610	2 885 300	2 774 860	2 719 950

3.1.8
Solid fuels as proportion of total
Combustibles solides proportionnellement au total
Feste Brennstoffe als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	22.7%	23.0%	22.0%	21.6%	20.9%	21.0%
EUR10	:	:	:	22.3%	23.0%	23.0%	22.0%	21.6%	21.1%	20.9%
EUR9	63.9%	46.8%	30.9%	22.2%	23.1%	22.8%	21.7%	21.3%	20.8%	20.6%
Belgique/België	70.4%	53.1%	32.4%	22.2%	24.3%	23.3%	20.2%	19.7%	19.7%	21.3%
Danmark	43.6%	24.9%	11.7%	12.2%	30.8%	39.4%	38.4%	38.5%	37.2%	30.7%
BR Deutschland	75.5%	55.3%	38.6%	29.4%	29.6%	31.1%	29.5%	28.2%	27.8%	28.3%
Ellas	:	:	:	24.8%	20.2%	33.9%	35.5%	36.5%	37.5%	35.8%
Espana	:	:	:	:	20.4%	26.9%	25.1%	23.4%	19.1%	22.7%
France	53.5%	39.1%	24.0%	15.3%	16.2%	12.7%	10.5%	9.5%	9.3%	10.0%
Ireland	54.5%	38.9%	29.6%	19.3%	20.4%	29.1%	30.4%	37.7%	38.6%	38.0%
Italia	16.7%	11.0%	7.8%	6.5%	8.2%	10.8%	10.0%	9.9%	9.1%	8.6%
Luxembourg	93.3%	73.0%	60.9%	47.2%	45.6%	39.5%	36.4%	29.8%	30.1%	29.5%
Nederland	49.0%	29.8%	10.3%	4.2%	6.3%	10.7%	10.2%	10.4%	12.6%	12.5%
Portugal	:	:	:	:	4.1%	5.5%	9.0%	12.7%	13.5%	15.4%
United Kingdom	73.5%	60.2%	45.2%	35.2%	35.2%	31.1%	32.0%	33.1%	31.6%	30.8%

3.1.9
Nuclear energy
Energie nucléaire
Kernenergie

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	1 553 299	4 531 948	4 887 039	5 032 805	5 435 584	5 817 636
EUR10	:	:	:	784 935	1 504 805	4 269 714	4 536 779	4 646 986	4 963 688	5 292 831
EUR9	23 896	196 364	386 493	784 935	1 504 805	4 269 714	4 536 779	4 646 986	4 963 688	5 292 831
Belgique/België	0	0	519	63 377	117 351	323 532	368 364	392 416	403 039	385 403
Danmark	0	0	0	0	0	0	0	0	0	0
BR Deutschland	0	1 039	56 364	200 000	408 623	1 177 273	1 118 156	1 220 389	1 356 623	1 396 883
Ellas	:	:	:	0	0	0	0	0	0	0
Espana	:	:	:	:	48 494	262 234	350 260	385 818	471 896	524 805
France	1 299	9 870	53 506	171 169	572 727	2 095 480	2 376 519	2 482 779	2 576 311	2 841 948
Ireland	0	0	0	0	0	0	0	0	0	0
Italia	0	32 727	29 610	35 584	20 649	65 688	81 896	1 636	0	0
Luxembourg	0	0	0	0	0	0	0	0	0	0
Nederland	0	0	3 377	31 169	39 273	36 468	39 429	33 247	34 364	37 584
Portugal	:	:	:	:	0	0	0	0	0	0
United Kingdom	22 597	152 727	243 117	283 636	346 182	571 273	552 416	516 519	593 351	631 013

3.1.10
Nuclear energy as proportion of total
Energie nucléaire proportionnellement au total
Kernenergie als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	3.5%	10.4%	11.1%	11.2%	12.0%	12.7%
EUR10	:	:	:	2.2%	3.7%	10.7%	11.2%	11.3%	12.0%	12.7%
EUR9	0.1%	0.7%	1.1%	2.2%	3.8%	10.9%	11.4%	11.5%	12.2%	12.9%
Belgique/België	0.0%	0.0%	0.0%	3.7%	6.2%	18.2%	20.1%	21.3%	21.6%	20.4%
Danmark	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BR Deutschland	0.0%	0.0%	0.6%	2.0%	3.5%	10.6%	10.1%	11.0%	12.1%	12.6%
Ellas	:	:	:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Espana	:	:	:	:	1.6%	8.6%	11.4%	12.3%	13.7%	14.9%
France	0.0%	0.2%	0.9%	2.5%	7.1%	26.1%	29.2%	29.8%	31.1%	33.7%
Ireland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Italia	0.0%	1.0%	0.6%	0.7%	0.3%	1.1%	1.4%	0.0%	0.0%	0.0%
Luxembourg	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nederland	0.0%	0.0%	0.2%	1.3%	1.5%	1.4%	1.5%	1.2%	1.3%	1.4%
Portugal	:	:	:	:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	0.3%	1.9%	2.8%	3.4%	4.2%	6.8%	6.4%	5.9%	6.8%	7.1%

3.1.11
Hydroelectric energy
Energie hydro-électrique
Wasserkraft

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	1 671 584	1 583 844	1 545 377	1 625 428	1 797 428	1 227 428
EUR10	:	:	:	1 160 000	1 320 364	1 190 857	1 217 792	1 285 221	1 353 584	996 286
EUR9	964 156	1 020 519	1 117 143	1 141 039	1 288 519	1 164 623	1 187 091	1 259 247	1 331 454	978 519
Belgique/België	1 558	2 597	2 338	2 338	2 597	2 649	3 195	4 078	3 429	2 909
Danmark	260	260	260	260	286	909	1 532	1 974	3 117	4 312
BR Deutschland	113 247	133 766	152 987	147 013	162 416	145 247	155 818	172 416	169 740	154 519
Ellas	:	:	:	18 961	31 844	26 234	30 701	25 974	22 130	17 766
Espana	:	:	:	:	276 286	292 364	247 714	254 571	329 455	176 805
France	381 558	437 403	533 506	566 494	654 597	584 805	589 740	666 182	722 181	448 208
Ireland	9 351	8 312	7 532	4 935	7 818	7 766	8 571	6 468	8 156	6 468
Italia	428 571	398 701	377 403	383 636	423 117	384 234	384 286	369 403	380 338	318 468
Luxembourg	260	779	779	779	883	701	805	935	857	649
Nederland	0	0	0	0	0	26	26	26	156	571
Portugal	:	:	:	:	74 935	100 623	79 870	85 636	114 390	54 338
United Kingdom	29 351	38 701	42 338	35 584	36 805	38 286	43 117	37 766	43 480	42 416

3.1.12
Hydroelectric energy as proportion of total
Energie hydro-électrique proportionnellement au total
Wasserkraft als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	3.8%	3.6%	3.5%	3.6%	4.0%	2.7%
EUR10	:	:	:	3.2%	3.3%	3.0%	3.0%	3.1%	3.3%	2.4%
EUR9	4.5%	3.8%	3.2%	3.2%	3.2%	3.0%	3.0%	3.1%	3.3%	2.4%
Belgique/België	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Danmark	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	0.4%	0.6%
BR Deutschland	1.9%	1.7%	1.5%	1.5%	1.4%	1.3%	1.4%	1.6%	1.5%	1.4%
Ellas	:	:	:	3.9%	4.9%	3.5%	4.1%	3.3%	2.7%	2.0%
Espana	:	:	:	:	9.0%	9.5%	8.1%	8.1%	9.5%	5.0%
France	10.8%	9.3%	8.5%	8.2%	8.1%	7.3%	7.2%	8.0%	8.7%	5.3%
Ireland	7.3%	4.8%	3.1%	1.8%	2.3%	2.1%	2.2%	1.6%	2.0%	1.6%
Italia	22.2%	12.7%	7.9%	7.2%	7.2%	6.5%	6.4%	5.9%	5.9%	4.8%
Luxembourg	0.2%	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.4%
Nederland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	:	:	:	:	16.4%	20.1%	15.3%	15.5%	18.7%	8.3%
United Kingdom	0.4%	0.5%	0.5%	0.4%	0.4%	0.5%	0.5%	0.4%	0.5%	0.5%

3.1.13
Geothermal energy
Energie géothermique
Erdwärme

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	68 700	84 900	89 000	81 100	79 080	71 120	72 220	77 230	76 960	78 160
EUR10	68 700	84 900	89 000	81 100	79 080	71 120	72 220	77 230	76 960	78 160
EUR9	68 700	84 900	89 000	81 100	79 080	71 120	72 220	77 230	76 960	78 160
Italia	68 700	84 900	89 000	81 100	79 080	71 120	72 220	77 230	76 960	78 160

3.1.14
Geothermal energy as proportion of total
Energie géothermique proportionnellement au total
Erdwärme als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
EUR10	:	:	:	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
EUR9	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Italia	3.6%	2.7%	1.9%	1.5%	1.3%	1.2%	1.2%	1.2%	1.2%	1.2%

3.1.15
Net electricity imports
Importations nettes d'électricité
Nettostromeinfuhren

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	137 091	129 091	127 377	172 805	192 052	184 779
EUR10	:	:	:	142 597	132 909	118 104	121 480	158 831	182 052	190 935
EUR9	39 221	76 104	86 234	142 338	127 169	111 195	109 455	153 065	179 169	187 273
Belgique/België	260	0	3 636	-7 792	-24 675	-416	-2 000	-19 792	-19 870	-23 870
Danmark	1 039	16 104	-38 961	8 312	-11 558	4 312	753	22 571	39 377	88 468
BR Deutschland	38 961	39 740	72 468	73 506	53 844	23 377	49 221	35 506	3 532	1 584
Ellas	:	:	:	260	5 740	6 909	12 026	5 766	2 883	3 662
Espana	:	:	:	:	-12 935	-10 026	-11 740	-14 312	-12 338	-17 039
France	-1 039	9 091	-4 675	23 377	28 909	-218 416	-238 052	-277 610	-345 740	-394 182
Ireland	0	0	0	0	0	0	0	0	0	0
Italia	-1 039	3 117	37 143	24 156	56 883	221 325	206 779	216 416	292 286	315 377
Luxembourg	0	7 013	14 545	22 597	26 597	33 091	32 597	33 221	34 935	35 766
Nederland	1 039	260	-3 117	-2 597	-2 857	47 922	20 364	33 948	54 675	46 026
Portugal	:	:	:	:	17 117	21 013	17 636	28 286	22 338	10 883
United Kingdom	0	779	5 195	779	26	0	39 792	108 805	119 974	118 104

3.1.16
Net electricity imports, as proportion of Total
Importations nettes d'électricité, proportionnellement au total
Nettostromeinfuhren als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
EUR10	:	:	:	0.4%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%
EUR9	0.2%	0.3%	0.2%	0.4%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%
Belgique/België	0.0%	0.0%	0.2%	-0.5%	-1.3%	0.0%	-0.1%	-1.1%	-1.1%	-1.3%
Danmark	0.3%	2.8%	-4.8%	1.1%	-1.5%	0.5%	0.1%	2.8%	5.1%	11.6%
BR Deutschland	0.6%	0.5%	0.7%	0.7%	0.5%	0.2%	0.4%	0.3%	0.0%	0.0%
Ellas	:	:	:	0.1%	0.9%	0.9%	1.6%	0.7%	0.3%	0.4%
Espana	:	:	:	:	-0.4%	-0.3%	-0.4%	-0.5%	-0.4%	-0.5%
France	0.0%	0.2%	-0.1%	0.3%	0.4%	-2.7%	-2.9%	-3.3%	-4.2%	-4.7%
Ireland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Italia	-0.1%	0.1%	0.8%	0.5%	1.0%	3.8%	3.5%	3.5%	4.6%	4.7%
Luxembourg	0.0%	4.5%	8.0%	12.9%	15.9%	22.1%	22.0%	22.6%	22.9%	22.0%
Nederland	0.1%	0.0%	-0.2%	-0.1%	-0.1%	1.9%	0.8%	1.2%	2.0%	1.7%
Portugal	:	:	:	:	3.7%	4.2%	3.4%	5.1%	3.7%	1.7%
United Kingdom	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.5%	1.2%	1.4%	1.3%

3.2
Endenergieverbrauch
Final energy consumption
Consommation finale énergétique

QUELLE: Eurostat CRONOS ZEN2 SOURCE: Eurostat CRONOS ZEN2 SOURCE: Eurostat CRONOS ZEN2

3.2.1
Total
Total
Insgesamt

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	29 000 949	28 310 108	28 854 719	29 483 789	29 605 409	29 862 848
EUR10	:	:	:	24 991 000	26 889 059	26 168 539	26 687 309	27 241 579	27 162 149	27 375 719
EUR9	14 478 000	18 091 000	23 167 000	24 664 000	26 446 609	25 682 729	26 212 859	26 730 449	26 630 619	26 816 599
Belg'que/België	735 000	945 000	1 231 000	1 240 000	1 338 270	1 200 120	1 240 960	1 259 870	1 280 360	1 283 330
Danmark	240 000	412 000	645 000	579 000	608 310	586 660	575 140	588 060	568 830	543 230
BR Deutschland	4 226 000	5 295 000	6 591 000	6 959 000	7 586 310	7 451 700	7 597 320	7 709 710	7 601 820	7 383 770
Ellas	:	:	:	327 000	442 450	485 810	474 450	511 130	531 530	559 120
Espana	:	:	:	:	1 813 630	1 827 799	1 855 570	1 908 180	2 085 660	2 112 830
France	2 514 000	3 322 000	4 364 000	4 864 000	5 363 740	5 093 650	5 133 690	5 192 970	5 133 890	5 236 850
Ireland	93 000	120 000	183 000	194 000	239 890	255 740	271 530	276 340	276 940	295 800
Italia	1 229 000	1 958 000	3 236 000	3 623 000	4 041 260	3 929 590	3 977 690	4 197 260	4 217 960	4 446 620
Luxembourg	119 000	137 000	159 000	148 000	141 100	124 070	122 230	120 560	124 440	133 830
Nederland	593 000	872 000	1 334 000	1 650 000	1 827 540	1 771 790	1 821 409	1 806 660	1 745 660	1 786 610
Portugal	:	:	:	:	298 260	313 770	311 840	334 030	357 600	374 300
United Kingdom	4 729 000	5 030 000	5 424 000	5 407 000	5 300 190	5 269 410	5 472 890	5 579 020	5 680 720	5 706 560

3.2.2
All industry, as proportion of total
Toutes industries, proportionnellement au total
Gesamtindustrie, als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	35.5%	31.7%	30.4%	30.8%	31.0%	31.2%
EUR10	:	:	:	35.3%	36.2%	32.6%	31.3%	31.7%	32.0%	32.4%
EUR9	43.2%	41.2%	39.3%	35.4%	36.4%	32.8%	31.5%	31.9%	32.3%	32.7%
Belgique/België	50.2%	47.7%	47.9%	42.6%	40.8%	36.1%	34.1%	34.3%	36.0%	36.7%
Danmark	32.5%	24.8%	25.0%	19.0%	20.5%	18.5%	18.4%	18.3%	18.8%	19.0%
BR Deutschland	49.7%	43.9%	41.2%	37.1%	36.3%	33.7%	32.1%	32.7%	33.3%	34.7%
Ellas	:	:	:	41.3%	37.3%	30.8%	31.3%	30.6%	30.0%	29.8%
Espana	:	:	:	:	43.2%	39.0%	38.1%	37.1%	35.8%	34.9%
France	49.7%	47.8%	44.1%	36.4%	35.1%	30.4%	28.1%	28.8%	28.9%	29.1%
Ireland	28.0%	25.0%	32.8%	30.9%	28.3%	28.4%	26.4%	27.4%	27.0%	26.2%
Italia	54.5%	51.7%	45.2%	41.5%	39.4%	33.0%	32.9%	33.5%	33.0%	33.7%
Luxembourg	88.2%	86.1%	83.6%	76.4%	67.8%	59.7%	57.1%	53.9%	54.9%	55.1%
Nederland	40.6%	37.0%	33.7%	30.1%	31.7%	32.6%	32.0%	30.9%	31.2%	28.5%
Portugal	:	:	:	:	43.8%	41.4%	38.3%	38.0%	37.8%	37.5%
United Kingdom	39.4%	41.1%	43.7%	38.1%	29.5%	25.6%	24.9%	25.5%	25.8%	25.6%

3.2.3
Iron and steel industry, as proportion of total
Industries sidérurgiques, proportionnellement au total
Eisen- und Stahlindustrie als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	8.8%	8.1%	7.2%	6.9%	7.1%	7.2%
EUR10	:	:	:	10.4%	8.9%	8.0%	7.1%	6.9%	7.2%	7.3%
EUR9	16.3%	14.3%	12.8%	10.5%	9.0%	8.1%	7.2%	7.0%	7.3%	7.4%
Belgique/België	22.4%	21.0%	20.1%	17.3%	16.6%	16.4%	14.2%	14.1%	15.6%	16.2%
Danmark	1.7%	0.7%	1.1%	1.2%	1.4%	1.0%	1.1%	1.2%	1.1%	1.1%
BR Deutschland	19.5%	15.4%	13.9%	12.0%	10.9%	10.0%	8.6%	8.3%	9.0%	9.5%
Ellas	:	:	:	4.0%	4.7%	2.3%	1.7%	1.7%	1.6%	2.4%
Espana	:	:	:	:	8.5%	10.2%	8.9%	8.2%	7.3%	7.5%
France	18.5%	15.0%	12.6%	10.4%	9.3%	6.9%	6.1%	5.7%	5.8%	5.8%
Ireland	0.0%	0.8%	0.5%	0.5%	0.4%	0.6%	0.6%	1.0%	0.9%	1.0%
Italia	10.7%	11.7%	9.4%	9.6%	9.1%	8.6%	8.4%	7.9%	7.2%	7.2%
Luxembourg	85.7%	83.2%	78.6%	71.6%	59.6%	48.3%	46.4%	42.4%	43.7%	41.8%
Nederland	8.1%	7.9%	7.8%	5.8%	5.2%	5.5%	5.1%	4.6%	5.0%	4.5%
Portugal	:	:	:	:	4.3%	4.1%	3.8%	3.0%	3.1%	2.7%
United Kingdom	13.3%	13.0%	13.2%	8.6%	5.2%	5.4%	4.8%	5.1%	5.4%	5.2%

3.2.4
Chemical industry, as proportion of total
Industries chimiques, proportionnellement au total
Chemische Industrie als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	6.0%	5.9%	5.8%	6.1%	6.1%	:
EUR10	:	:	:	:	5.9%	5.9%	5.8%	6.1%	6.1%	:
EUR9	7.3%	7.7%	6.9%	7.1%	6.0%	6.0%	5.9%	6.2%	6.2%	:
Belgique/België	5.6%	5.6%	6.4%	6.7%	6.0%	6.4%	6.5%	6.8%	7.0%	6.9%
Danmark	2.9%	1.9%	1.2%	2.2%	2.5%	2.0%	2.2%	2.1%	2.3%	2.5%
BR Deutschland	10.0%	9.8%	7.1%	7.2%	6.5%	6.9%	6.5%	6.8%	7.3%	:
Ellas	:	:	:	3.1%	2.7%	1.3%	1.3%	1.8%	1.8%	1.9%
Espana	:	:	:	:	6.9%	6.5%	5.3%	6.3%	5.7%	5.4%
France	5.6%	6.6%	5.5%	6.5%	5.7%	5.5%	5.4%	5.5%	5.3%	5.8%
Ireland	0.0%	0.0%	1.1%	1.0%	2.6%	2.7%	1.4%	4.4%	3.7%	3.7%
Italia	10.1%	11.1%	10.4%	8.7%	6.8%	6.4%	6.3%	7.0%	7.0%	7.2%
Luxembourg	0.8%	1.5%	1.9%	2.7%	2.2%	3.7%	3.0%	3.4%	3.1%	2.8%
Nederland	10.6%	9.7%	10.8%	11.3%	12.4%	13.5%	14.1%	14.3%	13.9%	11.6%
Portugal	:	:	:	:	4.9%	6.0%	5.7%	4.9%	4.5%	4.4%
United Kingdom	5.5%	5.7%	5.8%	6.0%	3.2%	3.0%	3.0%	3.2%	3.0%	3.4%

3.2.5
All transport, as proportion of total
Tous transports, proportionnellement au total
Gesamtverkehr als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	24.6%	26.8%	27.8%	28.2%	29.9%	31.2%
EUR10	:	:	:	21.2%	23.9%	26.2%	27.1%	27.4%	29.0%	30.2%
EUR9	17.4%	17.8%	18.0%	21.1%	23.7%	25.9%	26.8%	27.2%	28.7%	30.0%
Belgique/België	13.9%	13.1%	13.8%	16.4%	18.1%	21.1%	22.2%	22.6%	24.2%	24.8%
Danmark	22.1%	20.6%	17.8%	21.2%	21.7%	25.9%	26.0%	28.1%	29.1%	31.1%
BR Deutschland	15.8%	16.1%	17.1%	20.0%	22.3%	23.7%	24.5%	25.0%	26.3%	27.7%
Ellas	:	:	:	26.0%	37.2%	40.3%	41.1%	39.6%	40.8%	40.3%
Espana	:	:	:	:	33.2%	34.5%	36.2%	37.4%	40.6%	42.4%
France	17.8%	17.9%	18.4%	22.7%	24.8%	27.5%	28.7%	29.3%	31.5%	32.1%
Ireland	19.4%	20.8%	24.6%	30.4%	30.3%	27.7%	27.2%	25.7%	27.3%	27.0%
Italia	21.2%	23.0%	20.3%	22.4%	25.5%	29.6%	30.9%	29.6%	30.9%	30.8%
Luxembourg	4.2%	4.4%	5.0%	9.5%	14.7%	20.2%	21.5%	24.6%	25.0%	26.6%
Nederland	18.4%	18.7%	17.8%	18.4%	19.7%	20.8%	21.2%	21.6%	23.2%	27.3%
Portugal	:	:	:	:	35.8%	35.5%	37.7%	38.1%	38.8%	39.2%
United Kingdom	18.2%	18.2%	18.7%	22.2%	26.0%	27.7%	28.4%	29.4%	30.7%	32.5%

3.2.6
Road transport, as proportion of total
Transports routiers, proportionnellement au total
Straßenverkehr als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	20.5%	22.7%	23.5%	23.8%	25.2%	26.0%
EUR10	:	:	:	17.5%	20.1%	22.4%	23.1%	23.4%	24.6%	25.4%
EUR9	10.0%	13.0%	14.4%	17.5%	20.1%	22.3%	23.0%	23.3%	24.6%	25.3%
Belgique/België	8.2%	9.8%	10.7%	13.1%	15.5%	17.8%	19.1%	19.5%	20.9%	21.5%
Danmark	14.2%	14.1%	12.1%	15.2%	15.8%	19.9%	19.6%	19.7%	20.7%	21.2%
BR Deutschland	8.6%	11.9%	13.7%	16.9%	19.5%	20.5%	21.3%	21.8%	22.8%	24.0%
Ellas	:	:	:	16.8%	21.7%	26.3%	28.7%	27.8%	28.0%	28.3%
Espana	:	:	:	:	24.1%	27.1%	27.8%	28.3%	31.7%	33.4%
France	10.6%	13.1%	15.3%	19.8%	21.6%	24.1%	25.1%	25.7%	27.5%	28.0%
Ireland	16.1%	18.3%	17.5%	23.2%	25.4%	23.5%	21.7%	18.1%	21.1%	21.1%
Italia	15.4%	18.7%	17.4%	19.5%	23.0%	26.6%	28.1%	27.1%	28.2%	28.1%
Luxembourg	3.4%	3.6%	3.8%	7.4%	12.0%	16.9%	18.0%	20.7%	21.0%	23.0%
Nederland	11.8%	13.0%	12.3%	13.5%	15.6%	17.7%	16.2%	16.7%	18.0%	18.6%
Portugal	:	:	:	:	27.2%	27.4%	29.5%	29.9%	31.1%	31.6%
United Kingdom	9.4%	12.7%	14.5%	17.4%	20.6%	22.7%	23.3%	23.9%	25.0%	25.9%

3.2.7
Rail transport, as proportion of total
Transports ferroviaires, proportionnellement au total
Schienenverkehr als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	0.8%	0.8%	0.8%	0.8%	0.8%	1.0%
EUR10	:	:	:	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%	1.0%
EUR9	5.4%	2.5%	1.2%	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%	1.0%
Belgique/België	4.1%	1.8%	0.8%	1.0%	0.8%	0.8%	0.8%	0.6%	0.6%	0.6%
Danmark	3.3%	1.2%	0.6%	0.9%	0.8%	0.9%	1.0%	0.8%	0.9%	0.9%
BR Deutschland	5.8%	2.9%	1.6%	1.1%	1.0%	0.9%	0.8%	0.8%	0.8%	0.8%
Ellas	:	:	:	0.9%	0.5%	0.5%	0.5%	0.4%	0.5%	0.5%
Espana	:	:	:	:	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%
France	6.2%	3.6%	1.4%	1.1%	1.0%	0.9%	0.9%	0.9%	1.0%	0.9%
Ireland	3.2%	0.8%	1.1%	1.0%	0.7%	0.7%	0.6%	2.8%	0.7%	0.6%
Italia	3.6%	1.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.6%	0.7%	0.6%
Luxembourg	1.7%	0.7%	0.6%	0.7%	0.4%	0.4%	0.4%	0.5%	0.4%	0.1%
Nederland	0.8%	0.6%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	3.9%
Portugal	:	:	:	:	1.2%	1.1%	1.1%	1.0%	1.0%	1.0%
United Kingdom	5.9%	2.3%	1.1%	1.0%	0.9%	0.8%	0.8%	0.7%	0.7%	0.7%

3.2.8
Air transport, as proportion of total
Transports aériens, proportionnellement au total
Luftverkehr als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	2.6%	2.9%	3.0%	3.0%	3.3%	3.5%
EUR10	:	:	:	2.2%	2.4%	2.7%	2.8%	2.9%	3.2%	3.3%
EUR9	1.1%	1.4%	1.9%	2.1%	2.2%	2.6%	2.7%	2.8%	3.0%	3.2%
Belgique/België	1.0%	1.0%	1.3%	1.5%	1.5%	1.9%	1.9%	1.9%	2.2%	2.4%
Danmark	2.9%	3.4%	3.7%	5.2%	4.1%	4.1%	4.3%	4.9%	5.3%	5.8%
BR Deutschland	0.5%	0.8%	1.2%	1.4%	1.6%	2.0%	2.1%	2.2%	2.5%	2.8%
Ellas	:	:	:	8.3%	10.6%	10.3%	9.3%	8.8%	8.7%	7.7%
Espana	:	:	:	:	4.5%	4.5%	4.0%	4.5%	4.9%	4.7%
France	0.8%	1.1%	1.4%	1.7%	2.0%	2.2%	2.4%	2.5%	2.8%	3.0%
Ireland	0.0%	1.7%	6.6%	6.2%	4.2%	3.5%	4.8%	4.7%	5.4%	5.2%
Italia	1.4%	1.7%	1.9%	1.9%	1.5%	1.9%	1.8%	1.5%	1.6%	1.7%
Luxembourg	0.0%	0.0%	0.6%	1.4%	2.1%	2.4%	2.5%	3.3%	4.0%	3.5%
Nederland	2.0%	1.6%	2.2%	2.2%	2.2%	2.9%	3.0%	3.3%	3.7%	3.6%
Portugal	:	:	:	:	7.4%	6.4%	6.4%	6.3%	6.2%	6.1%
United Kingdom	1.6%	2.1%	2.6%	3.1%	3.8%	4.1%	4.3%	4.5%	4.7%	5.0%

3.2.9
Agriculture and fisheries, as proportion of total
Agriculture et pêche, proportionnellement au total
Landwirtschaft und Fischerei als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	2.3%	2.3%	2.2%	2.5%	2.6%	2.4%
EUR10	:	:	:	2.1%	2.0%	1.9%	1.9%	2.3%	2.4%	2.3%
EUR9	1.4%	1.6%	1.8%	2.0%	1.9%	1.8%	1.8%	2.2%	2.3%	2.2%
Belgique/België	0.8%	1.6%	1.5%	1.3%	1.1%	0.6%	0.8%	1.4%	1.9%	1.8%
Danmark	5.0%	3.9%	5.9%	9.3%	9.4%	6.3%	7.0%	4.9%	6.8%	4.3%
BR Deutschland	0.7%	0.8%	0.9%	1.3%	1.2%	1.3%	1.3%	1.3%	1.3%	1.3%
Ellas	:	:	:	8.3%	7.0%	8.0%	7.4%	7.6%	7.9%	7.5%
Espana	:	:	:	:	6.2%	7.2%	5.7%	5.8%	4.7%	3.1%
France	2.3%	2.6%	2.9%	2.8%	2.7%	2.7%	2.6%	2.7%	2.7%	2.3%
Ireland	2.2%	3.3%	3.8%	3.6%	3.9%	3.5%	3.3%	2.9%	3.0%	2.8%
Italia	2.5%	2.1%	2.2%	2.6%	2.5%	2.4%	2.6%	2.5%	2.9%	2.9%
Luxembourg	0.0%	0.0%	0.0%	0.0%	0.6%	0.8%	0.8%	0.8%	0.4%	0.4%
Nederland	1.2%	1.3%	1.3%	1.0%	1.0%	0.7%	0.7%	6.8%	7.1%	7.1%
Portugal	:	:	:	:	0.4%	5.4%	5.5%	5.1%	4.9%	4.9%
United Kingdom	1.2%	1.4%	1.5%	1.6%	1.3%	1.1%	1.1%	1.1%	1.0%	0.9%

3.2.10
Households and others, as proportion of total
Foyers domestiques et autres, proportionnellement au total
Haushalte und sonstige als Anteil von insgesamt

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	37.7%	39.2%	39.6%	38.5%	36.6%	35.2%
EUR10	:	:	:	39.3%	39.2%	40.9%	41.2%	40.0%	38.1%	36.6%
EUR9	34.9%	36.4%	37.6%	39.5%	39.6%	41.2%	41.6%	40.4%	38.5%	36.9%
Belgique/België	35.1%	37.6%	36.8%	39.8%	40.0%	42.2%	42.9%	41.6%	38.0%	36.7%
Danmark	40.4%	50.7%	51.3%	50.4%	48.4%	49.2%	48.7%	48.7%	45.3%	45.6%
BR Deutschland	33.8%	39.2%	40.8%	41.7%	40.1%	41.3%	42.1%	41.0%	39.2%	36.2%
Ellas	:	:	:	24.5%	18.5%	20.9%	20.2%	22.2%	21.3%	22.4%
Espana	:	:	:	:	17.4%	19.3%	19.9%	19.8%	18.9%	19.6%
France	30.2%	31.7%	34.6%	38.1%	37.4%	39.4%	40.6%	39.3%	36.8%	36.4%
Ireland	50.5%	50.8%	38.8%	35.1%	37.5%	40.4%	43.1%	44.0%	42.6%	44.0%
Italia	21.7%	23.2%	32.3%	33.5%	32.6%	35.0%	33.5%	34.4%	33.3%	32.7%
Luxembourg	7.6%	9.5%	11.3%	14.2%	16.9%	19.2%	20.6%	20.7%	19.7%	17.9%
Nederland	39.8%	43.0%	47.3%	50.5%	47.6%	45.9%	46.2%	40.7%	38.4%	37.1%
Portugal	:	:	:	:	20.0%	17.7%	18.5%	18.9%	18.5%	18.3%
United Kingdom	41.2%	39.4%	36.1%	38.1%	43.1%	45.6%	45.6%	44.0%	42.5%	41.0%

3.3
Stromverbrauch
Electricity consumption
Consommation d'électricité

QUELLE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

3.3.1
Total
Total
Insgesamt

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	4 259 639	4 720 259	4 849 749	5 038 299	5 183 619	5 362 949
EUR10	:	:	:	3 207 600	3 884 830	4 287 409	4 404 819	4 575 609	4 697 809	4 850 989
EUR9	1 242 500	1 834 200	2 586 500	3 158 200	3 813 180	4 201 599	4 318 019	4 485 479	4 600 979	4 750 159
Belgique/België	41 000	61 900	94 100	123 100	156 550	174 320	177 900	186 900	195 040	201 890
Danmark	16 700	29 000	46 500	58 500	78 730	91 300	96 170	99 610	100 990	102 080
BR Deutschland	347 200	507 100	742 700	935 700	1 150 300	1 258 690	1 271 260	1 308 520	1 328 680	1 355 400
Ellas	:	:	:	49 400	71 650	85 810	86 800	90 130	96 830	100 830
Espana	:	:	:	:	323 160	370 190	378 120	392 710	410 990	432 620
France	217 000	317 400	444 000	574 800	763 950	910 520	952 410	993 130	1 008 760	1 060 540
Ireland	6 600	10 700	17 300	22 200	30 950	35 150	36 730	38 130	38 610	40 600
Italia	168 900	256 500	372 900	453 300	575 150	625 280	644 660	678 540	713 220	745 140
Luxembourg	4 800	6 500	8 700	11 300	12 880	13 650	13 720	14 020	14 350	14 650
Nederland	48 000	73 900	125 500	171 500	206 390	221 220	224 210	234 560	245 990	254 200
Portugal	:	:	:	:	51 650	62 660	66 810	69 980	74 820	79 340
United Kingdom	392 300	571 200	734 800	807 800	838 280	871 470	900 960	932 070	955 340	975 660

3.3.2
As proportion of total final energy consumption
Proportionnellement à la consommation finale énergétique totale
Als Anteil des gesamten Endenergieverbrauchs

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	14.7%	16.7%	16.8%	17.1%	17.5%	18.0%
EUR10	:	:	:	12.8%	14.4%	16.4%	16.5%	16.8%	17.3%	17.7%
EUR9	8.6%	10.1%	11.2%	12.8%	14.4%	16.4%	16.5%	16.8%	17.3%	17.7%
Belgique/België	5.6%	6.6%	7.6%	9.9%	11.7%	14.5%	14.3%	14.8%	15.2%	15.7%
Danmark	7.0%	7.0%	7.2%	10.1%	12.9%	15.6%	16.7%	16.9%	17.8%	18.8%
BR Deutschland	8.2%	9.6%	11.3%	13.4%	15.2%	16.9%	16.7%	17.0%	17.5%	18.4%
Ellas	:	:	:	15.1%	16.2%	17.7%	18.3%	17.6%	18.2%	18.0%
Espana	:	:	:	:	17.8%	20.3%	20.4%	20.6%	19.7%	20.5%
France	8.6%	9.6%	10.2%	11.8%	14.2%	17.9%	18.6%	19.1%	19.6%	20.3%
Ireland	7.1%	8.9%	9.5%	11.4%	12.9%	13.7%	13.5%	13.8%	13.9%	13.7%
Italia	13.7%	13.1%	11.5%	12.5%	14.2%	15.9%	16.2%	16.2%	16.9%	16.8%
Luxembourg	4.0%	4.7%	5.5%	7.6%	9.1%	11.0%	11.2%	11.6%	11.5%	10.9%
Nederland	8.1%	8.5%	9.4%	10.4%	11.3%	12.5%	12.3%	13.0%	14.1%	14.2%
Portugal	:	:	:	:	17.3%	20.0%	21.4%	21.0%	20.9%	21.2%
United Kingdom	8.3%	11.4%	13.5%	14.9%	15.8%	16.5%	16.5%	16.7%	16.8%	17.1%

QUELLE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

SOURCE: Eurostat CRONOS ZEN2

3.4.1
Total
Total
Insgesamt

(TJ)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	121 888 413	135 796 109	139 317 610	143 479 796	147 604 212	151 692 410
EUR10	:	:	:	91 465 000	111 189 386	123 361 403	126 541 892	130 367 097	133 761 595	136 945 314
EUR9	38 383 000	54 955 000	75 289 000	90 077 000	109 241 677	120 976 203	124 119 462	127 780 087	130 909 755	134 003 874
Belgique/België	1 303 000	1 866 000	2 624 000	3 515 000	4 565 070	4 837 040	4 954 500	5 359 150	5 549 510	5 744 780
Danmark	472 000	674 000	1 722 000	1 607 000	2 331 800	2 499 040	2 643 070	2 527 760	2 404 540	1 956 740
BR Deutschland	10 159 000	14 726 000	20 740 000	25 832 000	31 598 440	34 963 620	34 942 890	35 779 250	36 852 950	37 684 590
Ellas	:	:	:	1 388 000	1 947 710	2 385 200	2 422 430	2 587 010	2 851 840	2 941 440
Espana	:	:	:	:	9 391 557	10 799 376	11 025 518	11 383 730	11 914 857	12 551 056
France	6 448 000	9 116 000	12 616 000	15 976 000	22 124 059	29 456 306	31 003 769	32 383 309	33 566 370	34 708 926
Ireland	202 000	317 000	501 000	647 000	908 240	1 009 270	1 057 950	1 086 750	1 108 760	1 163 710
Italia	6 453 000	9 130 000	12 141 000	14 471 000	17 664 420	17 367 550	17 967 030	18 894 030	19 094 220	19 692 560
Luxembourg	126 000	127 000	116 000	91 000	79 350	44 270	49 600	50 290	52 530	54 410
Nederland	1 420 000	2 150 000	3 514 000	4 666 000	5 572 298	5 411 508	5 774 537	5 882 959	5 985 448	6 281 150
Portugal	:	:	:	:	1 307 470	1 635 330	1 750 200	1 728 970	1 927 760	2 196 040
United Kingdom	11 800 000	16 849 000	21 315 000	23 272 000	24 398 000	25 387 599	25 726 117	25 816 589	26 295 427	26 717 008

3.4.2
Proportion derived from nuclear energy
Part dérivée de l'énergie nucléaire
Anteil aus der Kernenergie

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	11.7%	30.7%	32.3%	32.3%	33.9%	35.3%
EUR10	:	:	:	7.9%	12.4%	31.8%	33.0%	32.8%	34.1%	35.5%
EUR9	0.6%	3.3%	4.7%	8.0%	12.7%	32.5%	33.6%	33.4%	34.9%	36.3%
Belgique/België	0.0%	0.0%	0.2%	16.6%	23.6%	61.5%	68.4%	67.3%	66.8%	61.7%
Danmark	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BR Deutschland	0.0%	0.1%	2.5%	7.1%	11.9%	31.0%	29.4%	31.4%	33.9%	34.1%
Ellas	:	:	:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Espana	:	:	:	:	4.7%	22.3%	29.2%	31.2%	36.4%	38.4%
France	0.2%	1.0%	3.9%	9.9%	23.8%	65.4%	70.5%	70.5%	70.6%	75.3%
Ireland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Italia	0.0%	3.3%	2.2%	2.3%	1.1%	3.5%	4.2%	0.1%	0.0%	0.0%
Luxembourg	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nederland	0.0%	0.0%	0.9%	6.2%	6.5%	6.2%	6.3%	5.2%	5.3%	5.5%
Portugal	:	:	:	:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United Kingdom	1.8%	8.3%	10.5%	11.2%	13.0%	20.7%	19.7%	18.4%	20.7%	21.7%

3.4.3
Proportion derived from fossil fuels
Part des combustibles fossiles
Anteil des aus fossilen Brennstoffen erzeugten Stroms

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	74.1%	57.3%	56.3%	56.0%	53.7%	56.1%
EUR10	:	:	:	78.3%	74.9%	57.9%	56.8%	56.7%	55.2%	56.4%
EUR9	72.1%	75.9%	78.8%	78.2%	74.8%	57.3%	56.2%	56.1%	54.4%	55.6%
Belgique/België	98.8%	98.8%	99.0%	82.8%	75.8%	38.0%	31.0%	32.0%	32.6%	37.8%
Danmark	99.6%	99.7%	99.9%	99.9%	99.9%	99.7%	99.5%	99.3%	98.8%	98.0%
BR Deutschland	89.7%	91.6%	90.7%	87.6%	83.4%	65.2%	66.5%	64.2%	61.9%	62.1%
Ellas	:	:	:	87.5%	85.0%	89.9%	88.3%	90.8%	92.9%	94.4%
Espana	:	:	:	:	68.2%	52.8%	50.1%	48.3%	38.2%	48.6%
France	45.4%	54.9%	57.2%	57.5%	49.0%	16.3%	12.0%	10.6%	9.6%	12.8%
Ireland	57.9%	76.0%	86.2%	93.0%	92.1%	92.9%	92.6%	94.5%	93.2%	94.9%
Italia	13.5%	34.3%	51.7%	60.0%	66.2%	66.4%	66.5%	72.2%	72.1%	75.7%
Luxembourg	98.4%	94.5%	93.1%	93.4%	89.7%	85.2%	85.1%	82.9%	84.9%	89.0%
Nederland	100.0%	100.0%	99.1%	93.8%	93.5%	93.8%	93.7%	94.8%	94.7%	94.4%
Portugal	:	:	:	:	47.3%	43.4%	58.0%	54.5%	45.4%	77.2%
United Kingdom	96.0%	89.5%	87.7%	87.4%	85.6%	77.9%	78.7%	80.3%	77.7%	76.8%

3.4.4
Proportion derived from hydroelectric and geothermal sources
Part des sources hydro-électriques et géothermiques
Anteil des durch Wasserkraft und Erdwärme erzeugten Stroms

(%)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	14.2%	12.0%	11.4%	11.7%	12.4%	8.7%
EUR10	:	:	:	13.8%	12.6%	10.3%	10.2%	10.5%	10.7%	8.1%
EUR9	27.4%	20.8%	16.5%	13.8%	12.6%	10.3%	10.2%	10.5%	10.8%	8.1%
Belgique/België	1.2%	1.2%	0.8%	0.6%	0.5%	0.5%	0.6%	0.7%	0.6%	0.5%
Danmark	0.4%	0.3%	0.1%	0.1%	0.1%	0.3%	0.5%	0.7%	1.2%	2.0%
BR Deutschland	10.3%	8.3%	6.8%	5.2%	4.7%	3.8%	4.1%	4.4%	4.2%	3.8%
Ellas	:	:	:	12.5%	15.0%	10.1%	11.7%	9.2%	7.1%	5.6%
Espana	:	:	:	:	27.1%	24.9%	20.7%	20.6%	25.4%	13.0%
France	54.4%	44.1%	38.9%	32.6%	27.2%	18.3%	17.5%	18.9%	19.8%	11.9%
Ireland	42.1%	24.0%	13.8%	7.0%	7.9%	7.1%	7.4%	5.5%	6.8%	5.1%
Italia	86.5%	62.4%	46.1%	37.8%	32.7%	30.1%	29.3%	27.7%	27.9%	24.3%
Luxembourg	1.6%	5.5%	6.9%	6.6%	10.3%	14.8%	14.9%	17.1%	15.1%	11.0%
Nederland	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Portugal	:	:	:	:	52.7%	56.6%	42.0%	45.5%	54.6%	22.8%
United Kingdom	2.3%	2.1%	1.8%	1.4%	1.4%	1.4%	1.5%	1.3%	1.5%	1.5%

4. CARBON DIOXIDE

Carbon dioxide (CO_2) is not a pollutant in the conventional sense; it is a normal component of the atmosphere and it is essential to the growth of plants, being a primary raw material for photosynthesis. However, man-made CO_2 emissions, mainly from fossil fuel combustion, have resulted in a gradual increase in the concentration of CO_2 from the historical level of around 300 parts per million. There is now a general consensus that increasing concentrations of the so-called *greenhouse gases* (including CO_2 as well as chlorofluorocarbons, ozone, methane and nitrous oxide) will cause a significant warming of the earth's climate within the next fifty years (the *greenhouse effect*). The magnitude of this warming is uncertain, but even modest warming would have disruptive effects. There is therefore strong interest, both at Community level and at the world level in policies directed towards the control of emissions of all greenhouse gases.

The figures presented here have been calculated by Eurostat from Eurostat's own energy balance sheets.

In general, CO_2 emissions in the EC Member States, as in the USA and Japan, reached a peak in the nineteen-seventies and have been stable or declining since then. This is the result of fairly stable oil consumption following the oil supply crises of the nineteen-seventies, combined with declining coal consumption and increasing use of natural gas, which generates much less CO_2 per unit of energy. However, EC Member States are still responsible for 13% of world CO_2 emissions from fossil fuels.

As with other emissions estimates, these tables should be interpreted with caution. There are uncertainties both in the emission factors and in the underlying energy statistics, which cannot easily be quantified. However, since a common estimation procedure has been used for all countries, both inter-country comparisons and trends for individual countries should be reliable, even if the absolute values are subject to errors. It should also be noted that as estimation procedures for carbon dioxide emissions are refined, future editions of this table may include revised historical series.

Notes:

- The estimates for CO_2 emissions exclude emissions from gas flaring and from cement production, which together account for less than 5% of CO_2 emissions.
- The estimates for emissions from natural gas, liquid fuels, solid fuels and total fossil fuels have been calculated only for *energy uses* of these fuels. Possible CO_2 emissions resulting from *non-energy uses* have been calculated separately under the heading *potential emissions*. Since a proportion of fossil fuels are incorporated into products which oxidize slowly or not at all, actual emissions will always be less than potential emissions.

4.1
Kohlendioxid-Emissionen
Carbon dioxide emissions
Emissions de dioxyde de carbone

QUELLE: Eurostat CRONOS, CDIAC

SOURCE: Eurostat CRONOS, CDIAC

SOURCE: Eurostat CRONOS, CDIAC

4.1.1
All fossil fuels
Tous combustibles
Sämtliche fossilen Brennstoffe

(Mio t CO2)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
World/Monde/Welt										
EUR12	:	:	:	:	2 899.3	2 635.3	2 642.1	2 674.5	2 664.4	2 712.1
% world/monde/Welt										
Belgique/België	83.5	102.3	127.6	117.0	127.6	101.8	101.8	101.4	102.1	106.1
Danmark	30.1	43.7	64.0	54.3	62.9	62.2	62.0	62.2	57.9	52.1
BR Deutschland	531.2	624.7	741.1	709.3	809.5	718.5	719.4	709.2	705.7	689.2
Ellas	:	:	:	37.6	48.3	59.3	58.3	62.5	67.1	72.1
Espana	:	:	:	:	205.5	189.6	186.7	186.3	192.3	207.0
France	264.6	339.2	425.0	440.0	480.7	382.9	367.5	368.8	357.3	374.9
Ireland	10.2	13.5	19.1	20.6	25.2	27.2	28.3	30.1	30.3	30.2
Italia	102.1	185.1	284.6	324.1	363.7	351.2	353.3	377.4	379.9	395.8
Luxembourg	14.5	14.6	15.9	13.6	12.4	10.3	10.0	9.5	9.9	10.6
Nederland	75.4	98.5	131.2	134.1	153.9	144.8	149.7	154.8	153.2	155.0
Portugal	:	:	:	:	26.1	26.0	28.2	29.5	31.2	39.6
United Kingdom	619.1	663.0	675.3	599.5	583.5	561.6	576.7	582.9	577.5	579.6
USA										
Japan										

4.1.2
All fossil fuels, per capita
Tous combustibles, par habitant
Sämtliche fossilen Brennstoffe, je Einwohner

(t CO2 / capita)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	9.121	8.186	8.186	8.265	8.210	8.320
Belgique/België	9.153	10.830	13.244	11.950	12.961	10.329	10.327	10.276	10.316	10.679
Danmark	6.577	9.176	12.992	10.730	12.287	12.170	12.111	12.135	11.286	10.145
BR Deutschland	9.582	10.657	12.219	11.471	13.148	11.774	11.781	11.589	11.490	11.098
Ellas	:	:	:	4.157	5.006	5.965	5.855	6.252	6.705	7.190
Espana	:	:	:	:	5.496	4.924	4.829	4.814	4.961	5.333
France	5.792	6.956	8.370	8.349	8.922	6.939	6.635	6.629	6.394	6.675
Ireland	3.585	4.682	6.485	6.496	7.399	7.670	7.994	8.501	8.554	8.584
Italia	2.035	3.551	5.287	5.845	6.445	6.146	6.171	6.582	6.618	6.879
Luxembourg	46.034	43.901	46.841	37.690	34.070	28.016	27.121	25.543	26.296	28.184
Nederland	6.562	8.009	10.065	9.810	10.877	9.993	10.275	10.553	10.381	10.440
Portugal	:	:	:	:	2.673	2.557	2.764	2.877	3.033	3.837
United Kingdom	11.821	12.200	12.139	10.662	10.358	9.919	10.160	10.239	10.120	10.131
USA										
Japan										

4.1.3
Natural gas
Gaz naturel
Erdgas

(Mio t CO2)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	372.6	401.5	411.5	437.4	424.6	445.3
Belgique/België	0.1	0.1	7.0	17.7	19.5	16.1	14.5	16.2	15.8	17.7
Danmark	0.0	0.0	0.0	0.0	0.0	1.3	2.4	3.1	3.3	3.5
BR Deutschland	1.5	5.7	28.8	79.0	101.5	92.4	92.3	102.8	100.7	106.0
Ellas	:	:	:	0.0	0.0	0.1	0.1	0.1	0.1	0.1
Espana	:	:	:	:	4.1	5.5	6.0	6.1	7.6	9.2
France	5.2	8.5	17.2	33.5	45.7	51.5	52.0	53.9	51.1	53.3
Ireland	0.0	0.0	0.0	0.0	0.9	3.7	2.3	2.2	2.8	3.3
Italia	10.3	11.5	20.8	38.9	48.5	59.2	62.9	70.6	74.1	82.0
Luxembourg	0.0	0.0	0.0	0.8	1.0	0.7	0.7	0.8	0.8	1.0
Nederland	0.7	3.1	33.9	69.9	67.3	70.8	71.3	73.6	66.2	68.0
Portugal	:	:	:	:	0.0	0.0	0.0	0.0	0.0	0.0
United Kingdom	0.2	1.7	23.9	73.6	84.1	100.2	106.9	108.1	102.3	101.2
USA										
Japan										

4.1.4
Natural gas, per capita
Gaz naturel, par habitant
Erdgas, je Einwohner

(t CO2 / capita)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	1.172	1.247	1.275	1.352	1.308	1.366
Belgique/België	0.014	0.015	0.722	1.808	1.984	1.632	1.473	1.636	1.591	1.786
Danmark	0.000	0.000	0.000	0.000	0.000	0.260	0.471	0.597	0.637	0.681
BR Deutschland	0.028	0.098	0.474	1.278	1.649	1.513	1.511	1.680	1.639	1.706
Ellas	:	:	:	0.000	0.000	0.008	0.009	0.009	0.009	0.010
Espana	:	:	:	:	0.109	0.143	0.154	0.158	0.196	0.236
France	0.113	0.174	0.338	0.635	0.847	0.933	0.939	0.969	0.914	0.949
Ireland	0.000	0.000	0.000	0.000	0.267	1.048	0.658	0.609	0.787	0.947
Italia	0.205	0.221	0.386	0.701	0.859	1.036	1.099	1.232	1.290	1.424
Luxembourg	0.000	0.000	0.082	2.237	2.727	1.937	1.913	2.174	2.218	2.523
Nederland	0.058	0.251	2.600	5.117	4.759	4.884	4.895	5.017	4.482	4.583
Portugal	:	:	:	:	0.000	0.000	0.000	0.000	0.000	0.000
United Kingdom	0.003	0.032	0.429	1.309	1.493	1.770	1.883	1.899	1.793	1.770
USA										
Japan										

4.1.5
Liquid fuels
Combustibles liquides
Flüssige Brennstoffe

(Mio t CO2)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	1 585.9	1 283.7	1 311.9	1 318.4	1 337.0	1 347.1
Belgique/België	19.9	40.7	68.3	64.0	65.5	47.5	53.1	51.8	52.5	51.2
Danmark	14.6	29.9	55.0	45.9	40.2	31.8	31.2	29.8	27.5	26.6
BR Deutschland	89.2	213.4	347.9	351.4	377.1	293.3	312.4	303.2	302.6	279.7
Ellas	:	:	:	25.1	34.7	33.0	31.0	33.0	34.8	39.1
Espana	:	:	:	:	140.9	104.9	106.6	110.1	122.1	121.5
France	79.4	155.7	265.5	308.0	312.6	235.1	235.1	240.1	233.8	241.6
Ireland	3.4	6.9	11.9	15.4	17.2	12.6	14.5	13.2	12.3	11.8
Italia	61.4	140.7	228.9	254.2	271.3	233.3	235.4	249.5	252.0	260.9
Luxembourg	0.6	2.5	4.1	4.1	3.3	3.3	3.6	4.0	4.1	4.5
Nederland	33.1	59.6	77.5	55.0	70.9	48.8	53.3	54.9	55.4	55.3
Portugal	:	:	:	:	24.3	23.3	23.8	22.9	23.4	30.1
United Kingdom	125.0	204.4	277.4	254.1	227.8	216.8	212.1	205.8	216.4	224.8
USA										
Japan										

4.1.6
Liquid fuels, per capita
Combustibles liquides, par habitant
Flüssige Brennstoffe, je Einwohner

(t CO2 / capita)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	4.989	3.988	4.064	4.074	4.120	4.133
Belgique/België	2.180	4.302	7.089	6.532	6.647	4.821	5.380	5.246	5.305	5.147
Danmark	3.193	6.274	11.154	9.071	7.853	6.223	6.090	5.819	5.371	5.176
BR Deutschland	1.609	3.640	5.737	5.683	6.124	4.807	5.115	4.955	4.926	4.503
Ellas	:	:	:	2.769	3.599	3.319	3.108	3.299	3.479	3.898
Espana	:	:	:	:	3.768	2.723	2.756	2.847	3.150	3.130
France	1.737	3.193	5.229	5.844	5.802	4.262	4.244	4.316	4.184	4.302
Ireland	1.192	2.399	4.017	4.839	5.070	3.547	4.085	3.734	3.464	3.361
Italia	1.224	2.700	4.253	4.585	4.808	4.083	4.112	4.351	4.390	4.535
Luxembourg	1.905	7.432	11.919	11.234	9.103	8.864	9.631	10.870	11.047	12.077
Nederland	2.879	4.850	5.942	4.023	5.009	3.365	3.659	3.742	3.751	3.727
Portugal	:	:	:	:	2.490	2.293	2.329	2.232	2.278	2.919
United Kingdom	2.386	3.760	4.985	4.519	4.045	3.829	3.737	3.615	3.792	3.930
USA										
Japan										

4.1.7
Solid fuels
Combustibles solides
Feste Brennstoffe

(Mio t CO2)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	940.9	950.2	918.8	918.7	902.8	919.7
Belgique/België	63.5	61.5	52.4	35.4	42.6	38.2	34.3	33.5	33.9	37.2
Danmark	15.5	13.8	9.1	8.4	22.7	29.1	28.4	29.3	27.1	22.0
BR Deutschland	440.4	405.6	364.4	278.9	330.9	332.8	314.7	303.1	302.5	303.5
Ellas	:	:	:	12.6	13.6	26.2	27.3	29.4	32.2	32.9
Espana	:	:	:	:	60.5	79.2	74.2	70.0	62.6	76.3
France	180.1	175.0	142.3	98.6	122.4	96.2	80.5	74.8	72.4	80.0
Ireland	6.8	6.6	7.3	5.3	7.0	10.9	11.5	14.7	15.2	15.0
Italia	30.4	32.9	34.9	31.0	43.9	58.7	54.9	57.3	53.8	52.9
Luxembourg	13.9	12.1	11.8	8.7	8.1	6.3	5.8	4.6	4.9	5.1
Nederland	41.6	35.8	19.9	9.2	15.7	25.3	25.1	26.3	31.7	31.6
Portugal	:	:	:	:	1.8	2.7	4.4	6.6	7.8	9.5
United Kingdom	494.0	456.9	374.1	271.7	271.6	244.6	257.7	269.0	258.8	253.5
USA										
Japan										

4.1.8
Solid fuels, per capita
Combustibles solides, par habitant
Feste Brennstoffe, je Einwohner

(t CO2 / capita)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	2.960	2.952	2.846	2.839	2.782	2.821
Belgique/België	6.960	6.512	5.433	3.610	4.331	3.877	3.474	3.394	3.420	3.746
Danmark	3.385	2.903	1.838	1.659	4.434	5.688	5.551	5.718	5.278	4.288
BR Deutschland	7.946	6.919	6.008	4.510	5.375	5.454	5.154	4.953	4.924	4.888
Ellas	:	:	:	1.388	1.407	2.638	2.738	2.943	3.217	3.282
Espana	:	:	:	:	1.619	2.058	1.918	1.809	1.615	1.967
France	3.942	3.589	2.803	1.870	2.273	1.744	1.452	1.345	1.296	1.424
Ireland	2.393	2.283	2.468	1.657	2.061	3.075	3.251	4.158	4.304	4.276
Italia	0.606	0.631	0.648	0.560	0.778	1.027	0.960	0.999	0.937	0.919
Luxembourg	44.129	36.468	34.840	24.219	22.240	17.215	15.577	12.500	13.031	13.584
Nederland	3.624	2.908	1.523	0.670	1.110	1.744	1.721	1.794	2.147	2.130
Portugal	:	:	:	:	0.183	0.263	0.434	0.645	0.755	0.918
United Kingdom	9.432	8.407	6.725	4.833	4.821	4.320	4.540	4.724	4.534	4.432
USA										
Japan										

4.1.9
Potential CO2 emissions
Emissions potentielles de CO2
Potentielle CO2 Emissionen

(Mio t CO2)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	210.6	208.3	210.2	210.7	227.5	228.9
Belgique/België	1.2	2.4	8.2	9.2	8.6	9.0	9.4	9.3	9.7	9.5
Danmark	0.5	0.9	1.9	1.5	1.3	1.6	1.7	1.6	1.4	1.4
BR Deutschland	9.9	24.2	47.2	48.6	61.0	54.4	51.8	50.1	54.9	55.7
Ellas	:	:	:	1.2	1.7	1.7	1.7	1.6	1.9	1.8
Espana	:	:	:	:	14.0	15.3	14.2	15.4	18.2	18.9
France	8.0	13.2	25.2	30.1	36.4	35.7	36.4	36.7	38.2	38.4
Ireland	0.3	0.4	0.6	0.6	1.2	1.4	1.4	1.6	1.5	1.6
Italia	7.3	13.9	31.8	28.8	26.3	25.0	26.6	27.5	30.0	30.6
Luxembourg	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Nederland	1.1	5.3	14.4	23.8	25.0	22.0	24.6	24.5	25.8	25.2
Portugal	:	:	:	:	1.6	3.1	4.6	4.7	6.0	6.4
United Kingdom	13.4	20.0	30.2	31.9	33.2	39.1	37.7	37.8	39.9	39.3

4.1.10
Potential CO2 emissions, per capita
Emissions potentielles de CO2, par habitant
Potentielle CO2 Emissionen, je Einwohner

(t CO2 / capita)

	1960	1965	1970	1975	1980	1985	1986	1987	1988	1989
EUR12	:	:	:	:	0.662	0.647	0.651	0.651	0.701	0.702
Belgique/België	0.132	0.254	0.853	0.935	0.869	0.910	0.956	0.939	0.981	0.959
Danmark	0.115	0.189	0.380	0.296	0.251	0.320	0.335	0.307	0.270	0.263
BR Deutschland	0.179	0.412	0.778	0.786	0.991	0.891	0.849	0.818	0.893	0.898
Ellas	:	:	:	0.133	0.179	0.172	0.173	0.158	0.189	0.180
Espana	:	:	:	:	0.375	0.397	0.367	0.399	0.470	0.488
France	0.174	0.270	0.497	0.571	0.676	0.646	0.656	0.660	0.684	0.684
Ireland	0.106	0.130	0.203	0.189	0.362	0.387	0.404	0.452	0.416	0.465
Italia	0.145	0.266	0.592	0.520	0.467	0.438	0.465	0.479	0.522	0.531
Luxembourg	0.238	0.225	0.221	0.208	0.339	0.165	0.150	0.119	0.142	0.147
Nederland	0.098	0.427	1.102	1.739	1.769	1.520	1.688	1.667	1.749	1.699
Portugal	:	:	:	:	0.166	0.308	0.448	0.455	0.584	0.617
United Kingdom	0.255	0.368	0.542	0.568	0.590	0.690	0.664	0.663	0.700	0.687

5. HEAVY METALS

Heavy metals such as cadmium, lead and mercury have both long-term (chronic) and short-term (acute) toxic effects on human beings and animals. Environmental legislation in the European Community has included some specific controls on these metals (for example, on lead in petrol) and future action is likely to follow the *multi-media* approach, where all flows of toxic substances in the environment are subject to measurement and possible control.

The data presently available at Community level are insufficient to draw up a complete flow chart for any heavy metals in the environment, although such flow charts do exist for certain Member States. However, the Eurostat raw materials balance sheets do provide statistics on the total apparent consumption of lead and mercury, which provides a measure of the total input of these metals to the environment.

These statistics should be interpreted with caution, since the apparent consumption figures are calculated as differences between production, exports, imports and stock changes. In general, it appears that consumption of both lead and mercury has remained relatively stable since the mid-1970s up to 1986; reduction of the lead content of petrol, and the introduction of lead-free petrol should lead to a fall in consumption estimates when post-1986 data become available.

Documentation

Eurostat: EC raw materials balance sheets
Office for Official Publications of the European Communities

Community Legislation

Council Directive 82/176/EEC of 22 March 1982 on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry

Council Directive 82/884/EEC of 3 December 1982 on a limit value for lead in the air

Council Directives 84/156/EEC of 8 March 1984 on limit values and quality objectives for mercury discharges by sectors other than the chlor-alkali electrolysis industry

Council Directive 85/210/EEC of 20 March 1985 on the approximation of the laws of the Member States concerning the lead content of petrol

Council Decision 85/613/EEC of 20 December 1985 concerning the adoption, on behalf of the Community, of programmes and measures relating to mercury and cadmium discharges under the convention for the prevention of marine pollution from land based sources

QUELLE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

5.1.1
Verbrauch
Consumption
Consommation

(1000 t)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
EUR12	:	1 425	1 406	:	1 509	1 429	1 355	1 400	1 341	1 370	1 452	1 471
EUR10	:	1 299	1 281	:	1 382	1 270	1 236	1 271	1 188	1 228	1 318	1 339
EUR9	1 098	1 270	1 260	1 175	1 360	1 247	1 213	1 246	1 153	1 214	1 298	1 321
Belgique/België	33	54	56	45	58	64	56	51	118	73	113	83
Danmark	10	17	14	12	15	12	11	6	20	16	24	20
BR Deutschland	287	315	340	317	386	315	320	321	305	348	341	375
Ellas	:	29	21	:	22	23	23	25	35	14	20	18
Espana	:	111	112	124	108	138	96	106	127	115	96	101
France	210	226	217	201	229	221	230	225	217	231	253	238
Ireland	2	3	3	6	7	5	7	6	3	4	1	3
Italia	218	288	278	231	280	289	259	233	210	206	202	235
Nederland	54	74	71	69	65	68	50	53	49	56	58	61
Portugal	:	15	13	16	19	21	23	23	26	27	38	31
United Kingdom	284	293	281	294	320	273	280	351	231	280	306	306
USA	1 024	1 158	1 293	1 221	1 256	1 000	1 039	1 068	996	1 070	1 016	1 066
Japan	243	250	288	296	333	411	403	352	354	421	408	386

5.1.2
Emissionen von Kraftfahrzeugen mit Benzinmotor
Emissions from petrol engined motor vehicles
Emissions de provenant des vehicules a essence

t

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:
Belgique/België	:	:	:	:	:	:	:	:	:	:	:	:
Danmark	861	864	505	404	354	308	203	209	187	145	141	122
BR Deutschland	:	:	:	:	:	:	:	:	:	:	:	:
Ellas	:	:	:	:	:	:	:	:	:	:	:	:
España	:	:	:	:	:	:	:	:	:	:	:	:
France	:	:	:	:	:	:	:	:	:	:	:	:
Ireland	:	:	1 035	884	859	505	480	456	170	167	166	160
Italia	:	:	:	:	:	:	:	:	:	:	:	:
Luxembourg	:	:	:	:	:	:	:	:	:	:	:	:
Nederland	1 700	2 600	1 330	1 260	1 240	1 250	1 270	1 190	800	340	340	290
Portugal	:	:	:	:	:	:	:	:	:	:	:	:
United Kingdom	:	:	7 500	6 700	6 800	6 900	7 200	6 500	2 900	3 000	3 100	2 600

5.1.3
Lieferungen von bleifreiem Benzin
Deliveries of unleaded petrol
Livraisons d'essences sans plomb

1 000 t

	1987	1988	1989	1990
EUR12	7543	13347	23056	33738
Belgique/België	-	14	442	670
Danmark	444	499	613	910
BR Deutschland	6393	11570	15197	18517
Ellas	-	-	-	-
España	4	13	28	70
France	-	-	442	2640
Ireland	-	-	56	166
Italia	-	89	270	704
Luxembourg	-	33	77	123
Nederland	688	870	1283	1682
Portugal	-	-	-	-
United Kingdom	14	259	4648	8256

5.1.4
Lieferungen von bleifreiem Benzin, als anteil von insgesamt
Deliveries of unleaded petrol, as proportion of total deliveries
Livraisons d'essences sans plomb, proportionellement au total

%

	1987	1988	1989	1990
EUR12	7.7	13.2	22.5	32.2
Belgique/België	-	0.5	15.4	24.5
Danmark	29	32.1	40.1	56.6
BR Deutschland	25.1	43.7	57.5	67.8
Ellas	-	-	-	-
España	0.1	0.2	0.4	0.9
France	-	-	2.4	14.5
Ireland	-	-	6.4	18.8
Italia	-	0.7	2.1	5.2
Luxembourg	-	10	20.4	29.9
Nederland	16.8	22.2	32.3	42.2
Portugal	-	-	-	-
United Kingdom	0.1	1.1	19.4	34

5.1.5
Steuerliche Unterschiede zwischen bleihaltigem und bleifreiem benzin
Tax differentials between leaded and unleaded petrol
Difference fiscale entre essence avec ou sans plomb

in nat. currencies/1000 litres

		Jan-87	Jan-88	Jan-89	Jan-90	Jan-91
Belgique/België	BFR	.	.	1000	1450	1450
Danmark	DKR	320	400	400	470	650
BR Deutschland	DM	70	60	80	80	70
Ellas	DRA	.	.	.	.	14135
España	PTA	.	.	.	.	5000
France	FF	.	.	.	197.3	362.2
Ireland	IRL	.	.	16.8	16.8	25.6
Italia	LIRE	.	. .		63020	63030
Luxembourg	LFR	.	1000	1000	1000	1000
Nederland	NFL	45.2	45.1	67.4	60.7	46.4
Portugal	ESC	.	.	.	.	12000
United Kingdom	UKL	.	9.6	20.2	27.2	29.9

(1)Luxembourg also applies a reduced rate of VAT to sales of unleaded (6% instead of 12%)

QUELLE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

5.2.1
Verbrauch
Consumption
Consommation

(1000 t)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
EUR12	:	:	:	1 372	1 248	1 080	1 193	1 352	1 516	1 454	1 523
EUR10	:	:	:	1 043	966	802	913	1 059	1 250	1 182	1 257
EUR9	1 741	1 118	1 200	1 040	963	800	912	1 058	1 247	1 181	1 253
Belgique/België	50	78	41	107	209	169	270	180	316	255	200
Danmark	21	9	13	13	6	2	4	3	5	10	9
BR Deutschland	619	248	357	378	199	153	160	473	308	276	339
Ellas	:	:	:	3	3	2	1	1	3	1	4
Espana	347	332	300	300	250	250	250	285	251	253	250
France	198	256	74	72	108	98	119	80	84	106	102
Ireland	4	5	34	5	7	2	1	12	1	29	19
Italia	340	147	147	152	151	150	142	141	140	150	145
Nederland	56	46	55	45	45	36	75	42	69	32	43
Portugal	:	:	40	29	32	28	30	8	15	19	16
United Kingdom	453	329	479	268	238	190	141	127	324	323	396
USA	2 542	2 139	2 419	2 453	1 360	1 796	1 266	1 705	1 857	1 402	1 585
Japan	215	17	:	:	:	:	:	:	:	:	:

6. OTHER MATERIALS

Substances with toxic or other harmful environmental effects, other than heavy metals (see Chapter 5), are also being subjected to controls by Community actions. As with the heavy metals, the *multi-media* approach is favoured, but again comprehensive data on flows at Community level are not available.

The most important group of Community actions in this area concerns the chlorofluorocarbons (CFCs). These substances are non-toxic, but affect the global environment both as *greenhouse gases* (see Chapter 4) and by damaging the ozone layer in the stratosphere, which filters out ultra-violet radiation.

Statistics on CFC production and consumption for specific countries are not generally available for publication for reasons of commercial confidentiality, because these substances are manufactured by a small number of companies (12 producers in the European Community), and national figures would effectively reveal the production of individual companies. However, aggregated data have been made available by the Chemical Manufacturers Association (CMA) and the European Fluorocarbon Producers Technical Committee (EFCTC), and these data form the basis of the statistics published here. They show that for CFC-11 and CFC-12 (which account for the majority of CFC production), Community production increased by about 15% between 1976 and 1987, whereas world production increased by 41% over the same period. In other words, the European Community accounts for a steadily declining proportion of world CFC production, down from over 40% in the nineteen-seventies to 33% in 1987. The proportion of Community production which was exported increased slightly, from 26% to 29%.

Community Legislation

Council Resolution of 30 May 1978 on fluorocarbons in the environment

Council Decision 80/372/EEC of 26 March 1980 concerning chlorofluorocarbons in the environment

Council Decision 82/795/EEC of 15 November 1982 on the consolidation of precautionary measures concerning chlorofluorocarbons in the environment

Council Regulation (EEC) No 3322/88 of 14 October 1988 on certain chlorofluorocarbons and halons which deplete the ozone layer

Council Resolution of 14 October 1988 for the limitation of use of chlorofluorocarbons and halons

Council Decision 88/540/EEC of 14 October 1988 concerning the conclusion of the Vienna Convention for the protection of the ozone layer and the Montreal Protocol on substances that deplete the ozone layer

Commission Recommendation 89/349/EEC of 13 April 1989 on the reduction of chlorofluorocarbons by the aerosol industry.

6.1
Fluorchlorkohlenwasserstoffe
Chlorofluorocarbons
Chlorofluorocarbones

QUELLE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

SOURCE: Eurostat CRONOS

6.1.1
CFC-11,12

(1 000 t)

	1976 EUR9	1980 EUR9	1981 EUR10	1982 EUR10	1983 EUR10	1984 EUR10	1985 EUR10	1986 EUR12	1987 EUR12	1988 EUR12	1989 EUR12	1990 EUR12
EG Erzeugung EC production Production CE	326.4	295.7	300.1	289.0	310.2	322.2	336.3	372.0	376.1	348.7	289.2	209.9
EG Verkauf EC sales Ventes CE	244.1	216.9	209.8	206.7	216.5	217.8	228.4	259.3	271.4	109.4	179.6	135.9
Treibgase Aerosols Aérosols	176.9	126.4	116.1	111.7	113.9	114.7	117.6	136.2	137.3	109.4	:	:
Nicht Treibgase Non-aerosols Non-aérosols	67.2	90.5	93.7	95.0	102.6	103.1	110.8	123.1	134.1	141.5	:	:
Kühlung Refrigeration Réfrigération	20.8	21.2	21.5	21.2	21.6	23.1	24.3	26.8	27.3	27.4	:	:
Schaumkunststoff Foam plastics Mousses plastiques	42.2	61.9	64.1	65.6	70.1	69.4	74.4	82.8	93.3	100.3	:	:
Lösungsmittel und Solvent and others Dissolvants et autres	4.2	7.4	8.1	8.2	10.9	10.6	12.1	13.5	13.5	13.8	:	:
EG Ausfuhren EC exports Exportations CE	83.6	79.4	88.2	82.0	91.2	103.4	107.4	111.4	110.1	96.3	106.6	75.7
To Montreal countries	:	:	:	:	:	:	:	:	:	:	34.8	36.9
To non-Montreal countries	:	:	:	:	:	:	:	:	:	:	71.8	38.8
Veränderung des EG EC stock change Variation du stock CE	-1.3	-0.6	2.1	0.3	2.5	1.0	0.5	1.3	-5.4	1.3	3.1	-1.3
Welterzeugung World production Production mondiale	806.3	742.7	759.3	742.7	816.0	893.8	938.3	1 026.1	1 134.3	:	:	:
EG Erzeugung in Prozent der Welterzeugung EC production as % of world Production CE en % de la production mondiale	40.5%	39.8%	39.5%	38.9%	38.0%	36.0%	35.8%	36.3%	33.2%	:	:	:

6.1.2
CFC-11,12, 113, 114, 115

(1 000 t)

	1986 EUR12	1987 EUR12	1988 EUR12	1989 EUR12	1990 EUR12
EG Erzeugung EC production Production CE	443.2	449.7	429.3	372.5	284.3
EG Verkauf EC sales Ventes CE	311.0	324.0	307.3	231.8	183.8
EG Ausfuhren EC exports Exportations CE	134.3	133.6	123.3	117.5	105.7
To Montreal countries	:	:	:	37.2	60.1
To non-Montreal countries	:	:	:	80.3	45.6
EG Einfuhren EC imports Importations CE	3.0	3.2	3.0	1.6	1.0

6.1.3
Halon-1211, 1301, 2402

(1 000 t)

	1986 EUR12	1987 EUR12	1988 EUR12	1989 EUR12	1990 EUR12
EG Erzeugung EC production Production CE	13.8	:	:	14.2	11.6
EG Verkauf EC sales Ventes CE	7.4	:	:	8.3	7.5
EG Ausfuhren EC exports Exportations CE	7.0	:	:	6.1	4.8
To Montreal countries	:	:	:	2.5	2.3
To non-Montreal countries	:	:	:	3.7	45.6
EG Einfuhren EC imports Importations CE	0.1	:	:	0.6	0.7

7. AIR POLLUTION

This chapter provides statistics on man-made emissions of five major air pollutants: sulphur oxides (SO_X), nitrogen oxides (NO_X), particulate matter, carbon monoxide (CO) and hydrocarbons.

These "traditional" air pollutants have a wide range of undesirable effects on human health, on ecosystems and on buildings. They are major components both of local pollution and long-distance trans-boundary pollution, and they have been studied and monitored over many years.

Legislation intended to control emissions of the major air pollutants exists at national, Community and international levels. Most notably, at international level, the 1985 Helsinki Protocol to the Convention on Long-range Transboundary Air Pollution (1979) has committed at least eight Member States to reduce sulphur dioxide emissions by at least 30%, based on 1980 emissions. On present trends, this level of reduction will be achieved in most countries in the near future, for SO_X. The trend for NO_X is less clear, with emissions for many countries close to or even above 1980 levels.

All emissions estimates should be interpreted with caution. They are estimated from fuel consumption and activity statistics, using emission factors; there are uncertainties both in the emission factors and in the underlying statistics, which cannot easily be quantified. Since estimation procedures vary from country to country, inter-country comparisons may be invalid. However, emission trends for a single country should normally be shown reliably in these tables. It should also be noted that as countries attempt to improve their estimation procedures, future editions of this table may include revised historical series.

The statistics in this chapter are based on data obtained from the Member States via the OECD-Eurostat questionnaire on the state of the environment. Some historical data, as well as the data for Japan and the USA, were made available by OECD.

Notes:

- stationary sources include power stations, industry, households and other non-mobile sources
- mobile sources are equivalent, for most purposes, to the transport sector

Community Legislation

Council Directive 70/220/EEC of 20 March 1970 on the approximation of the laws of the Member States relating to measures to be taken against air pollution by gases from positive ignition engines of motor vehicles

Council Directive 72/306/EEC of 2 August 1972 on the approximation of the laws of the Member States relating to measures to be taken against the emission of polluants from diesel engines for use in vehicles

Council Directive 75/716/EEC of 24 November 1975 on the approximation of the laws of the Member States relating to the sulphur content of certain liquid fuels

Council Resolution of 15 July 1980 on transboundary air pollution by sulphur dioxide and suspended particulates

Council Directive 80/779/EEC of 15 July 1980 on air quality limit values and guide values for sulphur dioxide and suspended particulates

Council Decision 81/462/EEC of 11 June 1981 on the conclusion of the Convention on long-range transboundary air pollution

Council Decision 82/459/EEC of 24 June 1982 establishing a reciprocal exchange of information and data from networks and individual stations measuring air pollution within the Member States

/...

Community Legislation (continued)

Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants

Council Directive 85/203/EEC of 7 March 1985 on air quality standards for nitrogen dioxide

Council Regulation (EEC) No 3528/86 of 17 November 1986 on the protection of the Community's forests against atmospheric pollution

Council Directive 88/77/EEC of 3 December 1987 on the approximation of the laws of the Member States relating to measures to be taken against the emission of gaseous pollutants from diesel engines for use vehicles

Council Directive 88/609/EEC of 24 November 1988 on the limitation of emissions of certain pollutants into the air from large combustion plants

7.1
SCHWEFELOXID-EMISSIONEN
EMISSIONS OF SULPHUR OXIDES
EMISSIONS D'OXYDES DE SOUFRE

7.1.1
Insgesamt
Total
Total

(1000 t SO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	828	712	691	560	500	452	474	414	:	:
Danmark		574	418	447	364	368	312	296	340	278	249	242	193
BR Deutschland		3 743	3 334	3 194	3 039	2 868	2 690	2 603	2 396	2 263	1 933	1 237	1 001
Ellas	g)	:	:	546	:	:	:	:	:	:	:	:	:
Espana	g)	:	3 003	3 404	:	:	2 543	:	2 156	:	:	:	:
France	c)	2 966	3 328	3 339	2 588	2 490	2 095	1 867	1 475	1 348	1 287	1 223	1 272
Ireland		:	186	217	189	155	140	129	138	:	174	:	:
Italia	a,f)	2 830	3 331	3 211	:	:	2 233	2 240	2 086	2 074	2 010	2 006	:
Luxembourg		:	:	24	20	16	13	14	16	14	14	12	12
Nederland	d)	807	429	491	468	394	319	302	269	273	267	259	218
Portugal	e)	116	178	267	:	:	305	:	198	234	218	205	:
United Kingdom		6 423	5 370	4 894	4 433	4 208	3 861	3 719	3 719	3 895	3 898	3 812	3 699
USA		28 407	25 850	23 389	22 584	21 424	20 784	21 525	21 064	20 669	20 384	20 738	:
Japan	b)	4 973	2 586	1 263	:	:	1 049	:	:	835	:	:	:

7.1.2
Insgesamt je Einwohner
Total per capita
Total par habitant

(kg SO2 je Einwohner / per capita / par habitant)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	84	72	70	57	51	46	48	42	:	:
Danmark		116	83	87	71	72	61	58	66	54	49	47	38
BR Deutschland		62	54	52	49	47	44	43	39	37	32	20	16
Ellas	g)	:	:	57	:	:	:	:	:	:	:	:	:
Espana	g)	:	85	91	:	:	67	:	56	:	:	:	:
France	c)	58	63	62	48	46	38	34	27	24	23	22	23
Ireland		:	59	64	55	45	40	37	39	:	49	:	:
Italia	a,f)	53	60	57	:	:	39	39	37	36	35	35	:
Luxembourg		:	:	64	55	44	35	38	44	38	38	32	32
Nederland	d)	62	31	35	33	28	22	21	19	19	18	18	15
Portugal	e)	13	20	27	:	:	30	:	19	23	21	20	:
United Kingdom		115	96	87	79	75	69	66	66	69	68	67	65
USA		139	120	103	98	92	89	91	:	:	:	:	:
Japan	b)	48	23	11	:	:	9	:	:	:	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

7.1
SCHWEFELOXID-EMISSIONEN
EMISSIONS OF SULPHUR OXIDES
EMISSIONS D'OXYDES DE SOUFRE

7.1.3
Bewegliche Emittenten
Mobile sources
Sources mobiles

(1000 t SO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	12	:	12	12	:	:	:	:	:	:
Danmark		5	9	11	11	14	13	14	15	10	11	10	11
BR Deutschland		155	133	107	107	103	101	94	87	98	90	73	74
Ellas	h)	:	:	83	:	:	:	:	:	:	:	:	:
Espana	h)	:	57	82	:	:	32	:	34	:	:	:	:
France	c)	69	103	127	92	93	95	98	107	114	120	131	135
Ireland		:	3	5	5	4	5	4	5	:	7	:	:
Italia	a)	77	91	154	:	:	:	119	79	84	89	99	:
Luxembourg		:	:	2	:	:	1	:	1	:	:	:	:
Nederland		47	41	38	33	34	33	32	32	34	36	37	32
Portugal	e)	7	7	11	:	:	12	:	7	7	9	9	:
United Kingdom	f)	199	153	117	117	116	101	106	102	103	97	105	121
USA		607	650	889	884	824	784	825	864	869	884	938	952
Japan	b)	:	108	119	:	:	131	:	:	151	:	:	:

7.1.4
Ortsfeste Emittenten
Stationary sources
Sources fixes

(1000 t SO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	816	:	679	548	:	:	:	:	:	:
Danmark		569	409	436	353	354	299	282	325	268	238	232	182
BR Deutschland		3 588	3 201	3 087	2 932	2 765	2 589	2 509	2 309	2 165	1 843	1 164	927
Ellas	h)	:	:	463	:	:	:	:	:	:	:	:	:
Espana	h)	:	2 946	3 322	:	:	2 511	:	2 122	:	:	:	:
France	c)	2 897	3 225	3 212	2 496	2 397	2 000	1 769	1 368	1 234	1 167	1 092	1 137
Ireland		:	183	212	184	151	135	125	133	:	167	:	:
Italia	a,g)	2 754	3 240	3 057	:	:	:	2 121	2 007	1 990	1 921	1 907	:
Luxembourg		:	:	22	:	:	12	:	12	:	:	:	:
Nederland	d)	760	388	453	435	360	286	270	237	239	231	222	186
Portugal	e)	109	171	256	:	:	293	:	191	227	210	196	:
United Kingdom		6 224	5 217	4 777	4 316	4 092	3 760	3 613	3 617	3 792	3 801	3 707	3 578
USA		27 800	25 200	22 500	21 700	20 600	20 000	20 700	20 200	19 800	19 500	19 800	:
Japan	b)	:	2 477	1 144	:	:	918	:	795	684	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

CITEPA-CORINAIR - 1985 - SO2 EMISSIONS (Unit : Mg/year = t/year)

	Die vorliegenden Zahlen mögen kleineren Änderungen unterliegen, wenn neue und bessere Informationen verfügbar sind	The values presented in these tables may suffer some slide modifications when new and better informations will be available	Les valeurs presentées dans ces tableaux peuvent subir des modifications par la suite si de nouvelles et meilleurs informations sont disponibles
(a) 0	keine Emissionen, da Verfahren nicht vorhanden	no emission due to a not existing activity	aucune émission due à une activité inexistante
(na) 0	keine Emissionen, da Verfahren vernachlässigbar	no emission due to a negligible activity	aucune émission due à une activité négligeable
(ua)	für das Verfahren sind keine Zahlen verfügbar	unavailable data for the activity	donnée indispinible pour l'activité
(ag xxxx)	das Verfahren wird aufgeführt unter xxxx	activity aggregated in activity xxxx	activité agrégée à l'activité xxxx
(f) 0	keine Emission, da der Emissionsfaktor gleich Null ist	no emission due to an emission factor equal to zero	aucune émission due à un facteur d'émission nul
(nf) 0	keine Emission, da der Emissionsfaktor zu vernachlässigen ist	no emission due to a negligible emission factor	aucune émission due à un facteur d'émission négligeable
(uf)	unbekannter Emissionsfaktor	unknown emission factor	facteur d'émission inconnu
-	vom Land nicht definiertes Verfahren, andere wichtig ...	activity not defined by the country in item , other relevant...	activité non définie par le pays concerné
(1) :	1030 von UK hier berücksichtigt	1030 of UK included here	1030 de UK inclus ici
(2) :	D und UK berücksichtigen Verfahren in 1040	D and UK act. included in 1040	D et UK inclus dans 1040
(3) :	UK berücksichtigt Verfahren in 1010	UK act. included in 1010	UK inclus dans 1010
(4) :	1020 der UK hier berücksichtigt	1020 of UK included here	1020 de UK inclus ici
(5) :	B berücksicht Verfahren in 3020	B act. included in 3020	B inclus dans 3020
(6) :	3010 von Belgien hier berücksichtigt; NL berücksichtigt Verf. in 4030	3010 of B included here ; NL act. included in 4030	3010 de B inclus ici ; NL inclus dans 4030
(7) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(8) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(9) :	UK berücksichtigt Verf. in 3060; Verf. 4160 von DK hier berücksichtigt	UK act. included in 3060 ; 4160 of DK included here	UK inclus dans 3060 ; 4160 de DK inclus ici
(10) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(11) :	B berücksichtigt Verf. in 4020; UK (ua)	B act. included in 4020; UK (ua)	B inclus dans 4020; UK (ua)
(12) :	4010 von B hier berücksichtigt: UK (ua)	4010 of B included here; UK (ua)	4010 de B inclus ici; UK (ua)
(13) :	UK (ua); 3020 der NL hier berücksichtigt	UK (ua); 3020 of NL included here	UK (ua); 3020 de NL inclus ici
(14) :	L (ua)	L (ua)	L (ua)
(15) :	UK (ua)	UK (ua)	UK (ua)
(16) :	UK (uf)	UK (uf)	UK (uf)
(17) :	DK berücksichtigt Verf. in 3050	DK act. included in 3050	DK inclus dans 3050
(18) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(19) :	6020 Deutschland hier berücksichtigt	6020 of D included here	6020 de D inclus ici
(20) :	D berücksichtigt Verfahren in 6010	D act. included in 6010	D inclus dans 6010

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
1010	Elektrizitätserzeugung Production of electricity Production d'électricité	1	116 217	18 640	1 197 731	359 268	1 641 957	346 046	39 342	1 001 399	1 241	63 443	84 882	2 636 809	7 506 975
1020	Wärmeerzeugung (Fernwärme) Production of heat (district heating) Production de chaleur (chauff. urbain)	2	5 028	41 350	(ag 1040)	(a) 0	(a) 0	66 238	68	21	(a) 0	723	(a) 0	(ag 1040)	113 428
1030	Verbundprod. von Wärme & Elekt. (Fernwärme) Combined prod. of electr. & heat (district heating) Prod. combinée électr. & chaleur (chauff. urbain)	3	6 359	148 601	102 850	(a) 0	(a) 0	(a) 0	(a) 0	2 684	(a) 0	(na) 0	(a) 0	(ag 1010)	260 494
1040	Gewerbe & Haushalte (nur Wärmeerz.) Commerc., institution & resid. (heat gener. only) Commercial, institution & résidentiel	4	60 972	32 796	246 028	14 097	57 223	197 410	39 655	181 787	2 569	7 082	1 063	311 718	1 152 400
2010	ÖLRAFFINERIE OIL REFINERY RAFFINERIE DE PETROLE		34 522	3 949	144 637	27 607	96 929	223 924	600	147 547	(a) 0	81 800	12 900	121 000	895 415
	GES. INDUSTR.VERBRENNUNG (o. Ölindustrie) TOTAL COMBUST. IN INDUSTRY (ex. oil industry) TOTAL COMBUST. INDUSTR. (ex. ind. pétrol.)		98 993	61 383	416 203	81 139	263 345	444 062	55 412	549 934	4 610	14 521	68 918	558 466	2 616 986
3010	Bergwerk Colliery Houillères	5	(ag 3020)	(a) 0	2 219	(a) 0	(a) 0	27 461	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	9 147	38 827
3020	Eisen & Stahlindustrie Primary iron & steel industry Industrie sidérurgique	6	22 601	(a) 0	15 272	5 675	14 213	81 105	(a) 0	95 192	420	(ag 4030)	378	79 681	314 537
3030	Nicht-Metallindustrie Non-ferrous metals industry Industrie des métaux non ferreux	7	9 421	316	14 743	9 259	3 074	3 078	3 585	33 618	(a) 0	(f) 0	(a) 0	(ag 3060)	77 094
3040	Chemieindustrie Chemical industry Industrie chimique	8	26 644	12 024	139 920	1 408	59 475	115 128	12 347	189 245	4 190	13 534	13 820	(ag 3060)	587 735
3050	Papierbreierzeugung Paper pulp production Production de pâte à papier	9	3 481	325	67 727	3 935	74 049	65 117	(a) 0	42 204	(a) 0	5	12 894	(ag 3060)	269 737
3060	Andere bedeutende Industrien (gesamt) Other relevant industries (total) Autres industries importantes (total)	10	36 846	48 718	176 322	60 862	112 534	152 173	39 480	189 675	-	982	41 826	469 638	1 329 056
	Nahrungs & Getränkeindustrie Food & drink industry Industrie agro-alimentaire		13 194	-	-	12 943	-	-	21 999	-	-	-	-	-	
	Zuckerraffinerie Sugar refining Raffinage de sucre		7 390	-	-	-	-	-	-	-	-	-	-	-	
	Nahrungs,Milch & Zuckerindustrie Food,milk and sugar industries Industries alimentaires + indust. lait & sucre		-	-	-	-	-	79 159	-	-	-	-	-	-	
	Holz & Korkindustrie Wood & cork industries Industries du bois et du liège		-	-	-	-	-	-	-	-	-	-	(f) 0	-	
	Textilindustrie Textile industry Industrie textile		-	-	-	8 294	-	-	-	-	-	-	-	-	
	Plastik,Papier,Holz,Druck,Textil...industrie Plastic,paper,wood,printing,textile... industries Plastique, papier, bois, imprimerie, textile		6 299	-	-	-	-	-	-	-	-	-	-	-	
	Gummi, Plastik, Textil...industrie Rubber,plastic,textile... industries Caoutchouc, plastique, textile		-	-	-	-	-	35 943	-	-	-	-	-	-	
	Brauerei, Gummi, Salz, Glas , Malz...industrie Brewery,Rubber,salt mn.,glas ref,malt Brasserie, caoutch., mines de sel, ind. verre, malt		-	-	11 109	-	-	-	-	-	-	-	-	-	
	Herstellung & Reparatur von Fahrzeugen Manuf. and rep. of autom. a. o. vehicles Constr. et rép. automobile et autres véhicules		-	-	18 089	-	-	-	-	-	-	-	-	-	
	Maschinen, Elektrizitäts, Schiffs, Autoindustrie Mechanics,electricity,ships,vehicles industries Mécanique, électricité, ind. navale et automobile		-	-	-	-	-	24 206	-	-	-	-	-	-	
	Metallerzeugende Industrie Metal production industry Produits métalliques		8 388	-	-	-	-	-	-	-	-	-	-	-	
	Bausloff, Glasindustrie Building products,lime,cement,glass industries Matériaux de constr.,ind.chaux,ciment.,verre		-	-	-	-	-	12 865	-	-	-	-	-	-	
	Mineral(dünger)industrie Minerals production industry Production de minerais		739	-	-	12 615	-	-	-	-	-	-	-	-	
	Nicht-metallische Mineralindustrie Non metallic Minerals production industry Production de minerais non métalliques		-	-	-	-	-	-	6 098	-	-	-	-	-	
	Müllverbrennung Waste incinerators Incinération de déchets		836	-	-	-	-	-	-	-	-	-	-	-	
	Landwirtschaft Agriculture Agriculture		-	-	-	-	-	-	-	-	-	-	-	8 194	

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Brennstoffumwandlung Fuel conversion Transformation de combustibles		-	-	-	-	-	-	-	-	-	-	-	15 667	
	Eisenbahn (Personentransport) Railways (transport) Chemin de fer (transport)		-	-	-	-	-	-	-	-	-	-	-	4 730	
	Naturgaskompression Natural gas compressors Compresseurs de gaz naturel		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Nicht näher spez. Industrie Other industries not precisely specified Autres industries non précisement spécifiées		-	48 718	147 124	27 010	112 534	-	11 383	189 675	-	982	41 826	441 047	
	GES. PRODUKTIONSVERFAHREN TOTAL PRODUCTION PROCESSES TOTAL COMBUST. DES PROCEDES IND.		54 440	15 703	149 004	17 630	63 210	104 587	1 689	130 535	8 259	21 119	23 448	95 766	685 390
4010	Zechenkokserzeugung Colliery coke production Production de coke par cokeries minières	11	(ag 4020)	(a) 0	624	(a) 0	(a) 0	(f) 0	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	(ua)	624
4020	Metallurgische Koksproduktion Metallurgical coke production Production de coke par cokeries sidérurgiques	12	7 561	(a) 0	1 699	(a) 0	(f) 0	2 906	(a) 0	(f) 0	(a) 0	248	805	(ua)	13 219
4030	Sinterfabrik Sinter plant Chaines d'agglomération	13	5 906	(a) 0	37 918	1 469	10 704	30 624	(a) 0	17 320	7 922	10 454	672	(ua)	122 989
4040	Eisengießerei Ferrous metal foundries Fonderies de métaux ferreux	14	1	863	2 265	(f) 0	284	(f) 0	(na) 0	(f) 0	(ua)	86	156	4 032	7 689
4050	Schwefelsäureerzeugung Sulfuric acid production Production d'acide sulfurique		18 645	504	17 201	9 233	17 326	27 050	(a) 0	10 884	(a) 0	7 204	8 352	22 981	139 380
4060	Salpetersäureerzeugung Nitric acid production Production d'acide nitrique		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	0
4070	Äthylen und Propylenerzeugung Ethylene and propylene production Production d'éthylène et de propylène		(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	408	(f) 0	(f) 0	408
4080	1,2 Dichloräthan-Produktion (ausg. 4220) 1,2 dichloroethane production (except 4220) Production de 1,2 dichloroéthane (excepté 4220)	15	(ag 4220)	(a) 0	(f) 0	(a) 0	(ag 4090)	(f) 0	(a) 0	(f) 0	(a) 0	(a) 0	(a) 0	(ua)	0
4090	Vinylchloridproduktion (ausg. 4220) Vinylchloride production (except 4220) Production de chlorure de vinyl (excecpté le 4220)	16	(ag 4220)	(a) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(a) 0	(f) 0	(ua)	0
4100	Polyäthylenproduktion (Niederdruckverf.) Polyethylene Low Density production Production de polyéthylène basse densité	17	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(ua)	0
4110	Polyäthylenproduktion (Hochdruckverf.) Polyethylene High Density production Production de polyéthylène haute densité	18	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(ua)	0
4120	Polyvinylchloridproduktion Polyvinylchloride production Production de chlorure de polyvinyl		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	0
4130	Zement und Kalkproduktion Cement and lime production Production de ciment et de chaux		5 212	7 797	3 201	6 850	18 966	11 112	1 358	49 639	63	975	4 663	68 753	178 589
4140	Glasproduktion Glass production Production de verre	19	8 370	208	24 439	(f) 0	15 930	18 355	(f) 0	16 322	274	817	5 251	(ua)	89 966
4150	Herstellung keramischer Produkte Production of ceramic materials Production de matériaux en céramique		807	6 331	2 685	75	(f) 0	(f) 0	(na) 0	32 041	(a) 0	925	3 549	(uf)	46 413
4160	Papierbreiproduktion Paper pulp production Production de pâte à papier	20	(f) 0	(ag 3050)	3 294	3	(na) 0	8 530	(na) 0	4 329	(a) 0	(a) 0	(f) 0	(f) 0	16 156
4170	Fermentation : Brotproduktion Fermentation process : bread production Procédé de fermentation : production de pain		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	0
4180	Fermentation : Weinproduktion Fermentation process : wine production Procédé de fermentation : production de vin		(a) 0	(na) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	0
4190	Andere wichtige Verfahren (gesamt) Other relevant processes (total) Autres procédés importants (total)	21	7 938	0	55 678	0	0	6 010	331	-	0	-	-	0	69 957
	Bierherstellung Beer making Fabrication de bière		(f) 0	(f) 0	-	(f) 0	-	-	(na) 0	-	(f) 0	-	-	(f) 0	
	Petrochemische Industrie Petrochemical industry Industrie pétrochimique		(f) 0	-	-	-	-	-	-	-	-	-	-	-	
	Titandioxidproduktion Titanium dioxide production Production de dioxide de titane		4 250	-	-	-	-	-	-	-	-	-	-	-	
	Hochöfen,Zucker-,Schwermetall-,Titandioxidprod. Blast furnaces,Sugar,heavy metals,Tit. diox. prod. Hauts fourn.,sucre,métaux lourds,diox. de titane		-	-	23 457	-	-	-	-	-	-	-	-	-	

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Clausverfahren Claus unit Unité Claus		3 688	-	-	-	-	-	-	-	-	-	-	-	
	Nichtmetallurgische Koksproduktion Non metallurgical coke production Production non métallurgique de coke		-	-	-	-	(f) 0	-	-	-	-	-	-	-	
	Eisenmetallurgie : Wiedererhitzung Iron metallurgy : reheating Métallurgie du fer : fours de réchauffement		-	-	-	-	-	6 010	-	-	-	-	-	-	
	Zuckerraffinierung Sugar refining Raffinage du sucre		-	-	-	-	-	-	331	-	-	-	-	-	
	Aluminiumproduktion (Erstschmelze) Primary aluminium production Production d'aluminium première fusion		-	-	5 215	-	-	-	-	-	-	-	-	-	
	Schwefelproduktion : Naturgasschwefelung Sulphur prod. : Natural gas desulphurisation Prod. de soufre : désulfuration du gaz naturel		-	-	27 006	-	-	-	-	-	-	-	-	-	
	Andere chemische Verfahren Other chemical processes Autres procédés chimiques		-	-	-	-	-	-	-	-	-	-	-	(f) 0	
	Andere nicht weiter spez. Verfahren Other not specified processes Autres procédés non spécifiés		-	-	-	-	-	-	-	-	-	-	-	(f) 0	
4220	1,2 Dichloräthan&Vinylchloridproduktion 1,2 Dichloroethane&vinylchloride production prod. de 1,2 dichloroéthane&chlorure de vinyl	22	(f) 0	(a) 0	eg4080-90	(a) 0	(ag 4090)	(na) 0	(a) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	0
	GESAMTE LÖSUNGSMITTELVERDUNSTUNG TOTAL SOLVENT EVAPORATION TOTAL EVAPORATION SOLVANTS		0	0	0	0	0	0	0	0	0	0	0	0	0
5010	Farbanwendungen : Automobilherstellung Paint application : manufacture of automobiles Application de peinture : construction d'automobiles														
5020	Farbanwendung : Schiffbau Paint application : ship building Application de peinture : construction navale	23													
5030	Farbanwendung : Metallprodukte Paint application: manufacture of metal articles Appl. de peinture : fabric. art. mét. (ex. 5010/20)	24													
5040	Farbanwendung : Holzprodukte Paint application : wood products industry Appl. de peinture : fabrication d'articles en bois	25													
5050	Farbanwendung : Bauwesen Paint application : construction and buildings Appl. de peinture : construc. mais.&immeubles	26													
5060	Farbanwendung : Autoreparatur Paint application : vehicles refinishing Application de peinture : réparation de véhicules	27													
5070	Farbanwendung : Privatverbrauch Paint application : domestic use Application de peinture : usages domestiques	28													
5080	Gebrauch von Haushaltswaren (ausg. 5070) Use of domestic products (except 5070) Emploi de produits domestiques (excepté 5070)	29													
5090	Metallentfettung Metal degreasing Dégraissage métallique														
5100	Trockenreinigung Dry cleaning Nettoyage à sec														
5110	Druckereien Printing industry Imprimerie														
5120	Fett, Nahrungs- und Industrieölgewinnung Fat, edible and non edible oil extraction Graisse, extraction d'huile comestible ou non	30													
5130	Herstell. & Bearb. chem. Prod.(Elaste&Gummi) Chem. prod. manufact. & proc.(elast.&rubber) M. en oeuvre & élabor.prod.chim.(élast.&caout.)	31													
5140	Anwendung von Klebstoffen Application of glues and adhesives Application des colles														
5150	Andere wichtige Lösungsmittelverd. (gesamt) Other relevant solvent evaporation (total) Autres évaporations importantes de solvants (total)	32													
	Farbanwendung / -industrie Paint application / industry Application de peinture / industrie														
	Farb- und Lackanwendungen Paint and varnish applications Application de peinture et de vernis														
	Sprühdosen Spray cans Vaporisateurs divers														

NO SO2 EMISSION IN GROUPE 5

CITEPA-CORINAIR - 1985 - SO2 EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Andere Lösungsmittelverd. (Holz,Kleidung,Leder) Other relevant solvent evap. (wood,textile,leather) Autres évaporations de solvants (bois,textile,cuir)														
	Andere nicht spez. Lösungsmitterverd. Other not specified solvent evaporation Autres évaporat. de solvants non spécifiées														
	GESAMTER STRASSENTRANSPORT TOTAL ROAD TRANSPORTATION TOTAL TRANSPORT ROUTIER		15 920	11 164	59 179	0	67 274	99 289	4 377	75 770	586	11 070	6 667	43 480	394 776
6010	Benzinmotoren : Personen & Leichtkraftwagen Gasol. engines : automob. & light duty vehicles Mot. à essence : auto. & véhicules utilitaires légers	33	1 419	(nf) 0	11 905	(i) 0	11 388	26 183	871	4 109	58	1 488	659	14 937	73 017
6020	Benzinmot. : Schwerlastwagen&Autobusse>3.5 t Gasol. eng. : heavy duty vehic.&autobuses>3.5 t Mot. à essence : véhic util lourds&autobus>3.5 t	34	68	(nf) 0	(ag 6010)	(a) 0	(ua+na)0	113	(a) 0	68	1	(na) 0	(a) 0	(a) 0	250
6030	Benzinmotoren : Motorräder < 50 cm3 Gasoline engines : motor cycles < 50 cm3 Moteurs à essence : motocycles < 50 cm3		4	(nf) 0	5	(i) 0	141	1 666	(na+ua)0	136	(i) 0	(i) 0	(i) 0	30	1 982
6040	Benzinmotoren : Motorräder > 50 cm3 Gasoline engines : motor cycles > 50 cm3 Moteurs à essence : motocycles > 50 cm3		47	(nf) 0	52	(i) 0	229	719	(i) 0	144	(i) 0	(i) 0	2	156	1 349
6050	Dieselmotoren : Personen & Leichtkraftwagen Diesel engines : automobiles & light duty vehicles Moteurs diesel : auto. & véhicules utilitaires légers		4 302	3 395	13 919	(i) 0	15 258	49 092	2 152	23 797	82	3 522	3 534	3 475	122 528
6060	Dieselmot. : Schwerlastwagen&Autobusse>3,5 t Diesel eng. : heavy duty vehicles&autobuses>3.5 t Mot. diesel : véhic. util. lourds et autobus>3,5 t		9 466	7 769	33 298	(i) 0	40 244	21 516	1 354	47 516	445	6 060	2 472	24 882	195 022
6070	Flüssiggasmotoren : Personen & Leichtkraftwagen LPG engines : automobiles & light duty vehicles Moteurs au gaz : auto. & véhicules utilitaires légers		(i) 0	(nf) 0	(na) 0	(i) 0	14	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(a) 0	(a) 0	14
6080	Lager flüssiger Brennstoffe Depots of liquid fuels Dépôts de combustibles liquides	35	614	(ua+na)0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(ag 6090)	(i) 0	(i) 0	614
6090	Tankstellen (auch Auftanken von Wagen) Service stations (including refuelling of cars) Stations-services	36	(i) 0	(nf) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	(i) 0	0
6100	Andere wichtiger Straßentransport Other relevant road transportation (total) Autres catégories importantes du transport routier	37	-	-	(i) 0	-	-	-	(i) 0	-	-	-	-	(i) 0	0
	Verdunst. verursacht von Fahrz. mit Ottomot. Evaporation from vehicles with otto engines Evaporation pour les véhicules à moteur Otto		-	-	(i) 0	-	-	-	-	-	-	-	-	-	
	Verdunstung verursacht durch Benzintanks Evaporation from gasoline tanks Evaporation des réservoirs d'essence		-	-	-	-	-	-	(i) 0	-	-	-	-	(i) 0	
	GESAMTE NATUR TOTAL NATURE TOTAL NATURE		0	0	0	0	0	0	0	0	0	0	0	0	0
7010	Nadelwald Coniferous forests Forêts de conifères														
7020	Laubwald Deciduous forests Forêts de feuillus						NO SO2 EMISSION IN GROUPE 5								
7030	Andere wichtige natürliche Emittenten (gesamt) Other relevant natural activity (total) Autres activités naturelles importantes (total)	38													
	Grünland, Getreide und andere Grasslands,crops and Other species Cultures, prairies et autres espèces														
	GESAMTE SONSTIGE AKTIVITÄTEN TOTAL MISCELLANEOUS ACTIVITIES TOTAL ACTIVITES DIVERS		0	0	0	0	0	0	0	0	0	0	0	0	0
8010	Bergbau fester fossiler Brennstoffe Solid fossil fuels mining Mines de combustibles solides fossiles	39													
8020	Landaufschüttung Land filling Dépôts de déchets en décharge	40					NO SO2 EMISSION IN GROUPE 5								
8030	Gülleausbringung Sludge spreading Epandage de boues	41													
8040	Gasverteilung Distribution of gas Distribution du gaz	42													
	SUMME ALLER AKTIVITÄTEN TOTAL ALL ACTIVITIES TOTAL TOUTES ACTIVITES		392 451	333 586	2 315 632	499 741	2 189 938	1 481 556	141 143	2 089 677	17 265	199 758	197 878	3 767 239	13 625 864

7.2
STICKSTOFFOXID-EMISSIONEN
EMISSIONS OF NITROGEN OXIDES
EMISSIONS D'OXYDE D'AZOTE

7.2.1
Insgesamt
Total
Total

(1000 t NO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	317	:	297	271	:	281	292	297	:	:
Danmark		:	178	241	207	224	218	225	259	267	262	249	:
BR Deutschland		2 381	2 571	2 980	2 897	2 864	2 903	2 965	2 959	3 008	2 927	2 859	2 707
Ellas	h)	:	:	217	:	:	:	:	:	:	:	:	:
Espana	h)	:	625	951	:	:	937	:	826	:	:	:	:
France	c)	1 322	1 608	1 834	1 703	1 696	1 657	1 645	1 579	1 584	1 605	1 656	1 766
Ireland		:	60	67	64	64	63	61	68	:	115	:	:
Italia	a,e)	1 411	1 507	1 585	:	:	:	1 529	1 555	1 570	1 650	1 705	:
Luxembourg		:	:	23	:	:	22	:	22	:	:	:	:
Nederland	d)	455	464	558	552	544	540	554	547	565	578	585	550
Portugal	g)	72	104	166	:	:	192	:	96	110	116	122	:
United Kingdom	f)	2 510	2 427	2 442	2 359	2 322	2 330	2 293	2 402	2 475	2 578	2 642	2 690
USA		18 300	19 200	20 400	20 400	19 600	19 000	19 700	19 800	19 300	19 500	19 800	:
Japan	b)	1 651	1 781	1 400	:	:	1 367	:	:	1 176	:	:	:

7.2.2
Insgesamt je Einwohner
Total per capita
Total par habitant

(kg NO2 je Einwohner / per capita / par habitant)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	32	:	30	27	:	29	30	30	:	:
Danmark		:	35	47	40	44	43	44	51	52	51	49	:
BR Deutschland		39	42	48	47	46	47	48	48	49	48	47	44
Ellas	h)	:	:	23	:	:	:	:	:	:	:	:	:
Espana	h)	:	18	25	:	:	25	:	21	:	:	:	:
France	c)	26	31	34	31	31	30	30	29	29	29	30	31
Ireland		:	19	20	19	18	18	17	19	:	32	:	:
Italia	a,e)	26	27	28	:	:	:	27	27	27	29	30	:
Luxembourg		:	:	63	:	:	60	:	59	:	:	:	:
Nederland	d)	35	34	39	39	38	38	38	38	39	39	40	37
Portugal	g)	8	11	17	:	:	19	:	9	11	11	12	:
United Kingdom	f)	45	43	43	42	41	41	41	42	44	45	46	47
USA		89	89	90	89	84	81	83	:	:	:	:	:
Japan	b)	16	16	12	:	:	11	:	:	:	:	:	:

QUELLE: Eurostat, OECD

SOURCE: Eurostat, OECD

SOURCE: Eurostat, OCDE

7.2
STICKSTOFFOXID-EMISSIONEN
EMISSIONS OF NITROGEN OXIDES
EMISSIONS D'OXYDE D'AZOTE

7.2.3
Bewegliche Emittenten
Mobile sources
Sources mobiles

(1000 t NO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	120	:	120	120	:	:	:	:	:	:
Danmark		59	73	76	74	76	77	80	85	90	91	89	:
BR Deutschland		1 059	1 308	1 604	1 570	1 593	1 626	1 687	1 730	1 818	1 830	1 849	1 837
Ellas	h)	:	:	137	:	:	:	:	:	:	:	:	:
Espana	h)	:	357	501	:	:	513	:	440	:	:	:	:
France	c)	537	857	1 033	1 046	1 061	1 079	1 100	1 093	1 146	1 188	1 260	1 342
Ireland		:	16	20	21	20	19	18	19	:	54	:	:
Italia	a)	734	734	753	:	:	:	779	793	810	843	890	:
Luxembourg		:	:	12	:	:	13	:	14	:	:	:	:
Nederland		211	258	340	336	333	333	340	335	345	350	365	346
Portugal	g)	55	78	106	:	:	120	:	57	63	71	77	:
United Kingdom	f)	943	997	1 056	1 034	1 050	1 079	1 141	1 160	1 199	1 289	1 378	1 460
USA		7 700	9 000	9 300	9 400	9 000	8 500	8 600	8 800	8 500	8 400	8 100	:
Japan	b)	:	805	601	:	:	646	:	:	514	:	:	:

7.2.4
Ortsfeste Emittenten
Stationary sources
Sources fixes

(1000 t NO2)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	197	:	177	151	:	:	:	:	:	:
Danmark		:	105	165	133	148	141	145	174	177	171	160	:
BR Deutschland		1 322	1 263	1 376	1 327	1 271	1 277	1 278	1 229	1 190	1 097	1 010	870
Ellas	h)	:	:	80	:	:	:	:	:	:	:	:	:
Espana	h)	:	268	450	:	:	424	:	386	:	:	:	:
France	c)	785	751	801	657	635	578	545	486	438	417	396	424
Ireland		:	44	47	43	44	44	43	49	:	61	:	:
Italia	a,e)	677	773	832	:	:	:	750	762	760	807	815	:
Luxembourg		:	:	11	:	:	9	:	8	:	:	:	:
Nederland	d)	244	206	218	216	211	207	214	212	220	228	220	204
Portugal	g)	17	26	60	:	:	72	:	39	48	45	45	:
United Kingdom		1 567	1 430	1 386	1 325	1 272	1 251	1 152	1 242	1 276	1 289	1 264	1 230
USA		10 600	10 200	11 100	11 000	10 600	10 500	11 100	11 000	10 800	11 100	11 700	:
Japan	b)	:	977	799	:	:	721	:	700	662	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

CITEPA-CORINAIR - 1985 - NOX EMISSIONS (Unit : Mg/year = t/year)

	Die vorliegenden Zahlen mögen kleineren Änderungen unterliegen, wenn neue und bessere Informationen verfügbar sind	The values presented in these tables may suffer some slide modifications when new and better informations will be available	Les valeurs presentées dans ces tableaux peuvent subir des modifications par la suite si de nouvelles et meilleurs informations sont disponibles
(a) 0	keine Emissionen, da Verfahren nicht vorhanden	no emission due to a not existing activity	aucune émission due à une activité inexistante
(na) 0	keine Emissionen, da Verfahren vernachlässigbar	no emission due to a negligible activity	aucune émission due à une activité négligeable
(ua)	für das Verfahren sind keine Zahlen verfügbar	unavailable data for the activity	donnée indispinible pour l'activité
(ag xxxx)	das Verfahren wird aufgeführt unter xxxx	activity aggregated in activity xxxx	activité agrégée à l'activité xxxx
(f) 0	keine Emission, da der Emissionsfaktor gleich Null ist	no emission due to an emission factor equal to zero	aucune émission due à un facteur d'émission nul
(nf) 0	keine Emission, da der Emissionsfaktor zu vernachlässigen ist	no emission due to a negligible emission factor	aucune émission due à un facteur d'émission négligeable
(uf)	unbekannter Emissionsfaktor	unknown emission factor	facteur d'émission inconnu
-	vom Land nicht definiertes Verfahren, andere wichtig ...	activity not defined by the country in item , other relevant...	activité non définie par le pays concerné
(1) :	1030 von UK hier berücksichtigt	1030 of UK included here	1030 de UK inclus ici
(2) :	D und UK berücksichtigen Verfahren in 1040	D and UK act. included in 1040	D et UK inclus dans 1040
(3) :	UK berücksichtigt Verfahren in 1010	UK act. included in 1010	UK inclus dans 1010
(4) :	1020 der UK hier berücksichtigt	1020 of UK included here	1020 de UK inclus ici
(5) :	B berücksicht Verfahren in 3020	B act. included in 3020	B inclus dans 3020
(6) :	3010 von B hier berücksichtigt; NL berücksichtigt Verf. in 4030	3010 of B included here ; NL act. included in 4030	3010 de B inclus ici ; NL inclus dans 4030
(7) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(8) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(9) :	UK berücksichtigt Verf. in 3060; Verf. 4160 von DK hier berücksichtigt	UK act. included in 3060 ; 4160 of DK included here	UK inclus dans 3060 ; 4160 de DK inclus ici
(10) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(11) :	B berücksichtigt Verf. in 4020; UK (ua)	B act. included in 4020; UK (ua)	B inclus dans 4020; UK (ua)
(12) :	4010 von B hier berücksichtigt; UK (ua)	4010 of B included here; UK (ua)	4010 de B inclus ici; UK (ua)
(13) :	UK (ua)	UK (ua)	UK (ua)
(14) :	L (ua), UK (uf)	L (ua), UK (uf)	L (ua); UK (uf)
(15) :	UK (uf)	UK (uf)	UK (uf)
(16) :	UK (ua)	UK (ua)	UK (ua)
(17) :	UK (uf)	UK (uf)	UK (uf)
(18) :	DK berücksichtigt Verf. in 3050	DK act. included in 3050	DK inclus dans 3050
(19) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(20) :	6020 von D hier berücksichtigt	6020 of D included here	6020 de D inclus ici
(21) :	D berücksichtigt Verfahren in 6010	D act. included in 6010	D inclus dans 6010

CITEPA-CORINAIR - 1985 - NOX EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
1010	Elektrizitätserzeugung Production of electricity Production d'électricité	1	43 546	16 414	629 142	145 987	254 672	148 446	29 267	378 088	941	83 787	13 894	733 629	2 477 813
1020	Wärmeerzeugung (Fernwärme) Production of heat (district heating) Production de chaleur (chauff. urbain)	2	1 284	9 380	(ag 1040)	(a) 0	(a) 0	15 810	44	19	(a) 0	520	(a) 0	(ag 1040)	27 057
1030	Verbundprod. von Wärme & Elekt. (Fernwärme) Combined prod. of electr. & heat (district heating) Prod. combinée élect. & chaleur (chauff. urbain)	3	2 339	115 413	56 480	(a) 0	(a) 0	(a) 0	(a) 0	1 594	(a) 0	(na) 0	(a) 0	(ag 1010)	175 826
1040	Gewerbe & Haushalte (nur Wärmeerz.) Commerc., institution & resid. (heat gener. only) Commercial, institution & résidentiel	4	17 335	7 435	147 995	1 850	10 995	93 664	6 433	62 259	1 264	50 457	74	121 454	521 215
2010	ÖLRAFFINERIE OIL REFINERY RAFFINERIE DE PETROLE		6 177	1 620	27 528	3 721	12 984	18 051	414	27 065	(a) 0	19 961	2 227	40 920	160 688
	GES. INDUSTR.VERBRENNUNG (o. Ölindustrie) TOTAL COMBUST. IN INDUSTRY (ex. oil industry) TOTAL COMBUST. INDUSTR. (ex. ind. pétrol.)		37 109	12 738	227 323	8 429	39 507	124 162	8 184	115 765	682	28 258	10 917	299 874	912 948
3010	Bergwerk Colliery Houillères	5	(ag 3020)	(a) 0	5 055	(a) 0	(a) 0	8 944	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	1 836	15 835
3020	Eisen & Stahlindustrie Primary iron & steel industry Industrie sidérurgique	6	18 538	(a) 0	26 108	567	5 204	32 001	(a) 0	26 818	59	(ag 4030)	151	47 410	156 856
3030	Nicht Metallindustrie Non-ferrous metals industry Industrie des métaux non ferreux	7	1 240	41	5 741	925	434	1 077	313	6 255	(a) 0	19	(a) 0	(ag 3060)	16 045
3040	Chemieindustrie Chemical industry Industrie chimique	8	10 204	1 608	66 336	133	9 184	30 111	1 602	39 554	623	22 533	1 558	(ag 3060)	183 446
3050	Papierbrauerzeugung Paper pulp production Production de pâte à papier	9	694	108	17 264	372	6 495	14 187	(a) 0	7 832	(a) 0	2 357	5 134	(ag 3060)	54 443
3060	Andere bedeutende Industsben (gesamt) Other relevant industries (total) Autres industries importantes (total)	10	6 433	10 981	106 819	6 432	18 190	37 842	6 269	35 306	-	3 349	4 074	250 628	486 323
	Nahrungs & Getränkeindustrie Food & drink industry Industrie agro-alimentaire		1 688	-	-	1 309	-	-	3 206	-	-	-	-	-	
	Zuckerraffinerie Sugar refining Raffinage de sucre		1 025	-	-	-	-	-	-	-	-	-	-	-	
	Nahrungs,Milch & Zuckerindustrie Food,milk and sugar industries Industries alimentaires + indust. lait & sucre		-	-	-	-	-	17 242	-	-	-	-	-	-	
	Holz & Korkindustrie Wood & cork industries Industries du bois et du liège		-	-	-	-	-	-	-	-	-	-	22	-	
	Textilindustrie Textile industry Industrie textile		-	-	-	783	-	-	-	-	-	-	-	-	
	Plastik,Papier,Holz,Druck,Textil...industrie Plastic,paper,wood,printing,textile... industries Plastique, papier, bois, imprimerie, textile		1 196	-	-	-	-	-	-	-	-	-	-	-	
	Gummi, Plastik, Textil...industrie Rubber,plastic,textile... industries Caoutchouc, plastique, textile		-	-	-	-	-	8 515	-	-	-	-	-	-	
	Brauerei, Gummi, Salz, Glas , Malz...industrie Brewery,Rubber,salt min.,glas ref,malt Brasserie, caoutch., mines de sel, ind. verre, malt		-	-	6 138	-	-	-	-	-	-	-	-	-	
	Herstellung & Reparatur von Fahrzeugen Manuf. and rep. of autom., a. o. vehicles Const. et rép. automobile et autres véhicules		-	-	9 206	-	-	-	-	-	-	-	-	-	
	Maschinen, Elektrizitäts, Schiffs, Autoindustrie Mechanics,electricity,ships,vehicles industries Mécanique, électricité, ind. navale et automobile		-	-	-	-	-	8 732	-	-	-	-	-	-	
	Metallerzeugende Industrie Metal production industry Produits métalliques		1 477	-	-	-	-	-	-	-	-	-	-	-	
	Baustoff, Glasindustrie Building products,lime,cement,glass industries Matériaux de constr.,ind chaux,ciment,,verre		-	-	-	-	-	3 353	-	-	-	-	-	-	
	Mineral(dünger)industrie Minerals production industry Production de minéraux		102	-	-	1 267	-	-	-	-	-	-	-	-	
	Nicht-metallische Mineralindustrie Non metallic Minerals production industry Production de minéraux non métalliques		-	-	-	-	-	-	1 324	-	-	-	-	-	
	Müllverbrennung Waste incinerators Incinération de déchets		945	-	-	-	-	-	-	-	-	-	-	-	
	Landwirtschaft Agriculture Agriculture		-	-	-	-	-	-	-	-	-	-	-	12 796	

CITEPA-CORINAIR - 1985 - NOX EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Brennstoffumwandlung Fuel conversion Transformation de combustibles		-	-	-	-	-	-	-	-	-	-	-	10 445	
	Eisenbahn (Personentransport) Railways (transport) Chemin de fer (transport)		-	-	-	-	-	-	-	-	-	-	-	36 579	
	Naturgaskompression Natural gas compressors Compresseurs de gaz naturel		-	-	1 694	-	-	-	-	-	-	-	-	-	
	Nicht näher spez. Industrie Other industries not precisely specified Autres industries non précisement spécifiées		-	10 981	89 781	3 073	18 190	-	1 739	35 306	-	3 349	4 052	190 808	
	GES. PRODUKTIONSVERFAHREN TOTAL PRODUCTION PROCESSES TOTAL COMBUST. DES PROCEDES IND.		26 919	4 759	141 890	28 170	67 543	109 660	5 304	125 748	8 361	17 214	12 265	12 510	560 343
4010	Zechenkokserzeugung Colliery coke production Production de coke par cokeries minières	11	(ag 4020)	(a) 0	(f) 0	(a) 0	(a) 0	(f) 0	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	(ua)	0
4020	Metallurgische Koksproduktion Metallurgical coke production Production de coke par cokeries sidérurgiques	12	938	(a) 0	(f) 0	(a) 0	(f) 0	8	(a) 0	(f) 0	(a) 0	17	244	(ua)	1 207
4030	Sinterfabrik Sinter plant Chaines d'agglomération	13	82	(a) 0	44 368	1 469	6 504	31 817	(a) 0	12 058	6 189	(f) 0	672	(ua)	103 159
4040	Eisengießerei Ferrous metal foundries Fonderies de métaux ferreux	14	207	338	898	(f) 0	24	(f) 0	(na) 0	(f) 0	(ua)	1	(f) 0	(uf)	1 468
4050	Schwefelsäureerzeugung Sulfuric acid production Production d'acide sulfurique		456	(f) 0	(f) 0	(f) 0	(f) 0	106	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	562
4060	Salpetersäureerzeugung Nitric acid production Production d'acide nitrique		9 879	730	19 761	3 503	10 315	19 299	1 160	4 030	(a) 0	13 988	889	12 510	96 064
4070	Äthylen und Propylenerzeugung Ethylene and propylene production Production d'éthylène et de propylène		(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	824	(f) 0	(f) 0	824
4080	1,2 Dichloräthan-Produktion (ausg. 4220) 1,2 dichloroethane production (except 4220) Production de 1,2 dichloroéthane (excepté 4220)	15	(ag 4220)	(a) 0	(f) 0	(a) 0	(ag 4090)	(f) 0	(a) 0	(f) 0	(a) 0	(a) 0	(a) 0	(ua)	0
4090	Vinylchloridproduktion (ausg. 4220) Vinylchloride production (except 4220) Production de chlorure de vinyl (excepté le 4220)	16	(ag 4220)	(a) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(a) 0	(f) 0	(ua)	0
4100	Polyäthylenproduktion (Niederdruckverf.) Polyethylene Low Density production Production de polyéthylène basse densité	17	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(ua)	0
4110	Polyäthylenproduktion (Hochdruckverf.) Polyethylene High Density production Production de polyéthylène haute densité	18	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(ua)	0
4120	Polyvinylchloridproduktion Polyvinylchloride production Production de chlorure de polyvinyl		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	0
4130	Zement und Kalkproduktion Cement and lime production Production de ciment et de chaux		11 818	2 236	49 839	22 394	40 727	40 003	3 564	86 868	1 260	2 373	7 031	(uf)	268 113
4140	Glasproduktion Glass production Production de verre	19	3 251	142	19 054	635	7 594	16 316	360	17 730	912	(f) 0	1 953	(ua)	67 947
4150	Herstellung keramischer Produkte Production of ceramic materials Production de matériaux en céramique		277	1 313	2 082	(f) 0	2 379	35	(na) 0	4 883	(a) 0	11	1 476	(uf)	12 456
4160	Papierbreiproduktion Paper pulp production Production de pâte à papier	20	(f) 0	(ag 3050)	(f) 0	169	(na) 0	(f) 0	(na) 0	179	(a) 0	(a) 0	(f) 0	(f) 0	348
4170	Fermentation : Brotproduktion Fermentation process : bread production Procédé de fermentation : production de pain		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	0
4180	Fermentation : Weinproduktion Fermentation process : wine production Procédé de fermentation : production de vin		(a) 0	(na) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	0
4190	Andere wichtige Verfahren (gesamt) Other relevant processes (total) Autres procédés importants (total)	21	11	0	5 888	0	0	2 076	220	-	0	-	-	0	8 195
	Bierherstellung Beer making Fabrication de bière		(f) 0	(f) 0	-	(f) 0	-	-	(na) 0	-	(f) 0	-	-	(f) 0	
	Petrochemische Industrie Petrochemical industry Industrie pétrochimique		(f) 0	-	-	-	-	-	-	-	-	-	-	-	
	Titandioxidproduktion Titanium dioxide production Production de dioxide de titane		(f) 0	-	-	-	-	-	-	-	-	-	-	-	
	Hochöfen,Zucker-,Schwermetall-,Titandioxidprod. Blast furnaces,Sugar,heavy metals,Tit. diox. prod. Hauts fourn.,sucre,métaux lourds,diox. de titane		-	-	5 888	-	-	-	-	-	-	-	-	-	

CITEPA-CORINAIR - 1985 - NOX EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Clausverfahren Claus unit Unité Claus		11	-	-	-	-	-	-	-	-	-	-	-	
	Nichtmetallurgische Koksproduktion Non metallurgical coke production Production non métallurgique de coke		-	-	-	-	(f) 0	-	-	-	-	-	-	-	
	Eisenmetallurgie : Wiedererhitzung Iron metallurgy : reheating Métallurgie du fer : fours de réchauffement		-	-	-	-	-	2 076	-	-	-	-	-	-	
	Zuckerraffinierung Sugar refining Raffinage du sucre		-	-	-	-	-	-	220	-	-	-	-	-	
	Aluminiumproduktion (Erstschmelze) Primary aluminium production Production d'aluminium première fusion		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Schwefelproduktion : Naturgasschwefelung Sulphur prod. : Natural gas desulphurisation Prod. de soufre : désulfuration du gaz naturel		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Andere chemische Verfahren Other chemical processes Autres procédés chimiques		-	-	-	-	-	-	-	-	-	-	-	(f) 0	
	Andere nicht weiter spez. Verfahren Other not specified processes Autres procédés non spécifiés		-	-	-	-	-	-	-	-	-	-	-	(f) 0	
4220	1,2 Dichloräthan&Vinylchloridproduktion 1,2 Dichloroethane&vinylchloride production prod. de 1,2 dichloréthane&chlorure de vinyl	22	(f) 0	(a) 0	ag4080-90	(a) 0	(ag 4090)	(na) 0	(a) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	0
	GESAMTE LÖSUNGSMITTELVERDUNSTUNG TOTAL SOLVENT EVAPORATION TOTAL EVAPORATION SOLVANTS		0	0	0	0	0	0	0	0	0	0	0	0	0
5010	Farbanwendungen : Automobilherstellung Paint application : manufacture of automobiles Application de peinture : construction d'automobiles														
5020	Farbanwendung : Schiffbau Paint application : ship building Application de peinture : construction navale	23													
5030	Farbanwendung : Metallprodukte Paint application: manufacture of metal articles Appl. de peinture : fabric. art. mét. (ex. 5010/20)	24													
5040	Farbanwendung : Holzprodukte Paint application : wood products industry Appl. de peinture : fabrication d'articles en bois	25													
5050	Farbanwendung : Bauwesen Paint application : construction and buildings Appl. de peinture : constuc. mais &immeubles	26													
5060	Farbanwendung : Autoreparatur Paint application : vehicles refinishing Application de peinture : réparation de véhicules	27													
5070	Farbanwendung : Privatverbrauch Paint application : domestic use Application de peinture : usages domestiques	28													
5080	Gebrauch von Haushaltswaren (ausg. 5070) Use of domestic products (except 5070) Emploi de produits domestiques (excepté 5070)	29													
5090	Metallentfettung Metal degreasing Dégrassage métallique														
5100	Trockenreinigung Dry cleaning Nettoyage à sec														
5110	Druckereien Printing industry Imprimerie														
5120	Fett, Nahrungs- und Industrieölgewinnung Fat, edible and non edible oil extraction Graisse, extraction d'huile comestible ou non	30													
5130	Herstell. & Bearb. chem. Prod.(Elaste&Gummi) Chem. prod. manufact. & proc.(elast.&rubber) M. en oeuvre & élabor.prod.chim (élast.&caout.)	31													
5140	Anwendung von Klebstoffen Application of glues and adhesives Application des colles														
5150	Andere wichtige Lösungsmittelverd. (gesamt) Other relevant solvent evaporation (total) Autres évaporations importantes de solvants (total)	32													
	Farbanwendung / -industrie Paint application / industry Application de peinture / industrie														
	Farb- und Lackanwendungen Paint and varnish applications Application de peinture et de vernis														
	Sprühdosen Spray cans Vaporisateurs divers														

NO NOX EMISSION IN GROUPE 5

CITEPA-CORINAIR - 1985 - NOX EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Andere Lösungsmittelverd. (Holz,Kleidung,Leder) Other relevant solvent evap. (wood,textile,leather) Autres évaporations de solvants (bois,textile,cuir)														
	Andere nicht spez. Lösungsmitterverd. Other not specified solvent evaporation Autres évaporat. de solvants non spécifiées														
	GESAMTER STRASSENTRANSPORT TOTAL ROAD TRANSPORTATION TOTAL TRANSPORT ROUTIER		182 395	102 830	1 484 817	120 050	453 531	1 095 037	35 451	863 366	10 477	271 036	56 948	916 166	5 592 104
6010	Benzinmotoren : Personen & Leichtkraftwagen Gasol. engines : automob. & light duty vehicles Mot. à essence : auto. & véhicules utilitaires légers	33	102 750	46 498	960 505	39 263	172 344	574 751	25 757	261 844	4 601	135 314	25 090	489 030	2 837 747
6020	Benzinmot. : Schwerlastwagen&Autobusse>3.5 t Gasol. eng. : heavy duty vehic.&autobuses>3.5 t Mot. à essence : véhic.util.lourds&autobus>3,5 t	34	4 171	267	(ag 6010)	(a) 0	(ua+na)0	6 900	(a) 0	7 965	175	(na) 0	(a) 0	(a) 0	19 478
6030	Benzinmotoren : Motorräder < 50 cm3 Gasoline engines : motor cycles < 50 cm3 Moteurs à essence : motocycles < 50 cm3		22	36	258	75	196	850	(na+ua)0	969	(f) 0	(f) 0	61	83	2 550
6040	Benzinmotoren : Motorräder > 50 cm3 Gasoline engines : motor cycles > 50 cm3 Moteurs à essence : motocycles > 50 cm3		576	75	693	254	549	2 099	50	2 879	2	(f) 0	8	844	8 029
6050	Dieselmotoren : Personen & Leichtkraftwagen Diesel engines : automobiles & light duty vehicles Moteurs diesel : auto. & véhicules utilitaires légers		11 451	4 392	45 000	1 050	18 526	37 741	1 460	52 890	222	17 263	12 124	15 641	217 760
6060	Dieselmot. : Schwerlastwagen&Autobusse>3,5 t Diesel eng. : heavy duty vehicles&autobuses>3.5 t Mot. diesel : véhic. util. lourds et autobus>3,5 t		60 973	50 039	478 361	78 788	260 601	470 920	8 056	508 521	5 433	98 204	19 665	410 568	2 450 129
6070	Flüssiggasmotoren : Personen & Leichtkraftwagen LPG engines : automobiles & light duty vehicles Moteurs au gaz : auto. & véhicules utilitaires légers		2 391	1 523	(na) 0	620	1 315	1 776	128	28 298	44	20 255	(a) 0	(a) 0	56 350
6080	Lager flüssiger Brennstoffe Depots of liquid fuels Dépôts de combustibles liquides	35	61	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(ag 6090)	(f) 0	(f) 0	61
6090	Tankstellen (auch Auftanken von Wagen) Service stations (including refuelling of cars) Stations-services	36	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	0
6100	Andere wichtiger Straßentransport Other relevant road transportation (total) Autres catégories importantes du transport routier	37	-	-	(f) 0	-	-	-	(f) 0	-	-	-	-	(f) 0	0
	Verdunst. verursacht von Fahrz. mit Ottomot. Evaporation from vehicles with otto engines Evaporation pour les véhicules à moteur Otto		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Verdunstung verursacht durch Benzintanks Evaporation from gasoline tanks Evaporation des réservoirs d'essence		-	-	-	-	-	-	(f) 0	-	-	-	-	(f) 0	
	GESAMTE NATUR TOTAL NATURE TOTAL NATURE		0	0	0	0	0	0	0	0	0	0	0	0	0
7010	Nadelwald Coniferous forests Forêts de conifères														
7020	Laubwald Deciduous forests Forêts de feuillus														
7030	Andere wichtige natürliche Emittenten (gesamt) Other relevant natural activity (total) Autres activités naturelles importantes (total)	38	NO NOX EMISSION IN GROUPE 5												
	Grünland, Getreide und andere Grasslands,crops and Other species Cultures, prairies et autres espèces														
	GESAMTE SONSTIGE AKTIVITÄTEN TOTAL MISCELLAENOUS ACTIVITIES TOTAL ACTIVITES DIVERS		0	0	0	0	0	0	0	0	0	0	0	0	0
8010	Bergbau fester fossiler Brennstoffe Solid fossil fuels mining Mines de combustibles solides fossiles	39													
8020	Landaufschüttung Land filling Dépôts de déchets en décharge	40	NO NOX EMISSION IN GROUPE 5												
8030	Gülleausbringung Sludge spreading Epandage de boues	41													
8040	Gasverteilung Distribution of gas Distribution du gaz	42													
	SUMME ALLER AKTIVITÄTEN TOTAL ALL ACTIVITIES TOTAL TOUTES ACTIVITES		317 104	270 589	2 715 175	308 207	839 232	1 604 830	85 007	1 573 924	21 725	471 233	96 325	2 124 553	10 427 934

7.3
STAUBEMISSIONEN
EMISSIONS OF PARTICLES
EMISSIONS DE PARTICULES

7.3.1
Insgesamt
Total
Total

(1000 t)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	:	:	:	:	:	:	:	:	:	:
Danmark		:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland		1 168	642	517	477	431	409	412	397	382	344	320	286
Ellas		:	:	:	:	:	:	:	:	:	:	:	:
Espana		:	:	:	:	:	:	:	:	:	:	:	:
France		:	558	427	380	365	335	323	304	288	282	284	298
Ireland		:	75	94	97	98	100	112	117	:	107	:	:
Italia	a,b)	330	337	386	:	:	:	384	390	413	427	452	:
Luxembourg		:	:	:	:	:	:	:	3	:	:	:	:
Nederland	c)	183	149	163	156	146	125	110	102	98	98	98	75
Portugal	e)	121	74	119	:	:	93	:	:	:	:	:	:
United Kingdom	d)	1 049	688	570	540	538	520	481	555	585	538	533	512
USA		18 500	10 600	8 500	8 100	7 100	7 100	7 400	7 100	6 800	7 000	6 900	:
Japan		:	:	:	:	:	:	:	:	:	:	:	:

7.3.2
Insgesamt je Einwohner
Total per capita
Total par habitant

(kg je Einwohner / per capita / par habitant)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	:	:	:	:	:	:	:	:	:	:
Danmark		:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland		19	10	8	8	7	7	7	7	6	6	5	5
Ellas		:	:	:	:	:	:	:	:	:	:	:	:
Espana		:	:	:	:	:	:	:	:	:	:	:	:
France		:	11	8	7	7	6	6	6	5	5	5	5
Ireland		:	24	28	28	28	29	32	33	:	30	:	:
Italia	a,b)	6	6	7	:	:	:	7	7	7	7	8	:
Luxembourg		:	:	:	:	:	:	:	8	:	:	:	:
Nederland	c)	14	11	12	11	10	9	8	7	7	7	7	5
Portugal	e)	13	8	12	:	:	9	:	:	:	:	:	:
United Kingdom	d)	19	12	10	10	10	9	9	10	10	9	9	9
USA		90	49	37	35	31	30	31	:	:	:	:	:
Japan		:	:	:	:	:	:	:	:	:	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

7.3
STAUBEMISSIONEN
EMISSIONS OF PARTICLES
EMISSIONS DE PARTICULES

7.3.3
Bewegliche Emittenten
Mobile sources
Sources mobiles

(1000 t)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	:	:	:	:	:	:	:	:	:	:	:	:
Danmark	:	:	3	3	3	3	4	4	4	4	:	:
BR Deutschland	84	61	64	65	66	67	68	70	74	73	71	72
Ellas	:	:	:	:	:	:	:	:	:	:	:	:
Espana	:	:	:	:	:	:	:	226	:	:	:	:
France	:	42	54	56	56	57	59	65	69	73	80	82
Ireland	:	6	8	9	8	8	8	10	:	10	:	:
Italia a)	87	118	170	:	:	:	203	216	231	244	266	:
Luxembourg	:	:	:	:	:	:	:	1	:	:	:	:
Nederland	18	21	30	30	31	31	32	34	36	38	41	21
Portugal e)	4	6	15	:	:	17	:	:	:	:	:	:
United Kingdom	104	114	123	116	121	128	139	145	159	170	188	202
USA	1 200	1 300	1 300	1 300	1 300	1 300	1 300	1 400	1 400	1 400	1 400	:
Japan	:	:	:	:	:	:	:	:	:	:	:	:

7.3.4
Ortsfeste Emittenten
Stationary sources
Sources fixes

(1000 t)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	:	:	:	:	:	:	:	:	:	:	:	:
Danmark	:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland	1 084	581	453	412	365	342	344	327	308	271	249	214
Ellas	:	:	:	:	:	:	:	:	:	:	:	:
Espana	:	:	:	:	:	:	:	265	:	:	:	:
France	:	516	373	324	309	278	264	239	219	209	204	216
Ireland	:	69	86	88	90	92	104	107	:	97	:	:
Italia a,b)	243	219	216	:	:	:	181	174	182	183	186	:
Luxembourg	:	:	:	:	:	:	:	3	:	:	:	:
Nederland c)	165	128	133	126	115	94	78	68	62	60	57	54
Portugal e)	117	68	104	:	:	76	:	:	:	:	:	:
United Kingdom d)	945	574	447	424	417	392	342	410	426	368	345	310
USA	17 300	9 300	7 200	6 800	5 800	5 800	6 100	5 700	5 400	5 600	5 500	:
Japan	:	:	:	:	:	133	:	:	101	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

7.4
KOHLENMONOXIDEMISSIONEN
EMISSIONS OF CARBON MONOXIDE
EMISSIONS DE MONOXYDE DE CARBONE

7.4.1
Insgesamt
Total
Total

(1000 t CO)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	:	:	:	:	:	:	:	:	:	:
Danmark		:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland		14 540	13 987	12 006	10 769	9 975	9 294	9 323	8 894	9 015	8 777	8 671	8 272
Ellas		:	:	:	:	:	:	:	:	:	:	:	:
Espana	e)	:	3 032	3 780	:	:	1 822	:	:	:	:	:	:
France		:	6 522	6 616	6 527	6 388	6 286	6 312	6 295	6 431	6 198	:	:
Ireland		:	388	497	500	493	472	464	462	:	457	:	:
Italia	b)	4 306	4 797	5 487	:	:	:	5 426	5 417	5 571	5 585	5 823	:
Luxembourg		:	:	:	:	:	:	:	240	:	:	:	:
Nederland	c)	1 928	1 918	1 412	1 298	1 250	1 217	1 205	1 163	1 133	1 117	1 126	1 152
Portugal	a,d)	290	461	533	:	:	267	:	:	:	:	:	:
United Kingdom		4 844	4 665	4 829	4 831	4 993	5 015	5 085	5 318	5 535	5 892	6 140	6 522
USA		101 400	84 100	79 600	77 500	72 300	74 500	71 800	69 700	64 000	64 200	65 000	60 900
Japan		:	:	:	:	:	:	:	:	:	:	:	:

7.4.2
Insgesamt je Einwohner
Total per capita
Total par habitant

(kg CO je Einwohner / per capita / par habitant)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België		:	:	:	:	:	:	:	:	:	:	:	:
Danmark		:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland		240	226	195	175	162	151	152	146	148	143	141	133
Ellas		:	:	:	:	:	:	:	:	:	:	:	:
Espana	e)	:	85	101	:	:	48	:	:	:	:	:	:
France		:	124	123	120	117	115	115	114	116	111	:	:
Ireland		:	122	146	145	142	135	131	131	:	129	:	:
Italia	b)	80	87	97	:	:	:	95	95	97	97	101	:
Luxembourg		:	:	:	:	:	:	:	654	:	:	:	:
Nederland	c)	148	140	100	91	87	85	84	80	78	76	76	78
Portugal	a,d)	32	51	55	:	:	27	:	:	:	:	:	:
United Kingdom		87	83	86	86	89	89	90	94	98	103	108	114
USA		495	389	350	337	311	318	303	:	:	:	:	:
Japan		:	:	:	:	:	:	:	:	:	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

7.4
KOHLENMONOXIDEMISSIONEN
EMISSIONS OF CARBON MONOXIDE
EMISSIONS DE MONOXYDE DE CARBONE

7.4.3
Bewegliche Emittenten
Mobile sources
Sources mobiles

(1000 t CO)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	:	:	:	:	:	:	:	:	:	:	:	:
Danmark	:	:	577	558	553	556	573	578	583	593	:	:
BR Deutschland	8 920	10 152	8 813	7 768	7 355	6 900	6 746	6 314	6 599	6 539	6 477	6 100
Ellas	:	:	:	:	:	:	:	:	:	:	:	:
Espana	:	3 010	3 748	:	:	1 486	:	1 675	:	:	:	:
France	:	3 669	4 136	4 225	4 234	4 269	4 301	4 303	4 437	4 380	:	:
Ireland	:	331	420	421	408	384	366	355	:	338	:	:
Italia	3 678	4 315	4 990	:	:	:	4 920	4 942	5 049	5 065	5 292	:
Luxembourg	:	:	:	:	:	:	:	58	:	:	:	:
Nederland	1 490	1 495	1 043	938	919	896	859	806	780	765	768	795
Portugal a)	270	440	511	:	:	249	:	:	:	:	:	:
United Kingdom	3 097	3 508	3 896	3 938	4 109	4 161	4 335	4 431	4 658	5 074	5 355	5 792
USA	74 400	65 000	56 100	55 400	52 900	52 400	50 600	47 900	44 600	43 300	41 200	40 000
Japan	:	:	:	:	:	:	:	:	:	:	:	:

7.4.4
Ortsfeste Emittenten
Stationary sources
Sources fixes

(1000 t CO)

	1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	:	:	:	:	:	:	:	:	:	:	:	:
Danmark	:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland	5 620	3 835	3 193	3 001	2 620	2 394	2 577	2 580	2 416	2 238	2 194	2 172
Ellas	:	:	:	:	:	:	:	:	:	:	:	:
Espana e)	:	22	32	:	:	336	:	:	:	:	:	:
France	:	2 853	2 480	2 302	2 154	2 017	2 011	1 992	1 994	1 818	:	:
Ireland	:	57	77	79	85	88	98	107	:	119	:	:
Italia b)	628	482	497	:	:	:	506	475	522	520	531	:
Luxembourg	:	:	:	:	:	:	:	182	:	:	:	:
Nederland c)	438	423	369	360	331	321	346	357	353	352	358	357
Portugal a,d)	20	21	22	:	:	18	:	:	:	:	:	:
United Kingdom	1 747	1 157	933	893	884	854	750	887	877	818	785	730
USA	27 000	19 100	23 500	22 100	19 400	22 100	21 200	21 800	19 400	20 900	23 800	20 900
Japan	:	:	:	:	:	:	:	:	:	:	:	:

QUELLE: Eurostat, OECD SOURCE: Eurostat, OECD SOURCE: Eurostat, OCDE

7.5
KOHLENWASSERSTOFFEMISSIONEN
EMISSIONS OF HYDROCARBONS
EMISSIONS D'HYDROCARBURES

7.5.1
Insgesamt
Total
Total

(1000 t HC)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	e)	:	:	339	:	:	:	:	:	:	:	:	:
Danmark		:	:	197	:	:	:	:	146	:	:	:	:
BR Deutschland		2 881	2 808	2 754	2 661	2 637	2 632	2 651	2 624	2 661	2 633	2 603	2 536
Ellas	e)	:	:	130	:	:	:	:	:	:	:	:	:
Espana	e)	:	:	843	:	:	843	:	:	:	:	:	:
France	e)	:	:	1 972	:	:	:	:	1 877	:	:	:	:
Ireland		:	48	62	63	63	62	64	64	:	108	:	:
Italia	b,d)	503	583	696	:	:	:	724	737	767	786	827	:
Luxembourg	e)	:	:	:	:	:	:	:	20	:	:	:	:
Nederland	c)	540	555	502	474	463	447	429	416	404	398	396	399
Portugal	g)	:	:	55	:	:	63	:	134	145	149	156	:
United Kingdom	f)	1 750	1 733	1 887	1 893	1 912	1 903	1 907	1 926	1 957	1 984	2 013	2 066
USA		26 200	22 000	22 300	20 900	19 600	20 500	21 500	20 000	19 400	19 600	18 500	:
Japan	a)	:	:	:	:	:	:	:	:	:	:	:	:

7.5.2
Insgesamt je Einwohner
Total per capita
Total par habitant

(kg HC je Einwohner / per capita / par habitant)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	e)	:	:	34	:	:	:	:	:	:	:	:	:
Danmark		:	:	38	:	:	:	:	29	:	:	:	:
BR Deutschland		48	45	45	43	43	43	43	43	44	43	42	41
Ellas	e)	:	:	13	:	:	:	:	:	:	:	:	:
Espana	e)	:	:	23	:	:	22	:	:	:	:	:	:
France	e)	:	:	37	:	:	:	:	34	:	:	:	:
Ireland		:	15	18	18	18	18	18	18	:	30	:	:
Italia	b,d)	9	11	12	:	:	:	13	13	13	14	14	:
Luxembourg	e)	:	:	:	:	:	:	:	54	:	:	:	:
Nederland	c)	41	41	35	33	32	31	30	29	28	27	27	27
Portugal	g)	:	:	6	:	:	6	:	13	14	14	15	:
United Kingdom	f)	31	31	33	34	34	34	34	34	34	35	35	36
USA		128	102	98	91	84	87	91	:	:	:	:	:
Japan	a)	:	:	:	:	:	:	:	:	:	:	:	:

QUELLE: Eurostat, OECD

SOURCE: Eurostat, OECD

SOURCE: Eurostat, OCDE

7.5
KOHLENWASSERSTOFFEMISSIONEN
EMISSIONS OF HYDROCARBONS
EMISSIONS D'HYDROCARBURES

7.5.3
Bewegliche Emittenten
Mobile sources
Sources mobiles

(1000 t HC)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	e)	:	:	138	:	:	:	:	:	:	:	:	:
Danmark		:	:	52	50	51	52	55	57	59	62	:	:
BR Deutschland		1 030	1 210	1 310	1 242	1 258	1 266	1 287	1 269	1 322	1 329	1 334	1 273
Ellas	e)	:	:	62	:	:	:	:	:	:	:	:	:
Espana	e)	:	:	276	:	:	281	:	:	:	:	:	:
France	e)	:	:	1 134	:	:	:	:	:	:	:	:	:
Ireland		:	29	37	38	36	34	32	32	:	65	:	:
Italia	b)	402	493	599	:	:	:	629	644	668	685	725	:
Luxembourg	e)	:	:	:	:	:	:	:	8	:	:	:	:
Nederland		289	289	236	218	217	215	212	203	202	202	207	213
Portugal		:	:	51	:	:	56	:	53	59	58	62	:
United Kingdom	f)	403	447	606	619	639	632	648	646	664	697	729	788
USA		11 100	9 200	7 400	7 200	6 800	6 700	6 800	6 400	6 200	6 000	6 100	:
Japan	a)	:	:	:	:	:	:	:	:	:	:	:	:

7.5.4
Ortsfeste Emittenten
Stationary sources
Sources fixes

(1000 t HC)

		1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Belgique/België	e)	:	:	201	:	:	:	:	:	:	:	:	:
Danmark		:	:	:	:	:	:	:	:	:	:	:	:
BR Deutschland		1 851	1 598	1 444	1 419	1 379	1 366	1 364	1 355	1 339	1 304	1 269	1 263
Ellas	e)	:	:	68	:	:	:	:	:	:	:	:	:
Espana	e)	:	:	567	:	:	562	:	:	:	:	:	:
France	e)	:	:	838	:	:	:	:	:	:	:	:	:
Ireland		:	19	25	25	27	28	32	32	:	43	:	:
Italia	b,d)	101	90	97	:	:	:	95	93	99	101	102	:
Luxembourg	e)	:	:	:	:	:	:	:	12	:	:	:	:
Nederland	c)	251	266	266	256	246	232	217	213	202	196	189	186
Portugal	g)	:	:	4	:	:	6	:	81	86	90	94	:
United Kingdom	f)	1 347	1 286	1 281	1 274	1 273	1 271	1 259	1 280	1 293	1 287	1 284	1 278
USA		15 100	12 800	14 900	13 700	12 800	13 800	14 700	13 600	13 200	13 600	12 400	:
Japan	a)	:	:	:	:	:	:	:	:	:	:	:	:

QUELLE: Eurostat, OECD

SOURCE: Eurostat, OECD

SOURCE: Eurostat, OCDE

CITEPA-CORINAIR - 1985 - VOC EMISSIONS (Unit : Mg/year = t/year)

	Die vorliegenden Zahlen mögen kleineren Änderungen unterliegen, wenn neue und bessere Informationen verfügbar sind	The values presented in these tables may suffer some slide modifications when new and better informations will be available	Les valeurs presentées dans ces tableaux peuvent subir des modifications par la suite si de nouvelles et meilleurs informations sont disponibles
(a) 0	keine Emissionen, da Verfahren nicht vorhanden	no emission due to a not existing activity	aucune émission due à une activité inexistante
(na) 0	keine Emissionen, da Verfahren vernachlässigbar	no emission due to a negligible activity	aucune émission due à une activité négligeable
(ua)	für das Verfahren sind keine Zahlen verfügbar	unavailable data for the activity	donnée indispinible pour l'activité
(ag xxxx)	das Verfahren wird aufgeführt unter xxxx	activity aggregated in activity xxxx	activité agrégée à l'activité xxxx
(f) 0	keine Emission, da der Emissionsfaktor gleich Null ist	no emission due to an emission factor equal to zero	aucune émission due à un facteur d'émission nul
(nf) 0	keine Emission, da der Emissionsfaktor zu vernachlässigen ist	no emission due to a negligible emission factor	aucune émission due à un facteur d'émission négligeable
(uf)	unbekannter Emissionsfaktor	unknown emission factor	facteur d'émission inconnu
-	vom Land nicht definiertes Verfahren, andere wichtig ...	activity not defined by the country in item , other relevant...	activité non définie par le pays concerné
	Weitere Bemerkungen:	Other remarks :	Autres remarques :
	Verfahren 6080 von D : Verdunstung der Raffinerien hier berücksichtigt	Act. 6080 of D : refinery evaporation included here	Act. 6080 de D : évaporation des raffineries incluse ici
	Verfahren 4170 von B : flämische Region nicht berücksichtigt	Act. 4170 of B : not including flamish region	Act. 4170 de B : région flamande non incluse
(1) :	1030 von UK hier berücksichtigt	1030 of UK included here	1030 de UK inclus ici
(2) :	D und UK berücksichtigen Verfahren in 1040	D and UK act. included in 1040	D et UK inclus dans 1040
(3) :	UK berücksichtigt Verfahren in 1010	UK act. included in 1010	UK inclus dans 1010
(4) :	1020 der UK hier berücksichtigt	1020 of UK included here	1020 de UK inclus ici
(5) :	B berücksicht Verfahren in 3020	B act. included in 3020	B inclus dans 3020
(6) :	3010 von B hier berücksichtigt; NL berücksichtigt Verf. in 4030	3010 of B included here; NL act. included in 4030	3010 de B inclus ici; NL inclus dans 4030
(7) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(8) :	UK berücksichtigt Verf. in 3060	UK act. included in 3060	UK inclus dans 3060
(9) :	UK berücksichtigt Verf. in 3060; Verf. 4160 von DK hier berücksichtigt	UK act. included in 3060; 4160 of DK included here	UK inclus dans 3060; 4160 de DK inclus ici
(10) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(11) :	B berücksichtigt Verf. in 4020; UK (ua)	B act. included in 4020; UK (ua)	B inclus dans 4020; UK (ua)
(12) :	4010 von B hier berücksichtigt; UK (ua)	4010 of B included here; UK (ua)	4010 de B inclus ici; UK (ua)
(13) :	UK (ua)	UK (ua)	UK (ua)
(14) :	UK (uf); L (ua)	UK (uf); L (ua)	UK (uf); L (ua)
(15) :	B, E berücksichtigen Verf. in 4220, ebenso 4090; D berücksichtigt hier einen Teil von 4220; UK (ua)	B, E act. included in 4220,4090 resp.; part of 4220 of D included here; UK (ua)	B et E inclus dans 4220 et 4090 resp.; partie de 4220 de D incluse ici; UK (ua)
(16) :	B berücksichtigt Verf. in 4220; D einen Teil von 4220; E berücksichtigt hier 4220 und 4080; UK (ua)	B act. included in 4220; part of 4220 of D; 4220 and 4080 of E included here; UK (ua)	B inclus dans 4220; partie de 4220 dans D; 4220 et 4080 de E inclus ici; UK (ua)
(17) :	UK (ua)	UK (ua)	UK (ua)
(18) :	UK (ua)	UK (ua)	UK (ua)
(19) :	UK (ua)	UK (ua)	UK (ua)
(20) :	DK berücksichtigt Verfahren in 3050	DK act. included in 3050	DK inclus dans 3050
(21) :	Summe verschiedener Verfahren	mixture of different act.	mélange de différentes activités
(22) :	E, D berücksichtigen Verfahren in 4090; ebenso 4080-	E,D act. included in 4090,4080-90 resp.	E et D inclus dans 4090 et 4080-90 resp.
(23) :	NL und UK berücksichtigen Verf. in 5150; B (ua)	NL and UK act. included in 5150; B (ua)	NL et UK inclus dans 5150; B (ua)
(24) :	NL und UK berücksichtigen Verf. in 5150	NL and UK act. included in 5150	NL et UK inclus dans 5150
(25) :	NL, UK berücksichtigen Verf. in 5050-80, ebenso in 5150	NL, UK act. included in 5050-80,5150 resp.	NL et UK inclus dans 5050-80 et 5150 resp.
(26) :	hier berücksichtigt E 5070 und NL einen Teil von 5040; UK berücksichtigt Verf. in 5150	5070 of E and part of 5040 of NL included here; UK act. included in 5150	5070 de E et une partie de 5040 de NL inclus ici; UK inclus dans 5150
(27) :	DK, UK berücksichtigen Verf. in 5070, ebenso in 5150; NL berücksichtigt einen Teil von 5040	DK,UK act. included in 5070,5150 resp.; part of 5040 of NL included here	DK et UK inclus dans 5070 et 5150 resp.; partie de 5040 de NL incluse ici
(28) :	E, UK berücksichtigen Verf. in 5050, ebenso in 5150; DK berücksichtigt 5060 und NL einen Teil von 5040	E,UK act. included in 5050,5150 resp.; 5060 of DK and part of 5040 of NL included here	E et UK inclus dans 5050 et 5150 resp.; 5060 de DK et une partie de 5040 de NL inclus ici
(29) :	NL berücksichtigt hier einen Teil von 5040	part of 5040 of NL included here	partie de 5040 de NL incluse ici
(30) :	B (ua)	B (ua)	B (ua)
(31) :	UK (ua)	UK (ua)	UK (ua)
(32) :	Summe von verschiedenen Verfahren	mixture of different act.	mélange de différentes activités
(33) :	D berücksichtigt hier 6020 und E 6100	6020 of D and 6100 of E included here	6020 de D et 6100 de E inclus ici
(34) :	D berücksichtigt Verfahren in 6010	D act. included in 6010	D inclus dans 6010
(35) :	NL berücksichtigt Verfahren in 6090	NL act. included in 6090	NL inclus dans 6090
(36) :	NL berücksichtigt hier Verfahren 6080	6080 of NL included here	6080 de NL inclus ici
(37) :	nur Zahlen von D, IRL und UK verfügbar	data form D,IRL and UK only	données de D,IRL et UK seulement
(38) :	keine Zahlen von einigen Ländern	no data from some countries	aucunes données d'un pays
(39) :	P (ua)	P (ua)	P (ua)
(40) :	NL (ua)	NL (ua)	NL (ua)
(41) :	E und UK (ua)	E and UK (ua)	E et UK (ua)
(42) :	NL und ELLAS (ua)	NL and ELLAS (ua)	NL et ELLAS (ua)

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
1010	Elektrizitätserzeugung Production of electricity Production d'électricité	1	909	100	7 255	1 318	17 170	12 227	93	14 654	51	(nf) 0	631	13 019	67 427
1020	Wärmeerzeugung (Fernwärme) Production of heat (district heating) Production de chaleur (chauff. urbain)	2	4	3 051	(ag 1040)	(a) 0	(a) 0	1 038	(f) 0	1	(a) 0	9	(a) 0	(ag 1040)	4 103
1030	Verbundprod. von Wärme & Elekt. (Fernwärme) Combined prod. of electr. & heat (district heating) Prod. combinée électr. & chaleur (chauff. urbain)	3	26	711	3 570	(a) 0	(a) 0	(a) 0	(a) 0	57	(a) 0	(na) 0	(a) 0	(ag 1010)	4 364
1040	Gewerbe & Haushalte (nur Wärmeerz.) Commerc., institution & resid. (heat gener. only) Commercial, institution & résidentiel	4	16 843	10 158	89 632	433	18 677	175 840	16 528	31 935	379	6 504	6	76 685	443 620
2010	ÖLRAFFINERIE OIL REFINERY RAFFINERIE DE PETROLE		10 729	3 285	29 446	6 002	22 324	31 016	667	38 405	(a) 0	11 673	3 596	31 104	188 247
	GES. INDUSTR.VERBRENNUNG (o. Ölindustrie) TOTAL COMBUST. IN INDUSTRY (ex. oil industry) TOTAL COMBUST. INDUSTR. (ex. ind. pétrol.)		2 615	1 635	20 862	541	2 226	6 609	568	5 331	33	10 284	658	56 028	107 390
3010	Bergwerk Colliery Houillères	5	(ag 3020)	(a) 0	82	(a) 0	(a) 0	301	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	27	410
3020	Eisen & Stahlindustrie Primary iron & steel industry Industrie sidérurgique	6	1 638	(a) 0	792	35	206	1 450	(a) 0	916	3	(ag 4030)	2	7 302	12 344
3030	Nicht-Metallindustrie Non-ferrous metals industry Industrie des métaux non ferreux	7	61	3	828	57	29	60	1	266	(a) 0	(f) 0	(a) 0	(ag 3060)	1 305
3040	Chemiendustrie Chemical industry Industrie chimique	8	534	113	5 804	8	617	1 667	73	2 095	30	10 206	139	(ag 3060)	21 286
3050	Papierbreierzeugung Paper pulp production Production de pâte à papier	9	10	49	1 510	22	361	756	(a) 0	368	(a) 0	43	(f) 0	(ag 3060)	3 119
3060	Andere bedeutende Industrien (gesamt) Other relevant industries (total) Autres industries importantes (total)	10	372	1 470	11 846	419	1 013	2 375	494	1 686	-	35	517	48 699	68 926
	Nahrungs & Getränkeindustrie Food & drink industry Industrie agro-alimentaire		64	-	-	82	-	-	277	-	-	-	-	-	
	Zuckerraffinerie Sugar refining Raffinage de sucre		65	-	-	-	-	-	-	-	-	-	-	-	
	Nahrungs,Milch & Zuckerindustrie Food,milk and sugar industries Industries alimentaires + indust. lait & sucre		-	-	-	-	-	940	-	-	-	-	-	-	
	Holz & Korkindustrie Wood & cork industries Industries du bois et du liège		-	-	-	-	-	-	-	-	-	-	22	-	
	Textilindustrie Textile industry Industrie textile		-	-	-	46	-	-	-	-	-	-	-	-	
	Plastik,Papier,Holz,Druck,Textil...industrie Plastic,paper,wood,printing,textile... industries Plastique, papier, bois, imprimerie, textile		53	-	-	-	-	-	-	-	-	-	-	-	
	Gummi, Plastik, Textil...industrie Rubber,plastic,textile... industries Caoutchouc, plastique, textile		-	-	-	-	-	497	-	-	-	-	-	-	
	Brauerei, Gummi, Salz, Glas , Malz...industrie Brewery,Rubber,salt min.,glas ref,malt Brasserie, caoutch., mines de sel, ind. verre, malt		-	-	439	-	-	-	-	-	-	-	-	-	
	Herstellung & Reparatur von Fahrzeugen Manuf. and rep. of autom. a. o. vehicles Constr. et rep. automobile et autres véhicules		-	-	567	-	-	-	-	-	-	-	-	-	
	Maschinen, Elektrizitäts, Schiffs, Autoindustrie Mechanics,electricity,ships,vehicles industries Mécanique, électricité, ind. navale et automobile		-	-	-	-	-	750	-	-	-	-	-	-	
	Metallerzeugende Industrie Metal production industry Produits métalliques		90	-	-	-	-	-	-	-	-	-	-	-	
	Baustoff, Glasindustrie Building products,lime,cement,glass industries Materiaux de constr.,ind.chaux,ciment,verre		-	-	-	-	-	188	-	-	-	-	-	-	
	Mineral(dünger)industrie Minerals production industry Production de minerais		6	-	-	79	-	-	-	-	-	-	-	-	
	Nicht-metallische Mineralindustrie Non metalic Minerals production industry Production de minerais non métalliques		-	-	-	-	-	-	167	-	-	-	-	-	
	Müllverbrennung Waste incinerators Incinération de déchets		94	-	-	-	-	-	-	-	-	-	-	-	

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Landwirtschaft Agriculture Agriculture		-	-	-	-	-	-	-	-	-	-	-	35 841	
	Brennstoffumwandlung Fuel conversion Transformation de combustibles		-	-	-	-	-	-	-	-	-	-	-	152	
	Eisenbahn (Personentransport) Railways (transport) Chemin de fer (transport)		-	-	-	-	-	-	-	-	-	-	-	9 511	
	Naturgaskompression Natural gas compressors Compresseurs de gaz naturel		-	-	42	-	-	-	-	-	-	-	-	-	
	Nicht näher spez. Industrie Other industries not precisely specified Autres industries non précisement spécifiées		-	1 470	10 798	212	1 013	-	50	1 686	-	35	495	3 195	
	GES. PRODUKTIONSVERFAHREN TOTAL PRODUCTION PROCESSES TOTAL COMBUST. DES PROCEDES IND.		28 583	1 810	91 041	4 420	20 620	66 074	1 060	44 768	317	10 878	16 736	241 737	528 044
4010	Zechenkokserzeugung Colliery coke production Production de coke par cokeries minières	11	(ag 4020)	(a) 0	5 619	(a) 0	(a) 0	3 276	(a) 0	(a) 0	(a) 0	(a) 0	(a) 0	(ua)	8 895
4020	Metallurgische Koksproduktion Metallurgical coke production Production de coke par cokeries sidérurgiques	12	4 714	(a) 0	15 290	(a) 0	2 955	4 412	(a) 0	6 671	(a) 0	1	171	(ua)	34 214
4030	Sinterfabrik Sinter plant Chaines d'agglomération	13	4 903	(a) 0	4 856	392	2 920	8 485	(a) 0	5 854	248	(nf) 0	179	(ua)	27 837
4040	Eisengießerei Ferrous metal foundries Fonderies de métaux ferreux	14	83	27	1 688	(f) 0	284	782	(na) 0	402	(ua)	691	79	(uf)	4 036
4050	Schwefelsäureerzeugung Sulfuric acid production Production d'acide sulfurique		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	0
4060	Salpetersäureerzeugung Nitric acid production Production d'acide nitrique		(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(a) 0	(f) 0	(f) 0	(f) 0	0
4070	Äthylen und Propylenerzeugung Ethylene and propylene production Production d'éthylène et de propylène		4 200	(a) 0	28 312	57	2 582	17 530	(a) 0	7 427	(a) 0	2 771	421	2 400	65 700
4080	1,2 Dichloräthan-Produktion (ausg. 4220) 1,2 dichloroethane production (except 4220) Production de 1,2 dichloroéthane (excepté 4220)	15	(ag 4220)	(a) 0	4 315	(a) 0	(ag 4090)	3 727	(a) 0	969	(a) 0	(a) 0	(a) 0	(ua)	9 011
4090	Vinylchloridproduktion (ausg. 4220) Vinyl chloride production (except 4220) Production de chlorure de vinyl (excepté le 4220)	16	(ag 4220)	(a) 0	3 365	11	591	2 050	(a) 0	305	(a) 0	(a) 0	25	(ua)	6 347
4100	Polyäthylenproduktion (Niederdruckverf.) Polyethylene Low Density production Production de polyéthylène basse densité	17	1 042	(a) 0	4 784	(a) 0	606	1 237	(a) 0	4 084	(a) 0	3 548	146	(ua)	15 447
4110	Polyäthylenproduktion (Hochdruckverf.) Polyethylene High Density production Production de polyéthylène haute densité	18	1 290	(a) 0	3 840	(a) 0	1 280	1 164	(a) 0	1 530	(a) 0	623	214	(ua)	9 941
4120	Polyvinylchloridproduktion Polyvinylchloride production Production de chlorure de polyvinyl		371	364	701	170	655	2 427	(a) 0	1 890	(a) 0	178	78	2 598	9 432
4130	Zement und Kalkproduktion Cement and lime production Production de ciment et de chaux		13	537	2 456	132	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	(f) 0	3 138
4140	Glasproduktion Glass production Production de verre	19	(f) 0	8	254	(f) 0	(f) 0	408	(f) 0	257	(f) 0	29	(f) 0	(ua)	956
4150	Herstellung keramischer Produkte Production of ceramic materials Production de matériaux en céramique		18	221	145	(f) 0	6	(f) 0	(na) 0	10	(a) 0	(f) 0	817	17 275	18 492
4160	Papierbreiproduktion Paper pulp production Production de pâte à papier	20	1 791	(ag 3050)	(f) 0	18	(na) 0	5 380	(na) 0	(f) 0	(a) 0	(a) 0	12 103	2 525	21 817
4170	Fermentation : Brotproduktion Fermentation process : bread production Procédé de fermentation : production de pain		900	477	12 279	3 392	7 310	12 000	950	8 968	50	3 035	1 998	17 500	68 859
4180	Fermentation : Weinproduktion Fermentation process : wine production Procédé de fermentation : production de vin		(a) 0	(na) 0	270	181	1 267	2 946	(a) 0	4 114	4	(a) 0	505	7 000	16 287
4190	Andere wichtige Verfahren (gesamt) Other relevant processes (total) Autres procédés importants (total)	21	4 758	176	2 867	67	164	250	110	-	15	-	-	190 999	199 406
	Bierherstellung Beer making Fabrication de bière		75	176	-	67	-	-	(na) 0	-	15	-	-	39 300	
	Petrochemische Industrie Petrochemical industry Industrie pétrochimique		4 683	-	-	-	-	-	-	-	-	-	-	-	
	Titandioxidproduktion Titanium dioxide production Production de dioxide de titane		(f) 0	-	-	-	-	-	-	-	-	-	-	-	

CITEPA-CORINAIR - 1985 - VOC EMISSIONS (Unit : Mg/year = t/year)

	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Hochöfen,Zucker-,Schwermetall-,Titandioxidprod. Blast furnaces,Sugar,heavy metals,Tit. diox. prod. Hauts fourn.,sucre,métaux lourds,diox. de titane		-	-	2 867	-	-	-	-	-	-	-	-	-	
	Clausverfahren Claus unit Unité Claus		(f) 0	-	-	-	-	-	-	-	-	-	-	-	
	Nichtmetallurgische Koksproduktion Non metallurgical coke production Production non métallurgique de coke		-	-	-	-	164	-	-	-	-	-	-	-	
	Eisenmetallurgie : Wiedererhitzung Iron metallurgy : reheating Métallurgie du fer : fours de réchauffement		-	-	-	-	-	250	-	-	-	-	-	-	
	Zuckerraffinierung Sugar refining Raffinage du sucre		-	-	-	-	-	-	110	-	-	-	-	-	
	Aluminiumproduktion (Erstschmelze) Primary aluminium production Production d'aluminium première fusion		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Schwefelproduktion : Naturgasschwefelung Sulphur prod. : Natural gas desulphurisation Prod. de soufre : désulfurisation du gaz naturel		-	-	(f) 0	-	-	-	-	-	-	-	-	-	
	Andere chemische Verfahren Other chemical processes Autres procédés chimiques		-	-	-	-	-	-	-	-	-	-	-	93 000	
	Andere nicht weiter spez. Verfahren Other not specified processes Autres procédés non spécifiés		-	-	-	-	-	-	-	-	-	-	-	58 699	
4220	1,2 Dichloräthan&Vinylchloridproduktion 1,2 Dichloroethane&vinylchloride production prod. de 1,2 dichloroéthane&chlorure de vinyl	22	4 500	(a) 0	ag4080-90	(a) 0	(ag 4090)	(na) 0	(a) 0	2 287	(a) 0	2	(a) 0	1 440	8 229
	GESAMTE LÖSUNGSMITTELVERDUNSTUNG TOTAL SOLVENT EVAPORATION TOTAL EVAPORATION SOLVANTS		82 448	58 468	1 119 557	27 925	327 055	437 597	21 182	396 554	2 681	163 747	52 149	668 000	3 357 363
5010	Farbanwendungen : Automobilherstellung Paint application : manufacture of automobiles Application de peinture : construction d'automobiles		7 596	(a) 0	44 982	(a) 0	7 914	46 023	(a) 0	9 740	(a) 0	1 283	648	15 000	133 186
5020	Farbanwendung : Schiffbau Paint applicabon : ship building Application de peinture : construction navale	23	(ua)	1 096	19 000	300	6 300	3 161	(a) 0	2 634	(a) 0	(ag 5150)	784	(ag 5150)	33 275
5030	Farbanwendung : Metallprodukte Paint application: manufacture of metal articles Appl. de peinture : fabric. art. mét. (ex. 5010/20)	24	5 518	10 224	97 500	3 700	20 050	57 561	1 500	69 987	225	(ag 5150)	1 282	(ag 5150)	267 547
5040	Farbanwendung : Holzprodukte Paint application : wood products industry Appl. de peinture : fabrication d'articles en bois	25	462	10 224	29 939	600	29 000	12 000	2 500	44 488	225	ag5050-80	1 628	(ag 5150)	131 066
5050	Farbanwendung : Bauwesen Paint application : construction and buildings Appl. de peinture : construc. mars.&immeubles	26	5 678	6 134	117 026	7 592	118 050	77 109	4 650	30 860	540	31 943	1 646	(ag 5150)	401 228
5060	Farbanwendung : Autoreparatur Paint application : vehicles refinishing Application de peinture : réparation de véhicules	27	2 529	(ag 5070)	19 479	1 201	4 620	8 560	(na+ua)0	11 996	126	10 985	710	(ag 5150)	60 206
5070	Farbanwendung : Privatverbrauch Paint application : domestic use Application de peinture : usages domestiques	28	7 881	8 179	22 962	2 200	(ag 5050)	33 076	3 000	34 321	180	16 044	5 798	(ag 5150)	133 641
5080	Gebrauch von Haushaltswaren (ausg. 5070) Use of domestic products (except 5070) Emploi de produits domestiques (excepté 5070)	29	19 767	10 222	59 763	4 000	77 783	59 765	3 541	62 923	770	15 755	19 396	48 000	381 685
5090	Metallentfettung Metal degreasing Dégraissage métallique		9 922	3 253	213 000	3 024	8 797	82 460	950	38 708	180	33 533	5 122	43 000	441 949
5100	Trockenreinigung Dry cleaning Nettoyage à sec		2 471	1 278	20 764	902	9 723	13 583	708	14 301	96	3 035	433	10 000	77 294
5110	Druckereien Printing industry Imprimerie		6 092	4 803	70 040	1 500	8 651	23 520	2 730	18 721	243	12 286	1 118	37 000	186 704
5120	Fett, Nahrungs- und Industrieölgewinnung Fat, edible and non edible oil extraction Graisse, extraction d'huile comestible ou non	30	(ua)	953	22 399	400	16 414	2 156	(na+ua)0	7 588	(a) 0	3 000	4 240	10 000	67 150
5130	Herstell. & Bearb. chem. Prod.(Elaste&Gummi) Chem. prod. manufact. & proc.(elast.&rubber) M. en oeuvre & élabor.prod.chim.(élast.&caout.)	31	709	824	158 600	1 606	10 030	5 040	403	35 986	(a) 0	4 336	4 614	(ua)	222 148
5140	Anwendung von Klebstoffen Application of glues and adhesives Application des colles		2 471	1 278	49 889	900	9 723	13 583	1 200	14 301	96	5 059	4 730	58 000	161 230
5150	Andere wichtige Lösungsmittelverd. (gesamt) Other relevant solvent evaporation (total) Autres évaporations importantes de solvants (total)	32	11 352	-	174 214	-	-	-	-	-	-	26 488	-	447 000	659 054
	Farbanwendung / -industrie Paint application / industry Application de peinture / industrie		11 352	-	-	-	-	-	-	-	-	-	-	-	
	Farb- und Lackanwendungen Paint and varnish applications Application de peinture et de vernis		-	-	-	-	-	-	-	-	-	-	-	252 000	

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	SCHLÜSSEL UND NAMEN DER AKTIVITÄTEN CODES AND NAMES OF ACTIVITIES CODES ET NOMS DES ACTIVITES		B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
	Sprühdosen Spray cans Vaporisateurs divers		-	-	26 642	-	-	-	-	-	-	-	-	-	
	Andere Lösungsmittelverd. (Holz,Kleidung,Leder) Other relevant solvent evap. (wood,textile,leather) Autres évaporations de solvants (bois,textile,cuir)		-	-	-	-	-	-	-	-	-	14 888	-	-	
	Andere nicht spez. Lösungsmittelverd. Other not specified solvent evaporation Autres évaporat. de solvants non spécifiées		-	-	147 572	-	-	-	-	-	-	11 600	-	195 000	
	GESAMTER STRASSENTRANSPORT TOTAL ROAD TRANSPORTATION TOTAL TRANSPORT ROUTIER		192 528	96 460	1 166 382	114 568	489 239	1 188 894	24 300	989 231	6 246	216 573	53 235	791 296	5 328 952
6010	Benzinmotoren : Personen & Leichtkraftwagen Gasol. engines : automob. & light duty vehicles Mot. à essence : auto. & véhicules utilitaires légers	33	138 940	76 946	622 898	87 255	370 744	883 046	16 516	689 468	3 831	142 719	27 235	351 227	3 410 885
6020	Benzinmot. : Schwerlastwagen&Autobusse>3.5 t Gasol. eng. : heavy duty vehic.&autobuses>3.5 t Mot. à essence : véhic.util.lourds&autobus>3,5 t	34	2 794	269	(ag 6010)	(a) 0	(ua+na)0	7 047	(a) 0	6 460	116	(na) 0	(a) 0	(a) 0	16 686
6030	Benzinmotoren : Motorräder < 50 cm3 Gasoline engines : motor cycles < 50 cm3 Moteurs à essence : motocycles < 50 cm3		2 136	4 338	17 788	9 000	23 544	102 000	(na+ua)0	116 340	16	9 251	4 856	12 408	301 677
6040	Benzinmotoren : Motorräder > 50 cm3 Gasoline engines : motor cycles > 50 cm3 Moteurs à essence : motocycles > 50 cm3		18 641	1 522	31 004	5 346	37 770	27 598	1 336	28 791	116	3 165	680	72 193	228 162
6050	Dieselmotoren : Personen & Leichtkraftwagen Diesel engines : automobiles & light duty vehicles Moteurs diesel : auto. & véhicules utilitaires légers		6 386	1 802	20 236	225	5 902	17 286	776	22 522	90	10 909	5 724	21 576	113 434
6060	Dieselmot. : Schwerlastwagen&Autobusse>3.5 t Diesel eng. : heavy duty vehicles&autobuses>3.5 t Mot. diesel : véhic. util. lourds et autobus>3,5 t		10 366	6 016	98 285	9 543	29 063	65 756	994	62 850	669	26 521	7 469	101 740	419 272
6070	Flüssiggasmotoren : Personen & Leichtkraftwagen LPG engines : automobiles & light duty vehicles Moteurs au gaz : auto. & véhicules utilitaires légers		1 738	1 333	(na) 0	675	1 432	1 522	93	21 136	34	14 035	(a) 0	(a) 0	41 998
6080	Lager flüssiger Brennstoffe Depots of liquid fuels Dépôts de combustibles liquides	35	974	(ua+uf)0	55 174	2 247	3 996	2 239	323	9 057	263	(ag 6090)	386	40 800	115 459
6090	Tankstellen (auch Auftanken von Wagen) Service stations (including refuelling of cars) Stations-services	36	10 553	4 234	80 294	277	16 788	82 400	2 397	32 607	1 051	9 973	6 885	71 400	318 859
6100	Andere wichtiger Straßentransport Other relevant road transportation (total) Autres catégories importantes du transport routier	37	-	-	240 703	-	-	-	1 865	-	-	-	-	119 952	362 520
	Verdunst. verursacht von Fahrz. mit Ottomot. Evaporation from vehicles with otto engines Evaporation pour les véhicules à moteur Otto		-	-	240 703	-	-	-	-	-	-	-	-	-	
	Verdunstung verursacht durch Benzintanks Evaporation from gasoline tanks Evaporation des reservoirs d'essence		(ag 6010)	(ag 6010)	-	(ag 6010)	(ag 6010)	(ag 6010)	1 865	(ag 6010)	(ag 6010)	(ag 6010)	(ag 6010)	119 952	
	GESAMTE NATUR TOTAL NATURE TOTAL NATURE		28 069	7 102	253 768	195 807	876 191	423 875	20 817	221 037	2 586	13 981	65 000	79 998	2 188 231
7010	Nadelwald Coniferous forests Forêts de conifères		21 169	5 662	216 221	114 129	225 616	59 345	14 902	39 191	362	12 401	14 465	56 465	779 928
7020	Laubwald Deciduous forests Forêts de feuillus		5 602	1 440	37 547	81 678	606 872	326 926	(na+nf)0	171 116	1 991	1 580	50 535	23 533	1 308 820
7030	Andere wichtige natürliche Emittenten (gesamt) Other relevant natural activity (total) Autres activités naturelles importantes (total)	38	1 298	-	-	-	43 703	37 604	5 915	10 730	233	-	-	-	99 483
	Grünland, Getreide und andere Grasslands,crops and Other species Cultures, prairies et autres espèces		1 298	(uf)	(ua)	(ua)	43 703	37 604	5 915	10 730	233	(ua)	(ua)	-	
	GESAMTE SONSTIGE AKTIVITÄTEN TOTAL MISCELLANEOUS ACTIVITIES TOTAL ACTIVITES DIVERS		70 748	25 008	3 069 154	262 550	367 707	432 368	24 374	1 203 034	1 752	0	7 106	1 964 497	7 428 318
8010	Bergbau fester fossiler Brennstoffe Solid fossil fuels mining Mines de combustibles solides fossiles	39	338	(a) 0	1 063 961	245 000	253 813	203 556	350	13 247	(a) 0	(a) 0	(ua)	893 917	2 674 182
8020	Landaufschüttung Land filling Dépôts de déchets en décharge	40	6 033	(ua+uf)0	1 758 610	17 550	66 792	67 200	(ua+na)0	424 273	568	(ua)	7 106	674 000	3 022 132
8030	Gülleausbringung Sludge spreading Epandage de boues	41	36	(uf) 0	18 125	(a) 0	(ua)	12 000	(ua+na)0	(ua+na)0	243	(a) 0	(na) 0	(ua)	30 404
8040	Gasverteilung Distribution of gas Distribution du gaz	42	64 341	25 008	228 458	(ua)	47 102	149 632	24 024	765 514	941	(ua)	(na) 0	396 580	1 701 600
	SUMME ALLER AKTIVITÄTEN TOTAL ALL ACTIVITIES TOTAL TOUTES ACTIVITES		433 502	207 788	5 850 667	613 564	2 141 209	2 775 558	109 589	2 945 007	14 045	433 649	199 117	3 922 364	19 646 059

8. WATER

This chapter provides some selected statistical indicators relating to inland waters, including water withdrawal, waste water treatment and water quality.

The tables on *water withdrawal* provide information on the total amount of water taken for human activities, with an indication of source (surface water or ground water) which is important in view of concern over the contamination of ground water resources. It should be noted that the available data on the uses of water in Member States is very incomplete and have not been published here; also, Community-level data on drinking water quality are not yet available.

The statistics on *waste water treatment* serve to show the progress which has been made since 1970 in the installation of waste water treatment plants, although notable differences still exist between countries.

The *water quality* tables provide an indication of trends in pollution levels in a representative selection of rivers and lakes. These data should be interpreted cautiously as they are presented in a highly summarized form, while sampling and analysis procedures vary from country to country. Nonetheless, the increases in dissolved oxygen, the decreases in biological oxygen demand, and the reductions in most pollutants demonstrate that, in general, river pollution levels appear to be declining in most countries. Nevertheless, many rivers with disturbingly high nitrate levels.

The statistics in this chapter are based on data obtained from the Member States via the OECD-Eurostat questionnaire on the state of the environment. Some historical data, as well as the data for Japan and the USA, were made available by OECD.

Community Legislation

Council Directive 75/440/EEC of 16 June 1975 concerning the quality required of surface water intended for the abstraction of drinking water the Member States

Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community

Council Decision 77/795/EEC of 12 December 1977 establishing a common procedure for the exchange of information on the quality of surface fresh water in the Community

Council Directive 79/869/EEC of 9 October 1979 concerning the methods of measurement and frequencies of sampling and analysis surface water intended for the abstraction of drinking water in the Member States

Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances

Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

8.1.1
Total
Total
Insgesamt

		Total water withdrawal Prélèvement total Wasserentnahme insgesamt									(Mio m³)
		1970		1975		1980		1985		1989	
EUR12	a)	172900		198800		235000		241100		249900	
Belgique/België		9481		:		9030		:			
Danmark		720		1205	*(1977)*					1170	*(1988)*
BR Deutschland	b)	29488		33544		42206	*(1979)*	41216	*(1983)*	44582	*(1987)*
Ellas	c)	4254		5847		6945		:		:	
España	d)	24600		36080		39920		45250		45845	*(1986)*
France	e)	23500		27000		37600	*(1981)*	43127		43673	*(1988)*
Ireland	a)	:		:		793	*(1979)*	:		:	
Italia	f)	41900		:		56200		52000		56200	
Luxembourg	g)	:		:		:		67		59	
Nederland	g)	13270	*(1972)*	13734	*(1976)*	14794	*(1981)*	14471	*(1986)*	:	
Portugal	h)					1476		1271		1290	
United Kingdom	i)	15583	*(1971)*	13085		15547		13998		14502	
USA		440000		472500		525000		467000		:	
Japan				87600		88200		89200		89290	*(1987)*

NOTES:

a) *Secretariat estimates.*
b) Excluding withdrawal for agriculture except irrigation.
c) Withdrawal for power plant cooling waters excluded.
d) Excluding withdrawal for agriculture except irrigation. Ground water withdrawal excludes industry.
e) 1975 data are estimates based on 4 basins out of 6.
f) Excluding withdrawal for agriculture except irrigation. 1970 and 1980 data for industrial cooling are estimates based on 1973 data.
g) Withdrawal for agriculture and irrigation excluded.
h) 1980 data include only public water supply and electrical power plants cooling. 1985 and late 80s data refer only to electrical power plants cooling.
i) 1970 and 1975 data are for England and Wales only.

NOTES:

a) Estimations du Secrétariat.
b) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation.
c) Les prélèvements pour le refroidissement des centrales électriques sont exclus
d) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation. Les prélèvements d'eau souterraine excluent l'industrie.
e) Les données 1975 ont été estimées à partir de 4 bassins sur 6.
f) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation. Les données 1970 et 1980 pour le *refroidissement* industriel ont été estimées sur la base des chiffres 1973.
g) Les prélèvements pour l'agriculture et l'irrigation sont exclus.
h) Les données 1980 incluent seulement le réseau public et le refroidissement des centrales électriques. Les données 1985 et les données pour la fin des années 80 comprennent
i) Les données 1970 et 1975 sont pour l'Angleterre et le Pays de Galles seulement

SOURCE: OECD/OCDE

8.1.2
Total per capita
Total par habitant
Insgesamt je Einwohner

		Water withdrawal per capita Prélèvement par habitant Wasserentnahme je Einwohner *(m• per capita/m• par habitant/m• je Einwohner)*				
		1970	1975	1980	1985	1989
EUR12	a)					
Belgique/België						
Danmark						
BR Deutschland	b)					
Ellas	c)					
España	d)					
France	e)					
Ireland	a)					
Italia	f)					
Luxembourg	g)					
Nederland	g)					
Portugal	h)					
United Kingdom	i)					
USA						
Japan						

NOTES:

a) Secretariat estimates.
b) Excluding withdrawal for agriculture except irrigation.
c) Withdrawal for power plant cooling waters excluded.
d) Excluding withdrawal for agriculture except irrigation. Ground water withdrawal excludes industry.
e) 1975 data are estimates based on 4 basins out of 6.
f) Excluding withdrawal for agriculture except irrigation. 1970 and 1980 data for industrial cooling are estimates based on 1973 data.
g) Withdrawal for agriculture and irrigation excluded.
h) 1980 data include only public water supply and electrical power plants cooling. 1985 and late 80s data refer only to electrical power plants cooling.
i) 1970 and 1975 data are for England and Wales only.

NOTES:

a) Estimations du Secrétariat.
b) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation.
c) Les prélèvements pour le refroidissement des centrales électriques sont exclus
d) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation. Les prélèvements d'eau souterraine excluent l'industrie.
e) Les données 1975 ont été estimées à partir de 4 bassins sur 6.
f) N'inclut pas les prélèvements pour l'agriculture sauf l'irrigation. Les données 1970 et 1980 pour le refroidissement industriel ont été estimées sur la base des chiffres 1973.
g) Les prélèvements pour l'agriculture et l'irrigation sont exclus.
h) Les données 1980 incluent seulement le réseau public et le refroidissement des centrales électriques. Les données 1985 et les données pour la fin des années 80 comprennent
i) Les données 1970 et 1975 sont pour l'Angleterre et le Pays de Galles seulement

SOURCE: OECD/OCDE

8.1.3
Surface water
Eau de surface
Oberflächenwasser

		Surface water Eau de surface Oberflächenwasser					Latest year available Dernière année dispon. Letztes verfüg. Jahr
						(Mio m³)	(%)
		1970	1975	1980	1985	1989	
Belgique/België		8710	:	8251	:	:	*91%*
Danmark	o,u)	:	:	:	:	:	:
BR Deutschland	c)	21906	25971	35344	34225	38301	*86%*
Ellas	d)	3167	4088	4968	:	:	*72%*
España	k)	21000	31140	34800	39840	41719	*91%*
France	j,o,y)	:	21300	30600	36917	37520	*86%*
Ireland	h,z)	:	:	546	:	:	*69%*
Italia	i)	:	:	:	:	40000	*71%*
Luxembourg	a)	:	:	:	22	32	*54%*
Nederland	a,r)	10930	12163	13726	13331	:	*92%*
Portugal	s)	:	:	:	:	:	:
United Kingdom	m,v)	:	:	13007	11425	11797	*81%*
							:
USA		347000	359200	403000	366000	:	*78%*
Japan	b)	:	73650	75450	76220	76410	*86%*

8.1.4
Ground water
Eau souterraine
Grundwasser

		Ground water Eau souterraine Grundwasser					Latest year available Dernière année dispon. Letztes verfüg. Jahr
						(Mio m³)	(%)
		1970	1975	1980	1985	1989	
Belgique/België		771	:	778	:	:	*9%*
Danmark	o,u)	:	:	:	:	:	:
BR Deutschland	c)	7582	7573	6862	6991	6281	*14%*
Ellas	d)	1087	1759	1977	:	:	*28%*
España	k)	3600	4940	5120	5410	4126	*9%*
France	j,o,y)	:	5700	7000	6255	6153	*14%*
Ireland	h,z)	:	:	247	:	:	*31%*
Italia	i)	:	:	:	:	12000	*21%*
Luxembourg	a)	:	:	:	45	27	*46%*
Nederland	a,r)	1119	1153	1068	1140	:	*8%*
Portugal	s)	:	:	:	:	:	:
United Kingdom	m,v)	:	:	2540	2573	2705	*19%*
USA		93200	110714	122000	101000	:	*22%*
Japan	b)		13950	12750	12980	12880	*14%*

8.2
Anschluß der Bevölkerung an Kläranlagen
Population served by waste water treatment plants
Population desservie par des stations d'épuration des eaux

QUELLE: Eurostat CRONOS, OECD SOURCE: Eurostat CRONOS, OECD SOURCE: Eurostat CRONOS, OECD

8.2.1
Primary treatment only
Traitement primaire seulement
Nur Primärsektor

	Primary only *Primaire seulement* Nur Primärsektor												*(%)*
	1970		1975		1980		1985		1987		1989		
Belgique/België	0%		0%		0%	*(1979)*	:		:		:		
Danmark	32%		29%	*(1977)*	:		18%	*(1986)*	8%		:		
BR Deutschland	21%	*(1969)*	18%		10%	*(1979)*	8%		2%	*(1988)*	:		
Ellas	:		:		0%		1%		:		:		
España	:		7%		9%		13%		:		6%		
France	:		:		:		:		:		:		
Ireland	:		:		0%		:		:		:		
Italia	1%	*(1971)*	:		:		:		:		:		
Luxembourg	23%		:		16%		14%		:		5%		
Nederland	:		8%		7%		7%		7%		8%	*(1988)*	
Portugal a)	1%		2%		3%		4%		:		:		
United Kingdom b)	:		:		6%		6%		6%		:		
USA c,d)	:		23%	*(1976)*	17%		15%	*(1984)*	:		:		
Japan	:		:		:		:		:		:		

NOTES:

a) Secretariat estimates until 1985.

b) England and Wales only. Definitions: Primary treatement: removal of gross solids. Secondary: removal of organic material or bacteria under aerobic conditions. Tertiary: removal of suspended solids following secondary treatment.

c) 1980 and 85 data for the second category include 1% and 2% of non-discharge treatment. 1980 and 1984 data were determined by using different methods than previous data and therefore may not be comparable. Primary: may include some biological treatment. Secondary: preliminary and biological treatments together.

d) Primary treatment may include some biological treatment.

NOTES:

a) Estimations du Secrétariat jusqu'en 1985.

b) Angleterre et Pays de Galles uniquement. Définitions: Traitement primaire: élimination des éléments solides. Secondaire: élimination des matières organiques ou bactériennes sous condition aérobie. Tertiaire: élimination des matières en suspension à la suite du traitement secondaire.

c) Les données 1980 et 1985 de la seconde catégorie incluent 1% et 2% de traitement d'eaux non rejetées. Les données 1980 et 1985 ont été obtenues par des méthodes différentes de celles utilisées pour les données précédentes. Primaire: peut inclure du traitement biologique. Secondaire: traitement préliminaire et biologique.

d) Le traitement primaire peut inclure certains traitements biologique

SOURCE: OECD/OCDE

8.2.2
All treatment
Tous traitements

		Total served Total desservi Insgesamt angeschlossen												(%)
		1970		1975		1980		1985		1987		1989		
Belgique/België		4%		6%		23%	*(1979)*	:		:		:		
Danmark		54%		71%	*(1977)*	:		91%	*(1986)*	98%		:		
BR Deutschland		62%	*(1969)*	75%		82%	*(1979)*	87%	*(1983)*	90%	*(1987)*	:		
Ellas		:		:		1%		:		:		;		
España		:		14%		18%		29%		:		48%		
France		19%		31%		43%		49%	*(1984)*	50%		52%		
Ireland		:		:		11%		:		:		:		
Italia		14%	*(1971)*	22%		30%		:		60%		:		
Luxembourg		28%		:		81%		83%		:		91%		
Nederland		:		45%		72%		85%		89%		92%	*(1988)*	
Portugal	a)	3%		6%		9%		9%		11%		:		
United Kingdom	b)	:		:		82%		83%		84%		:		
USA	c,d)	42%		67%	*(1976)*	70%		74%	*(1984)*	:		:		
Japan	e)	16%		23%		30%		36%	*(1984)*	39%		:		

NOTES:

a) Secretariat estimates until 1985.

b) England and Wales only. Definitions: Primary treatement: removal of gross solids. Secondary: removal of organic material or bacteria under aerobic conditions. Tertiary: removal of suspended solids following secondary treatment.

c) 1980 and 85 data for the second category include 1% and 2% of non-discharge treatment. 1980 and 1984 data were determined by using different methods than previous data and therefore may not be comparable. Primary: may include some biological treatment. Secondary: preliminary and biological treatments together.

d) Primary treatment may include some biological treatment.

e) Data for the second category may include data for primary treatment only.

NOTES:

a) Estimations du Secrétariat jusqu'en 1985.

b) Angleterre et Pays de Galles uniquement. Définitions: Traitement primaire: élimination des éléments solides. Secondaire: élimination des matières organiques ou bactériennes sous condition aérobie. Tertiaire: élimination des matières en suspension à la suite du traitement secondaire.

c) Les données 1980 et 1985 de la seconde catégorie incluent 1% et 2% de traitement d'eaux non rejetées. Les données 1980 et 1985 ont été obtenues par des méthodes différentes de celles utilisées pour les données précédentes. Primaire: peut inclure du traitement biologique. Secondaire: traitement préliminaire et biologique.

d) Le traitement primaire peut inclure certains traitements biologique

e) Les données de la seconde catégorie peuvent inclure des données concernant le traitement primaire uniquement.

8.3
Wasserqualität ausgewählter Flüsse
Walter quality indicators for selected rivers
Indicateurs de qualité des eaux, rivières sélectionnées

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

8.3.1
Dissolved oxygen
Oxygène dissous
Gelöster Sauerstoff

		Dissolved oxygen (DO) Oxygène dissous (OD) Gelöster Sauerstoff (DO)						(mg/l)
		1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont	8.2	10.8	10.6	10.4	11.0	10.4	11.7
	Meuse-Lanaye	7.7	8.9	9.5	8.1	9.4	8.6	8.0
	Escaut-Doel	6.2	1.3	1.9	3.3	3.9	3.9	3.8
Danmark	Gudenaa	:	12.5	9.6	11.0	10.3	9.7	9.9
	Skjernaa	:	:	:	:	:	:	:
	Susaa	:	:	:	:	:	:	:
BR Deutschland	Rhein Kleve-Bimmen	5.6	6.8	9.0	9.3	9.8	10.1	9.6
	Elbe	:	:	9.0	8.1	8.8	7.9	:
	Weser	8.6	9.4	8.6	8.7	9.9	9.3	9.2
	Donau-Jochenstein	10.5	10.3	10.6	10.5	10.7	10.7	10.7
España	Guadalquivir	:	:	3.1	5.7	4.8	4.4	:
	Duero	:	:	7.5	7.3	6.8	7.4	:
	Tajo	:	:	7.2	7.6	7.7	8.6	:
	Ebro	:	:	9.8	9.4	9.4	9.4	:
France	Loire	10.7	11.1	11.8	12.1	11.7	:	:
	Seine	:	3.3	4.9	5.2	5.7	:	:
	Garonne	9.7	9.9	10.1	9.3	9.9	:	:
	Rhone	7.5	7.7	8.7	8.6	9.6	:	:
Italia	Po	8.3	:	7.7	8.6	6.1	:	:
	Tevere	4.6	:	5.3	8.8	:	:	:
Nederland	Meuse-Keizersveer	8.6	9.4	10.0	9.7	10.2	9.8	9.1
	Meuse-Eijsden	9.8	9.5	9.8	8.1	9.7	8.8	8.0
	Scheur Maasluis	:	7.1	8.1	9.3	9.5	9.5	9.2
	Ijssel-Kampen	6.7	6.7	8.1	:	:	:	:
	Rhein-Lobit	:	:	8.0	8.0	9.3	9.3	9.2
Portugal	Tejo b)	:	:	:	7.8	8.2	:	:
	Minho	:	:	9.1	10.1	10.0	10.1	9.7
United Kingdom	Thames/Tamise	:	10.8	9.9	10.0	9.8	10.8	9.9
	Severn	:	10.1	10.4	10.8	10.2	10.5	10.4
	Clyde	:	7.7	9.4	9.1	9.7	9.0	8.6
	Mersey	:	5.1	6.1	6.2	7.4	7.9	7.1
USA	Delaware-Trenton	9.7	11.0	11.7	11.7	12.4	11.2	10.9
	Mississippi-St.Franc.	8.7	8.4	8.4	8.6	8.9	9.1	8.7
Japan	Ishikari	8.9	10.7	10.0	10.0	11.0	11.0	:
	Yodo	8.2	8.9	9.0	8.7	8.0	8.8	:
	Tone	9.9	10.3	10.3	:	:	:	:
	Shinana	9.8	9.8	10.3	:	:	:	:

8.3.2
Biological oxygen demand (BOD)
Demande biologique en oxygène (DBO)
Biologischer Sauerstoffbedarf (BSB)

Biological oxygen demand (BOD)
Demande biologique en oxygène (DBO)
Biologischer Sauerstoffbedarf (BSB)

(mg/l)

			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont	c)	4.4	6.6	4.2	8.0	4.5	4.1	4.4
	Meuse-Lanaye		12.5	4.7	3.9	4.3	3.0	3.2	2.9
	Escaut-Doel	c)	4.0	8.2	5.0	3.0	3.0	2.8	2.3
Danmark	Gudenaa		:	:	3.7	3.4	3.4	2.1	3.5
	Skjernaa		:	:	8.1	5.6	2.5	2.4	:
	Susaa		:	:	1.4	2.6	2.0	2.8	:
BR Deutschland	Rhein Kleve-Bimmen		6.1	7.9	4.0	3.8	2.6	2.9	3.0
	Elbe	z)	:	:	6.2	8.6	5.5	4.9	:
	Weser		3.0	5.2	5.4	4.4	4.0	5.0	4.6
	Donau-Jochenstein		4.8	3.1	3.1	3.2	2.5	2.6	2.5
España	Guadalquivir		:	:	11.8	8.8	8.4	8.3	:
	Duero		:	:	2.4	2.7	3.3	2.9	:
	Tajo		:	:	2.4	3.0	2.4	3.0	:
	Ebro		:	:	3.4	4.6	2.3	2.8	:
France	Loire	c)	6.7	4.4	6.6	7.8	6.4	:	:
	Seine		:	10.2	6.6	3.2	2.8	:	:
	Garonne	c)	2.2	1.5	2.3	2.2	2.6	:	:
	Rhone		2.9	9.2	7.8	5.0	2.4	:	:
Italia	Po		:	7.3	6.1	5.0	6.3	8.3	:
	Tevere		8.3	:	9.5	:	:	:	7.3
Nederland	Meuse-Keizersveer		6.2	4.2	2.3	1.6	1.5	1.3	1.7
	Meuse-Eijsden		4.1	3.7	2.8	2.9	2.5	2.6	2.0
	Scheur Maasluis	s)	:	3.9	2.2	1.5	1.9	1.4	
	Ijssel-Kampen		5.7	6.3	3.9	:	:	:	:
	Rhein-Lobit	s)	6.7	7.0	3.2	2.3	2.0	2.8	3.0
Portugal	Tejo	d)	1.6	:	3.7	1.7	1.5	:	:
	Minho		:	:	2.7	2.9	1.3	1.5	1.6
United Kingdom	Thames/Tamise		:	3.4	2.7	2.4	2.6	2.6	2.4
	Severn		:	2.8	2.6	1.7	2.4	2.3	2.4
	Clyde		:	:	:	3.2	3.4	3.1	3.2
	Mersey		:	7.2	5.1	5.0	4.7	4.7	5.9
USA	Delaware-Trenton		2.1	2.2	2.0	2.1	1.9	2.5	2.0
	Mississippi-St.Franc.		3.0	3.1	1.9	1.2	1.4	1.6	1.4
Japan	Ishikari		1.9	1.4	1.5	1.5	1.1	1.5	:
	Yodo		5.2	3.2	3.7	3.4	3.6	3.3	:
	Tone		1.7	1.5	1.6	:	:	:	:
	Shinana		2.5	1.8	1.5	:	:	:	:

8.3.3
Nitrate
Nitrates
Nitrat

Nitrate
Nitrates
Nitrat

(mg NO3/l)

			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont	c)	7.97	7.81	9.65	13.82	12.49	8.59	1.76
	Meuse-Lanaye		17.27	9.41	11.16	12.36	14.48	13.20	2.63
	Escaut-Doel	c)	13.29	7.36	18.47	17.32	20.68	23.03	5.06
Danmark	Gudenaa	g)	:	6.07	7.53	7.66	5.27	7.66	1.25
	Skjernaa		:	:	11.87	11.38	11.74	14.84	:
	Susaa		:	:	21.92	20.42	18.25	22.05	3.11
BR Deutschland	Rhein Kleve-Bimmen	m)	8.06	13.37	15.90	18.60	16.39	16.39	4.10
	Elbe	m,a,d)	:	:	17.27	13.29	20.81	22.76	:
	Weser	m)	:	19.04	24.00	22.50	22.23	24.00	5.51
	Donau-Jochenstein	m)	0.89	1.33	2.21	2.66	2.21	2.66	0.50
Ellas	Strimonas		:	:	:	4.85	4.90	7.56	:
	Axios		:	:	:	6.75	7.68	7.73	:
	Pinios		:	:	:	6.38	8.21	:	:
	Aheloos		:	:	:	0.34	0.59	0.00	:
España	Guadalquivir	m)	:	:	9.79	14.57	14.88	15.38	:
	Duero	m)	:	:	8.15	4.55	6.40	4.78	:
	Tajo	m)	:	:	1.50	2.11	2.67	2.33	:
	Ebro	m)	:	:	5.45	10.90	8.22	9.52	:
France	Loire	m)	7.01	6.38	8.81	9.81	10.98	:	:
	Seine	m)	:	18.52	23.72	27.32	26.08	:	:
	Garonne		5.10	4.10	8.11	7.51	7.79	:	:
	Rhone		3.90	4.00	5.50	7.11	6.02	:	:
Italia	Po		4.19	5.98	7.22	10.60	11.56	7.30	:
	Adige		:	3.90	4.16	:	7.75	8.00	:
	Tevere	f)	:	6.64	6.07	0.13	:	:	:
Nederland	Meuse-Keizersveer	m)	13.60	16.34	16.70	18.95	18.69	17.09	17.71
	Meuse-Eijsden	m)	10.85	11.12	12.31	12.93	13.73	12.00	13.29
	Scheur-Maasluis	m)	:	14.92	17.01	18.42	18.16	16.12	11.78
	Ijssel-Kampen		12.22	15.32	18.91	:	:	:	:
	Rhein-Lobit	m)	11.87	14.48	17.40	19.97	18.20	16.87	20.37
Portugal	Tejo		:	:	:	4.96	2.97	:	:
	Minho		:	:	:	:	:	:	:
United Kingdom	Thames/Tamise		:	28.79	30.51	33.26	30.34	29.72	33.97
	Severn		:	24.45	25.69	28.03	28.43	25.29	27.81
	Clyde		:	11.78	8.19	9.57	8.10	7.31	9.43
	Mersey		:	8.15	10.14	13.82	12.93	11.91	12.67
									0.00
USA	Delaware-Trenton		:	:	4.25	5.31	5.31	:	:
	Mississippi-St.Franc.		:	:	6.20	5.31	5.76	4.87	:
Japan	Ishikari	c)	1.59	:	:	:	:	:	:
	Yodo		:	:	:	:	:	:	:

8.3.4
Ammonium
Ammonium
Ammonium

			Ammonium Ammonium Ammonium						(mg NH4/l)
			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont		:	0.17	0.13	0.18	0.20	0.19	0.18
	Meuse-Lanaye		:	1.06	0.79	0.90	0.60	0.61	0.77
	Escaut-Doel		:	3.76	2.85	2.82	2.00	1.77	0.75
Danmark	Gudenaa		:	0.32	0.14	0.16	0.19	0.09	0.17
	Skjernaa		:	:	0.18	0.35	0.21	0.19	:
	Susaa		:	:	0.09	0.37	0.12	0.11	0.09
BR Deutschland	Rhein Kleve-Bimmen	h)	1.74	1.48	0.72	0.63	0.43	0.29	0.32
	Elbe	h,p)	:	:	1.82	3.64	1.58	0.49	:
	Weser	h)	0.73	0.70	0.21	0.13	0.28	0.13	0.13
	Donau-Jochenstein	h)	0.15	0.26	0.15	0.21	0.17	0.13	0.15
Ellas	Strimonas		:	:	:	0.13	:	0.04	:
	Axios		:	:	:	0.11	0.21	:	:
	Pinios		:	:	:	0.02	0.08	:	:
	Aheloos		:	:	:	0.38	0.04	:	:
España	Guadalquivir	h)	:	1.87	1.14	1.11	0.90	1.29	:
	Duero	h)	:	:	:	0.27	:	:	:
	Tajo	h)	:	:	0.26	0.10	0.00	0.00	:
	Ebro	h)	:	:	0.38	0.16	:	0.13	:
France	Loire	h)	:	0.27	0.09	0.12	0.13	:	:
	Seine	h)	:	1.57	0.78	1.04	0.97	:	:
	Garonne		:	0.18	0.00	0.27	0.43	:	:
	Rhone		:	0.16	0.15	0.26	0.22	:	:
Italia	Po		0.26	:	0.22	0.32	0.58	0.11	:
	Adige	d)	1.19	1.94	1.70	1.09	0.12	:	:
	Tevere		:	:	:	1.93	:	:	:
Nederland	Meuse-Keizersveer	h)	0.90	1.59	0.78	0.87	0.61	0.40	0.45
	Meuse-Eijsden	h)	0.97	1.13	0.64	0.87	0.50	0.44	0.58
	Scheur-Maasluis	h)	:	1.18	0.81	0.68	0.63	:	:
	Ijssel-Kampen		1.71	1.24	0.78	:	:	:	:
	Rhein-Lobit	h)	1.71	1.43	0.97	0.98	0.69	0.40	0.41
Portugal	Tejo		0.43	:	0.22	:	:	:	:
	Minho		:	:	:	0.09	0.09	0.05	:
United Kingdom	Thames/Tamise		:	0.40	0.34	0.35	0.42	0.31	0.51
	Severn		:	0.25	0.16	0.27	0.27	0.22	:
	Clyde		:	1.03	1.18	1.50	1.48	0.80	1.15
	Mersey		:	7.13	5.49	5.53	5.06	4.45	5.66
									0.00
USA	Delaware-Trenton	h)	0.06	0.15	0.06	0.11	0.17	0.05	0.07
	Mississippi-St.Franc.	h)	0.05	0.06	0.10	0.05	0.04	0.05	0.05
Japan	Ishikari		0.49	:	:	:	:	:	:
	Yodo		0.72	0.69	:	:	:	:	:

8.3.5
Total phosphorus
Phosphore total
Phosphor insgesamt

			Phosphorus Phosphore Phosphor						(mgP/l)
			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont		:	1.23	0.22	0.35	0.20	0.17	0.18
	Meuse-Lanaye		:	1.41	0.55	0.72	0.34	0.60	0.52
	Escaut-Doel		:	1.06	0.55	0.87	0.76	0.64	0.62
Danmark	Gudenaa	f0	:	0.24	0.16	0.16	0.17	0.13	0.12
	Skjernaa		:	:	0.14	0.13	0.12	0.12	:
	Susaa		:	0.49	0.35	0.36	0.41	0.27	0.36
BR Deutschland	Rhein Kleve-Bimmen		0.52	0.75	0.36	0.48	0.23	0.25	0.26
	Elbe	a,d)	:	:	0.36	0.53	0.31	0.41	:
	Weser		0.40	0.67	0.53	0.37	0.27	0.28	0.29
	Donau-Jochenstein		:	:	0.18	0.21	0.16	0.15	0.13
Ellas	Strimonas		:	:	:	0.12	0.12	0.16	:
	Axios		:	:	:	0.61	0.54	0.93	:
	Pinios		:	:	:	0.08	0.73	:	:
	Aheloos		:	:	:	0.00	0.02	:	:
España	Guadalquivir		:	0.55	0.87	0.72	0.80	0.86	:
	Duero		:	:	0.69	0.35	0.92	0.66	:
	Tajo		:	:	0.43	0.14	0.399	0.25	:
	Ebro		:	:	0.33	0.79	0.81	0.51	:
France	Loire	d)	0.08	0.08	0.07	0.04	0.07	:	:
	Seine		:	:	0.76	1.01	0.71	:	:
	Garonne	d)	0.08	0.08	0.09	0.09	0.07	:	:
	Rhone	d)	0.15	0.15	0.18	0.17	0.13	:	:
Italia	Po		:	0.23	0.28	0.26	0.25	0.18	:
	Adige		:	0.19	0.18	:	0.15	0.18	:
	Tevere		:	0.26	0.40	0.24	:	:	0.32
Nederland	Meuse-Keizersveer		0.41	0.57	0.50	0.48	0.39	0.38	0.37
	Meuse-Eijsden		0.43	0.73	0.58	0.57	0.46	0.54	0.51
	Scheur-Maasluis		:	0.56	0.65	0.55	0.38	0.51	0.44
	Ijssel-Kampen		0.43	0.62	0.63	:	:	:	:
	Rhein-Lobit		0.50	0.72	0.66	0.62	0.38	0.34	0.34
Portugal	Tejo		:	:	:	0.19	0.29	:	:
United Kingdom	Thames/Tamise	e)	:	1.07	1.16	1.32	:	:	:
	Severn	e)	:	0.75	0.54	0.71	:	:	:
	Clyde	e)	:	0.69	0.50	0.32	:	:	:
	Mersey	e)	:	:	0.78	1.36	:	:	:
USA	Delaware-Trenton	b)	:	0.08	0.10	0.14	0.10	0.08	0.09
	Mississippi-St.Franc.	b)	:	0.14	0.23	0.10	0.28	0.20	0.21
Japan	Ishikari		:	0.09	0.09	:	:	:	:
	Yodo		:	:	0.22	:	:	:	:

8.3.6
Lead
Plomb
Blei

			Lead Plomb *Blei*						(ug/l)
			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont		:	1.40	4.00	9.12	4.54	5.30	4.10
	Meuse-Lanaye		:	5.70	20.00	6.71	7.70	10.48	7.10
	Escaut-Doel		:	203.50	25.00	6.22	11.52	10.94	5.90
BR Deutschland	Rhein Kleve-Bimmen		:	24.00	7.00	11.00	10.00	6.90	2.80
	Weser	a,l)	:	:	2.00	2.80	2.90	2.30	1.60
	Donau-Jochenstein	an)	:	:	:	2.60	2.10	2.70	3.50
España	Guadalquivir	l)	:	:	12.70	10.00	12.80	8.50	:
	Ebro	l)	:	:	5.00	0.00	0.00	0.00	:
France	Loire		:	0.00	0.00	:	0.00	:	:
	Seine		:	26.00	8.00	40.00	20.00	:	:
	Garonne		:	0.00	0.00	0.00	10.00	:	:
	Rhone		:	30.00	29.00	:	:	:	:
Italia	Po	j)	:	0.40	0.55	:	:	:	:
Nederland	Meuse-Keizersveer		:	12.00	12.00	3.60	8.30	3.3	4.90
	Meuse-Eijsden		:	17.00	23.00	6.20	9.00	7.80	4.90
	Scheur-Maasluis		:	13.00	11.00	1.90	2.50	3.00	3.00
	Ijssel-Kampen		:	17.00	9.00	:	:	:	:
	Rhein -Lobit		:	22.00	15.00	4.20	4.00	3.40	4.90
United Kingdom	*Thames/Tamise*	k)	:	:	10.00	9.00	6.00	3.00	1.50
	Severn	k)	:	29.00	40.00	4.00	5.00	3.00	3.00
	Clyde	k)	:	73.00	18.00	8.00	4.00	5.00	3.00
	Mersey	k)	:	50.00	15.00	11.00	9.00	9.00	11.00
USA	Delaware-Trenton	c,d,e)	0.00	6.00	1.30	2.80	5.00	5.00	4.00
	Mississippi-St.Fran.	c,e)	18.00	1.50	0.42	4.90	5.00	5.20	3.50
Japan	Ishikari		:	1.00	:	:	:	:	:
	Yodo		:	:	:	:	:	:	:

8.3.7
Cadmium
Cadmium
Kadmium

Cadmium
Cadmium
Kadmium

(ug/l)

			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont		:	0.80	0.30	0.22	0.37	0.43	0.21
	Meuse-Lanaye		:	2.60	1.20	0.39	1.59	3.39	1.02
	Escaut-Doel		:	1.50	5.80	1.22	1.09	0.86	0.82
BR Deutschland	Rhein Kleve-Bimmen	c)	:	2.40	1.40	0.30	0.30	0.30	0.30
	Weser	c)	:	:	0.50	0.50	0.50	0.5	0.50
	Donau-Jochenstein	an)	:	:	0.20	0.10	0.20	0.30	0.30
España	Guadalquivir	d)	:	:	0.00	0.60	0.00	0.00	:
	Ebro	d)	:	:	0.00	0.00	0.00	0.00	:
France	Loire		:	0.00	0.00	0.00	0.00	:	:
	Seine		:	0.00	0.00	:	0.00	:	:
	Garonne		:	0.00	:	0.00	0.00	:	:
	Rhone		:	10.00	0.00	0.00	0.00	:	:
Italia	Po		:	:	0.05	0.12	0.04	:	:
Nederland	Meuse-Keizersveer		:	0.90	1.50	0.21	0.59	0.63	0.34
	Meuse-Eijsden		:	3.10	3.40	0.35	1.26	2.23	0.63
	Scheur-Maasluis		:	1.00	0.90	0.26	0.10	0.28	0.16
	Ijssel-Kampen		:	1.40	1.30	:	:	:	:
	Rhein -Lobit		:	2.30	1.60	0.14	0.10	0.10	0.12
United Kingdom	Thames/Tamise	n)	:	:	1.04	0.79	0.51	0.34	0.20
	Severn	n)	:	5.17	10.00	0.21	0.24	0.22	0.16
	Clyde	n)	:	3.80	1.08	0.78	0.50	0.50	0.51
	Mersey	n)	:	20.00	0.79	0.19	0.20	0.26	0.24
USA	Delaware-Trenton	d,e)	:	1.50	3.50	1.00	1.00	1.00	1.00
	Mississippi-St.Fran.	d,f)	18.00	0.36	1.40	1.00	1.20	1.30	1.00
Japan	Ishikari	g)	0.00	:	:	:	:	:	:
	Yodo	g)	0.00	0.00	:	:	:	:	:

8.3.8
Chromium
Chrome
Chrom

Chromium
Chrome
Chrom

(ug/l)

			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Agimont		:	1.20	1.20	0.40	2.60	3.00	1.40
	Meuse-Lanaye		:	4.60	2.70	5.70	9.40	3.30	3.30
	Escaut-Doel		:	15.60	26.10	3.60	17.30	15.90	6.70
BR Deutschland	Rhein Kleve-Bimmen		:	40.00	22.30	10.00	8.90	8.00	4.20
	Weser	t)	:	:	3.00	3.00	2.00	2.00	2.00
España	Guadalquivir	f)	:	:	10.00	:	:	:	:
	Duero	f)	:	:	0.00	0.00	:	0.00	:
	Tajo	k)	:	:	0.00	0.00	:	0.00	:
France	Loire		:	0.00	0.00	:	0.00	:	:
	Seine		:	12.00	13.00	:	0.00	:	:
	Garonne		20.00	0.00	:	0.00	10.00	:	:
	Rhone		:	0.00	9.00	:	:	:	:
Italia	Po	k)	:	:	0.60	:	:	:	:
Nederland	Meuse-Keizersveer		:	7.00	7.00	3.00	7.30	4.20	4.50
	Meuse-Eijsden		:	14.00	10.00	6.40	9.90	7.40	4.40
	Scheur-Maasluis		:	16.00	19.00	5.30	4.50	10.9	4.90
	Ijssel-Kampen		:	25.00	14.00	:	:	:	:
	Rhein-Lobit		:	35.00	20.00	7.60	7.50	8.30	6.50
United Kingdom	Thames/Tamise	l)	:	:	11.00	10.00	10.00	8.00	5.00
	Severn	l)	:	9.00	30.00	11.00	5.00	3.00	1.00
	Clyde		:	64.00	25.00	21.00	29.00	23.00	31.00
	Mersey		:	20.00	20.00	12.00	13.00	9.00	10.00
USA	Delaware-Trenton	b,d,f)	0.00	23.00	10.00	1.30	1.00	1.00	3.00
	Mississippi-St.Franc.	c,d,f)	18.00	0.36	2.50	1.00	1.30	1.00	1.00
Japan	Ishikari	e)	0.00	0.00	:	:	:	:	:
	Yodo		:	0.00	:	:	:	:	

8.3.9
Copper
Cuivre
Kupfer

			Copper Cuivre Kupfer						(ug/l)
			1970	1975	1980	1985	1987	1988	1989
Belgique/België	Meuse-Heer/Aa...mont		:	4.70	7.00	19.00	41.80	7.80	6.90
	Meuse-Lanaye		:	4.50	22.60	7.40	27.50	7.40	6.80
	Escaut-Doel		:	15.50	24.40	10.90	53.30	10.70	9.30
BR Deutschland	Rhein Kleve-Bimmen		:	:	19.90	13.00	8.00	11.00	8.20
	Weser		:	:	5.60	9.20	3.40	6.00	4.30
España	Guadalquivir	d)	:	:	2.70	0.90	0.00	14.50	:
	Duero	d)	:	:	0.80	2.50	0.00	7.50	:
	Tajo	d)	:	:	:	1.40	20.00	5.00	:
France	Loire		:	0.00	:	20.00	10.00	:	:
	Seine		:	52.00	11.00	30.00	20.00	:	:
	Garonne		:	0.00	10.00	0.00	20.00	:	:
	Rhone		:	14.00	28.00	:	20.00	:	:
Italia	Po	g)	:	0.60	0.85	:	:	:	:
Nederland	Meuse-Keizersveer		:	9.00	12.00	3.50	6.20	4.70	4.60
	Meuse-Eijsden		:	16.00	11.00	5.50	6.90	5.20	3.90
	Scheur-Maasluis		:	15.00	12.00	4.90	4.10	6.90	4.60
	Ijssel-Kampen		26.00	16.00	9.00	:	:	:	:
	Rhein-Lobit		:	20.00	14.00	5.90	5.30	5.10	6.00
United Kingdom	Thames/Tamise	h)	:	:	10.00	11.00	10.00	8.00	4.00
	Severn	h)	:	18.00	21.00	12.00	8.00	5.00	6.00
	Clyde		:	63.00	10.00	6.00	4.00	4.00	2.00
	Mersey		:	20.00	19.00	9.00	9.00	9.00	10.00
USA	Delaware-Trenton	b,d)	0.00	2.50	3.50	4.30	3.80	3.30	2.80
	Mississippi-St.Franc.	b,d)	98.00	4.10	4.10	5.70	5.60	5.50	5.50
Japan	Ishikari		35.00	3.00	18.00	:	:	:	:
	Yodo		:	0.00	:	:	:	:	:

8.4
Wasserqualität ausgewählter Seen
Water quality indicators for selected lakes
Indicateurs de qualité des eaux pour des lacs sélectionnés

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

8.4.1
Total phosphorus
Phosphore total
Phosphor insgesamt

Total phosphorus
Phosphore total
Phosphor insgesamt

(mgP/l)

			1970	1975	1980	1985	1987	1988	1989
Danmark	Knud Soe	a)	:	0.060	0.050	0.042	0.025	:	:
BR Deutschland	Bodensee	ab)	0.061	0.099	0.099	0.071	0.088	0.069	:
España	Alcantara		:	0.387	0.428	0.141	0.399	0.000	:
France	Aydat		:	0.053	:	:	:	:	:
	Pavin		:	0.282	:	:	:	:	:
Ireland	Ennel	n)	:	0.089	0.029	0.032	0.024	0.024	0.010
	Derg	e,p)	:	0.025	0.020	:	:	:	:
Italia	Maggiore		:	0.026	0.036	0.019	:	:	:
	Como		:	0.068	0.078	0.052	:	:	:
	Garda		:	0.009	0.020	0.011	:	:	
	Orta		:	:	0.011	0.006	:	:	:
Nederland	Ijssel		:	0.350	0.350	0.290	0.210	0.240	:
Portugal	Ria de Aveiro		:	:	0.015	0.026	:	:	:
United Kingdom	Neagh		:	0.095	0.107	0.114	0.940	0.092	0.106
	Lomond		:	:	0.009	0.009	0.005	0.003	0.002
USA	Cayuga (NY)	c,d)	0.020	0.020	:	:	:	:	:
	W. Twin (Ohio)	e,f)	0.150	0.100	:	:	:	:	:
Japan	Biwa (North)	l)	0.009	0.005	0.009	0.007	0.007	0.009	0.008
	Biwa (South)	l)	0.013	0.015	0.017	0.020	0.016	0.017	:
	Kasumigaura	l)	:	0.040	0.080	0.060	0.090	0.070	0.074

8.4.2
Total nitrogen
Azote totale
Stickstoff insgesamt

			Total nitrogen Azote totale Stickstoff insgesamt						(mgN/l)
			1970	1975	1980	1985	1987	1988	1989
Danmark	Knud Soe	b)	:	2.000	3.000	2.900	3.000	:	:
BR Deutschland	Bodensee	ab)	0.755	0.763	0.856	0.875	1.013	1.566	:
España	Alcantara		:	1.341	2.864	:	:	:	:
France	Aydat		:	0.694	:	:	:	:	:
	Pavin		:	:	:	:	:	:	:
Ireland	Ennel	i,l)	:	0.270	0.470	0.340	0.190	0.200	:
	Derg	i,j,s)	:	0.840	1.200	:	:	:	:
Italia	Maggiore	d,k,)	:	:	0.770	:	:	:	:
	Como		0.640	0.710	0.800	0.800	:	:	:
	Garda		0.310	0.300	0.390	0.350	:	:	:
	Orta		13.000	9.620	9.500	7.110	:	:	:
Nederland	Ijssel		:	4.025	4.385	4.140	4.450	3.950	:
Portugal	Ria de Aveiro		:	:	:	:	:	:	:
United Kingdom	Neagh		:	1.180	1.580	1.920	1.500	1.135	1.303
	Lomond		:	:	0.300	0.290	0.230	0.210	0.160
USA	Cayuga (NY)	d,e,f)	0.370	0.510	:	:	:	:	:
	W. Twin (Ohio)	d,g,h)	1.930	:	:	:	:	:	:
Japan	Biwa (North)	o)	0.200	0.290	0.270	0.260	0.270	0.300	0.290
	Biwa (South)	o)	0.270	0.400	0.330	0.360	0.330	0.380	0.350
	Kasumigaura	o)	:	1.200	1.000	1.200	1.300	1.500	1.200

9. WASTES

This chapter provides some selected statistics on municipal and other wastes. Although the compilation of statistics in this area has been affected both by difficulties of definition and by incomplete or inconsistent data, the tables presented here do provide a useful statistical overview of an area of increasing concern for Community environment policy.

The breakdown of waste by source attempts to show the relative importance, in crude terms, of various categories of waste. Most attention has focused on *municipal* and *industrial* waste; since municipal waste is usually defined as waste collected by municipalities, it is likely that there is in reality considerable overlap between these categories. The production of municipal waste on a *per capita* basis varies markedly between countries, which may reflect differences in social or economic factors as well as differences in definitions. However, the strong upward trend in municipal waste generation is a consistent feature of the statistics for almost all countries.

Data on the *composition* of municipal waste show no clear trends over the period 1975-1985. On *disposal*, most municipal waste is disposed of by landfill, although incineration is predominant in a few countries. Data on trends in disposal are not available.

The statistics on *recycling* provide evidence of a general upward trend. It should be noted that the figures for glass recycling are based on recycling by glass manufacturers and do not take account of the reuse of returnable glass containers.

The statistics in this chapter are based on data obtained from the Member States via the OECD-Eurostat questionnaire on the state of the environment. Some historical data, as well as the data for Japan and the USA, were made available by OECD.

Community Legislation
Council Directive 75/442/EEC of 15 July 1975 on waste
Council Directive 78/319/EEC of 20 March 1978 on toxic and dangerous waste
Council Recommendation 81/972/EEC of 3 December 1981 concerning the re-use of waste paper and use of recycled paper
Council Directive 85/339/EEC of 27 June 1985 on containers of liquids for human consumption

QUELLE: Eurostat CRONOS, OECD SOURCE: Eurostat CRONOS, OECD SOURCE: Eurostat CRONOS, OECD

9.1.1
Amounts of waste generated, mid 1980s
Quantité de déchets produits, milieu des années 80
Abfallaufkommen, Mitte achtziger Jahre

	Year Année Jahr	Municipal Municipaux Gemeinde *(1 000 t)*	Industrial Industriels Industrie *(1 000 t)*	Energy production Production d'énergie Energieerzeugung *(1 000 t)*	Agriculture Agriculture Landwirtschaft *(1 000 t)*
Belgique/België	1988	3 470 t)	267 00 u)	1 059 v)	53 000 j)
Danmark	1985	2 400	2 400	1 532	:
BR Deutschland	1987	19 483	61 424	11 702	:
Ellas	1989	3 147	4 304	7 680	90
España	1988	12 546	5 108	:	45 000
France	1989	17 000	50 000	:	400 000
Ireland	1984	1 100	1 580	130	22 000
Italia	1989	17 300	39 978	:	29 830 j)
Luxembourg	1990	170	1 300	:	:
Nederland	1988	6 900	6 687	1 482 i)	86 000 g,r)
Portugal	1987	2 350 m)	662	260	202
United Kingdom	1989	20 000 l)	50 000	14 000	250 000
USA	1986	208 760	760 000 e)	992 479	150 556
Japan	1988	48 283	312 271 m)	19 828	62 690 m)

	Year Année Jahr	Mining Mines Zechen *(1 000 t)*	Demolition wastes Déchets de démolition Bauschutt *(1 000 t)*	Dredge spoils Résidus de dragage Bodenaushub *(1 000 t)*	Sewage Sludge Boues de stations d'épuration Kläranlagenschlamm *(1 000 t)*
Belgique/België	1988	7 069 j)	680 v)	4 805 v)	687 v)
Danmark	1985	:	1 500	:	1 263
BR Deutschland	1987	9 488	11 826	:	1 750 h)
Ellas	1989	3 900	:	:	:
España	1988	180 000 m)	:	:	10 000 m)
France	1989	100 000 q)	:	:	620
Ireland	1984	1 930	240	:	570
Italia	1989	57 000 j)	34 374	:	3 500
Luxembourg	1990	:	4 000	:	15
Nederland	1988	121 i)	7 700 f)	16 000 r)	252
Portugal	1987	3 900 j)	:	:	:
United Kingdom	1989	230 000	250 000	37 000 f)	30 000 b)
USA	1986	1400 000	31 500	:	10 400
Japan	1988	26 017 m)	57 886 m)	:	2 001 j)

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

9.2.1
Total amounts, mid 1980s
Quantités totaux, milieu des années 80

	Year Année Jahr	Chemical waste Déchets chimiques	Non-chemical waste Déchets non chimiques	Total Total Insgesamt	Hazardous and special waste Déchets dangereux et spéciaux
Belgique/België p)	1989	:	:	26 700	915 q)
Danmark	1988	:	:	2 400 f)	112
BR Deutschland	1987	10 218	51 206	61 424	14 210
Ellas	1989	423	3 881	4 304	423
España	1987	:	:	5 108 j)	1 708
France	1989	:	:	50 000	3 000
Ireland	1984	:	:	1 580	20
Italia	1989	:	:	39 978	3 640
Luxembourg	1990	:	:	1 300	742
Nederland	1988	624	6 063	6 687	1 500
Portugal	1987	530	133	662	165
United Kingdom	1989	:	:	50 000	2 200
USA	1986	105 400	:	760 000 m)	238 327 m,i)
Japan	1985	:	:	312 271	666 j)

9.2.2
Amounts for selected categories, mid 1980s
Quantités dans certaines catégories selectionées, milieu des années 80

(1000t)

	Year Année Jahr	Waste oil Huiles usées	Waste solvent Solvants usées	Waste paint Déchets de peinture	Concentrated acids Déchets d'acide concentrés	Metal finishing waste Déchets de la finition des métaux
Belgique/België						
Danmark						
BR Deutschland	1987	859.46	454.49	225.53	1 266.60	219.53
Ellas						
España						
France	1989	250.00	285.00	90.00	:	:
Ireland	1980	25.00	13.50	:	:	33.00
Italia						
Luxembourg	1990	:	:	:	:	:
Nederland	1986	:	:	:	:	:
Portugal	1987	:	:	:	:	:
United Kingdom						
USA	1986	:	:	:	:	:
Japan	1985	:	:	:	:	:

(1000t)

	Year Année Jahr	Containing: /Déchets contenant: / Silver or Zinc Argent ou zinc	Mercury Mercure	PCB's Diphényles polychlorées	Biocides Biocides	Plastics, rubber, etc. Plastiques, caoutchou Kunststoff, gummistoff
Belgique/België						
Danmark						
BR Deutschland	1987	52.06	:	10.54	:	867.02
Ellas						
España						
France	1989	:	0.45 a,s)	17.00		
Ireland	1980	1.60	:	:	0.01	45.00
Italia						
Luxembourg	1990	0.17	0.13	0.03	0.01	:
Nederland	1986	0.01	:	:	:	0.08 q,r)
Portugal	1987	:	:	0.07	:	:
United Kingdom						
USA	1986	:	8 762.56 d,g)	5 015.06	12.00	161.00 e)
Japan	1985	:	:	:	:	2 894.00

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

9.3.1
Amounts and trends
Quantités et tendances

		Amounts Quantités Mengen				% increase % d'augmentation % Anstieg		
								(%)
		1975	1980	1985	1989	75-80	80-85	85-89
Belgique/België	p)	2 900	3 082	:	3 470	*6.3%*	*:*	*:*
Danmark		:	2 046	2 400	:	*:*	*17.3%*	*:*
BR Deutschland	h)	20 423	21 417	19 387	19 483	*4.9%*	*-9.5%*	*0.5%*
Ellas		:	2 500	3 023	3 147	*:*	*:*	*:*
España	d,e)	8 028	10 100	10 600	12 546	*:*	*:*	*18.4%*
France	l)	12 000	14 000	15 000	17 000	*:*	*7.1%*	*13.3%*
Ireland	c)	555	640	1 100	:	*15.3%*	*71.9%*	*:*
Italia		14 095	14 041	15 000	17 300	*-0.4%*	*6.8%*	*15.3%*
Luxembourg	j)	119	128	131	170	*7.6%*	*2.3%*	*29.8%*
Nederland	o,e)	:	6 925	6 175	6 900	*:*	*:*	*11.7%*
Portugal		:	1 985	2 350	:	*:*	*18.4%*	*:*
United Kingdom	k)	16 000	15 500	17 000	18 000	*-3.1%*	*9.7%*	*5.9%*
USA	g,i)	140 000	160 000	178 000	208 760	*14.3%*	*11.3%*	*17.3%*
Japan	e)	38 074	41 511	41 530	48 283	*9.0%*	*0.0%*	*16.3%*

		Amounts per capita Quantités par personne Mengen je Einwohner				% increase % d'augmentation % Anstieg		
				(kg/capita/habitant/Einwohner)				(%)
		1975	1980	1985	1989	75-80	80-85	85-89
Belgique/België	p)							
Danmark								
BR Deutschland	h)							
Ellas								
España	d,e)							
France	l)							
Ireland	c)							
Italia								
Luxembourg	j)							
Nederland	o,e)							
Portugal								
United Kingdom	k)	324	319	355		*-02%*	*11%*	
USA	g,i)							
Japan	e)							

9.3.2
Composition
Composition
Zusammensetzung

	Paper and cardboard Papier et carton Papier und Pappe				Plastics Matières plastiques Kunststoff				Glass Verre Glas			
				(%)				(%)				(%)
	1975	1980	1985	1989	1975	1980	1985	1989	1975	1980	1985	1989
Belgique/België l,e)	30.0%	35.0%	:	28.3%	5.0%	5.8%	:	7.7%	8.0%	8.2%	:	7.6%
Danmark j)	35.0%	34.0%	38.6%	:	4.0%	7.0%	3.4%	:	8.0%	6.0%	5.4%	:
BR Deutschland n,r)	25.0%	19.9%	17.9%	:	8.0%	6.1%	5.4%	:	15.0%	11.6%	9.2%	:
Ellas	:	19.6%	20.0%	20.0%	:	7.0%	7.0%	7.0%	:	2.7%	3.0%	3.0%
España g)	:	15.0%	15.0%	20.0%	:	6.0%	6.0%	7.0%	:	6.0%	6.0%	6.0%
France l)	35.0%	28.0%	27.5%	27.5%	5.0%	6.0%	4.5%	4.5%	8.0%	11.0%	7.5%	7.5%
Ireland j)	33.0%	35.0%	24.5%	:	4.0%	11.0%	14.0%	:	8.0%	8.0%	7.5%	:
Italia a,q)	20.4%	22.5%	22.3%	:	5.3%	6.8%	7.2%	:	6.4%	6.7%	6.2%	:
Luxembourg l)	25.0%	:	17.2%	:	4.5%	:	6.4%	:	5.0%	:	7.2%	:
Nederland k)	23.0%	21.0%	22.8%	24.2%	5.6%	6.5%	6.8%	7.1%	12.0%	11.9%	7.2%	7.2%
Portugal	:	18.9%	19.0%		:	3.2%	3.0%	:	:	2.9%	3.0%	:
United Kingdom s)	30.0%	29.0%	:	:	4.0%	7.0%	:	:	10.0%	10.0%	:	:
USA b,c)	32.5%	29.7%	34.7%	:	3.0%	5.3%	6.7%	:	10.0%	10.3%	9.0%	:
Japan d,f)	30.9%	27.4%	38.3%	45.5%	8.9%	12.3%	7.7%	8.3%	6.1%	8.0%	1.3%	1.0%

	Metals Métaux Metall				Others Autres Andere			
				(%)				(%)
	1975	1980	1985	1989	1975	1980	1985	1989
Belgique/België l,e)	4.5%	5.1%	:	3.7%	51.5%	45.9%	:	52.5%
Danmark j)	4.0%	5.0%	5.0%		49.0%	47.0%	47.6%	:
BR Deutschland n,r)	5.0%	3.9%	3.2%	:	47.0%	58.5%	64.3%	:
Ellas	:	4.2%	4.0%	4.0%	:	66.5%	66.0%	66.0%
España g)	:	2.5%	2.5%	4.0%	:	70.5%	70.5%	63.0%
France l)	5.0%	5.0%	6.5%	6.5%	:	50.0%	54.0%	54.0%
Ireland j)	4.0%	3.0%	3.0%	:	51.0%	43.0%	51.0%	:
Italia a,q)	3.0%	2.9%	3.1%	:	64.9%	61.4%	61.6%	:
Luxembourg l)	3.5%	:	2.6%	:	62.0%	:	66.6%	:
Nederland k)	3.3%	3.1%	3.4%	3.2%	56.1%	57.5%	59.8%	58.3%
Portugal	:	3.6%	3.5%	:	:	71.4%	71.5%	:
United Kingdom s)	8.0%	8.0%	:	:	48.0%	46.0%	:	:
USA b,c)	9.0%	9.6%	8.8%	:	45.5%	45.1%	40.8%	:
Japan d,f)	3.7%	4.7%	1.4%	1.3%	50.4%	47.3%	51.3%	43.9%

9.3.3
Disposal, mid 1980s
Élimination, milieu des années 80
Hausmüllentsorgung, Mitte der achtziger Jahre

	Year Année Jahr	Mechanical sorting Triage mécanique Mechanische Aussortierung (%)	Composting Compostage Kompost (%)	Incineration (% energy rec.) Incinération (% energie recup.) Verbrennung (% Energie Wiedergewonnene) (%)	Landfill Enfouissement Vergraben (%)	Other Autres Andere (%)
Belgique/België						
Danmark c)	1985	0%	4%	23% :	53%	21%
BR Deutschland	1987	:	2%	30% :	66%	1%
Ellas	1989	:	:	0% k) :	98%	:
España	1988	0%	18%	5% 61%	77%	:
France	1989	:	7%	41% 67%	45%	7% l)
Ireland	1984	0%	0%	0% 0%	100%	0%
Italia m)	1989	3%	6%	20% 21%	38%	33%
Luxembourg	1990	0%	1%	69% 100%	30%	0%
Nederland	1988	3%	5%	37% 72%	55%	0%
Portugal	1989	:	11%	0 :	28%	62%
United Kingdom j)	1989	13%	:	13% g) 50%	70% e,g)	5% g)
USA	1986	:	:	8% o) :	78%	:
Japan	1987	:	0%	73% 27%	37%	3%

NOTES:

a) Percentage incinerated with energy reclamation.
b) Secretariat estimates.
c) Secretariat estimates for amounts by treatment method.
d) Includes composting.
e) Direct landfill.
f) Treatment methods refer to 1985.
g) Includes some industrial and commercial waste disposed by waste disposal authorities.
h) Includes recycling.
i) Includes methanation and holding area.
j) Household waste only.
k) Data refer to 1985.
l) Included in landfill.
m) Treatment methods refer to 1980.
n) Data refer to 1987.
o) Data refer to 1984.

NOTES:

a) Pourcentage incinéré avec récupération d'énergie.
b) Estimations du Secrétariat.
c) Estimations par le Secrétariat des quantités par méthode de traitement.
d) Y compris le compostage.
e) Mise en décharge directe.
f) Les données sur les méthodes de traitement sont de 1985.
g) Y compris des déchets industriels et commerciaux traités par les autorités responsables de l'élimination des déchets.
h) Y compris le recyclage.
i) Comprend la méthanisation et les stations de transit.
j) Ordures ménagères seulement.
k) Les données sont de 1985.
l) Inclus dans les données 'mise en décharge'.
m) Les données sur les méthodes de traitement sont de 1980.
n) Les données sont de 1987.
o) Les données sont de 1984.

SOURCE: OECD/OCDE

QUELLE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

SOURCE: Eurostat CRONOS, OECD

9.4.1
Recovery rates
Taux de récupération
Rückgewinnungsquoten

	Paper and cardboard Papier et carton Papier und Pappe				Glass Verre Glas				
				(%)					(%)
	1975	1980	1985	1989	1975	1980	1985	1987	1989
Belgique/België	8.7%	14.7%	:	:	:	33.0% j)	42.0%	39.0%	:
Danmark	28.4%	25.6%	31.0%	29.7%	:	8.0% j)	53.9%	55.0%	
BR Deutschland	34.2%	33.9%	43.6%	43.0%	7.7%	24.0% j)	35.5%	39.4%	42.3%
Ellas	:	:	:	:	:	:	:	:	
España	:	38.1% a)	44.1%	:	:	:	13.1%	22.0%	:
France	31.7%	37.0% j)	41.3% c)	45.7%	:	20.0% j)	26.0%	26.1%	28.5%
Ireland	22.0%	15.0%	:	:	:	8.0% j)	7.0%	8.0%	:
Italia	:	:	:		:	20.0% j)	25.0%	38.0%	:
Luxembourg	:	:	:	:	:	:	:	:	:
Nederland	42.0%	45.5% h)	50.3% f)	58.4%	:	41.0% j)	53.0% e)	62.0%	55.2%
Portugal	:	38.0% a)	:	:	:	:	10.0%	14.0%	:
United Kingdom	28.0%	29.0%	27.0%	27.0%	:	5.0% j)	12.0%	14.0%	18.0%
USA	15.4%	:	20.0% b)	:	2.9%	:	8.0% b)	:	:
Japan	39.6% k)	48.1% g)	49.6% i)	:	:	35.3%	47.2%	54.4%	:

NOTES:

a) Secretariat estimates.
b) 1985 data refer to 1984.
c) 1985 data refer to 1983.
d) 1980 data refer to 1979.
e) Excludes returnable empties.
f) 1985 data refer to 1983; refillable glass bottles recovered for reuse only.
g) 1980 data refer to 1982.
h) Re-utilisation in the paper industry only.
i) 1985 data refer to 1987.
j) 1980 data refer to 1981.
k) 1975 data refer to 1977.
l) 1989 data refer to 1988.

NOTES:

a) Estimations du Secrétariat.
b) Les données 1985 sont de 1984.
c) Les données 1985 sont de 1983.
d) Les données 1980 sont de 1979.
e) Emballages retournables exclus.
f) Les données 1985 sont de 1983; incluent seulement les bouteilles en verre qui sont récupérées pour être réutilisées.
g) Les données 1980 sont de 1982.
h) Réutilisation dans l'industrie du papier seulement.
i) Les données 1985 sont de 1987.
j) Les données 1980 sont de 1981.
k) Les données 1975 sont de 1977.
l) Les données 1989 sont de 1988.

SOURCE: OECD/OCDE,FEVE

10. SECTORAL INDICATORS: TRANSPORT

This chapter contains a number of indicators showing general trends in the transport sector.

The following sections also contain relevant tables:	
3.2	Final energy consumption
5.1	Lead
7.	Air pollution (mobile sources, CORINAIR)

10.1
Länge des Straßennetzes: Autobahnen
Length of road network: motorways
Longeur du réseau routier: autoroutes

(km)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	27 163	28 930	29 653	30 118	30 808	:	:
EUR10	12 795	19 757	25 108	26 671	27 340	27 768	28 321	:	:
EUR9	12 730	19 681	25 017	26 580	27 249	27 677	28 230	:	:
Belgique/België	501	1 051	1 252	1 488	1 534	1 549	1 568	1 613	1 631
Danmark	198	345	504	539	593	593	599	:	601
BR Deutschland	4 461	6 207	7 538	8 198	8 350	8 437	8 618	8 721	8 822
Ellas	65	76	91	91	91	91	91	91	91
España	:	:	1 923	2 064	2 117	2 154	2 276	2 344	2 286
France	1 542	3 119	5 287	5 497	5 885	6 019	6 206	6 328	6 680
Ireland	0	0	0	8	8	8	8	8	8
Italia	3 913	5 329	5 900	5 941	5 955	5 997	6 091	6 091	:
Luxembourg	7	23	44	58	58	58	64	75	78
Nederland	975	1 525	1 798	1 956	1 915	1 978	1 984	2 045	:
Portugal	:	:	132	195	196	196	211	211	243
United Kingdom	1 133	2 082	2 694	2 895	2 951	3 038	3 092	3 104	3 093

10.2
Bestand an Fahrzeugen: Personenkraftwagen
Stock of vehicles: cars
Matériel de transport: voitures

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	95 279 951	106 193 012	109 968 007	113 844 798	117 666 058	122 353 139	:
EUR10	54 667 220	70 912 566	86 454 471	95 717 832	98 992 588	102 388 310	105 500 225	109 433 251	:
EUR9	54 440 327	70 474 013	85 591 862	94 562 895	97 729 222	101 029 137	104 067 648	107 935 170	:
Belgique/België	2 059 616	2 613 835	3 158 737	3 300 248	3 342 704	3 408 721	3 497 818	3 613 571	3 736 317
Danmark	1 076 875	1 294 900	1 389 547	1 439 993	1 500 946	1 557 880	1 587 419	1 595 834	:
BR Deutschland	13 941 079	17 898 297	23 191 616	25 217 787	25 844 520	26 917 423	27 908 157	28 878 220	29 755 447
Ellas	226 893	438 553	862 609	1 154 937	1 263 366	1 359 173	1 432 577	1 498 081	:
España	:	:	7 556 511	8 874 442	9 273 710	9 643 448	10 218 526	10 787 424	11 467 727
France	12 470 000	15 520 000	19 130 000	20 800 000	21 090 000	21 500 000	21 970 000	22 520 000	23 010 000
Ireland	393 459	515 632	738 114	716 808	715 291	717 185	742 806	755 719	779 778
Italia	10 181 192	15 059 689	17 686 236	20 888 210	22 494 641	23 495 460	24 320 167	25 290 250	:
Luxembourg	84 816	127 860	128 612	145 849	151 640	156 048	162 481	168 476	177 011
Nederland	2 564 000	3 495 000	4 550 000	4 841 000	4 852 480	4 921 420	5 019 800	5 173 100	:
Portugal	:	:	1 268 969	1 600 738	1 701 709	1 813 040	1 947 307	2 132 464	2 343 365
United Kingdom	11 669 290	13 948 800	15 619 000	17 213 000	17 737 000	18 355 000	18 859 000	19 940 000	20 925 000

10.3
Bestand an Fahrzeugen: Lastkraftwagen
Stock of vehicles: goods motor vehicles
Matériel de transport: camions et camionnettes

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	10 068 764	11 434 147	11 867 144	12 371 009	12 889 963	:	:
EUR10	6 297 553	7 398 928	8 382 984	9 497 351	9 824 899	10 150 489	10 485 889	:	:
EUR9	6 192 521	7 204 940	7 982 044	8 934 818	9 233 104	9 532 663	9 848 724	:	:
Belgique/België	186 639	187 821	217 425	231 637	238 696	245 540	257 937	269 101	287 867
Danmark	245 347	224 305	248 787	240 143	254 118	269 577	280 676	287 579	:
BR Deutschland	1 028 116	1 121 339	1 277 167	1 277 940	1 280 809	1 294 774	1 305 287	1 321 824	1 345 348
Ellas	105 032	193 988	400 940	562 533	591 795	617 826	637 165	668 660	:
España	:	:	1 338 258	1 444 884	1 529 311	1 678 546	1 821 743	1 975 817	2 162 421
France	1 504 100	1 976 200	2 514 600	2 867 622	3 001 004	3 086 607	3 204 499	3 321 885	3 441 807
Ireland	48 751	52 361	65 052	84 103	93 369	101 475	111 023	118 764	130 020
Italia	1 260 560	1 547 834	1 600 354	2 072 862	2 192 210	2 307 570	2 388 475	:	:
Luxembourg	8 528	10 540	8 559	9 111	9 138	9 270	9 627	9 951	10 614
Nederland	286 000	301 000	314 100	345 400	348 760	377 850	414 200	450 450	:
Portugal	:	:	347 522	491 912	512 934	541 974	582 331	642 625	710 032
United Kingdom	1 624 480	1 783 540	1 736 000	1 806 000	1 815 000	1 840 000	1 877 000	2 004 000	2 376 000

10.4
Straße: Güterverkehr
Road: goods traffic
Routes: trafic marchandises

(1 000 t)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	7 689 245	:	:	:
EUR10	:	:	:	:	:	6 757 276	:	:	:
EUR9	:	:	:	:	:	6 604 440	:	:	:
Belgique/België	334 112	367 479	386 336	334 364	335 584	328 108	336 055	375 670	377 076
Danmark	:	:	197 181	203 218	211 365	222 367	217 705	232 267	228 798
BR Deutschland	2 149 050	2 172 368	2 596 194	2 374 700	2 310 480	2 428 098	2 436 012	2 585 670	2 719 152
Ellas	:	:	:	174 479	159 936	152 836	157 858	142 689	:
España	:	:	:	:	:	929 402	1 100 747	1 129 730	:
France	1 469 610	1 407 900	1 457 060	1 285 254	1 267 345	1 296 774	1 354 695	1 538 018	1 516 176
Ireland	:	:	:	93 323	91 345	95 126	87 570	82 333	83 257
Italia	889 756	:	:	:	:	346 030	:	:	:
Luxembourg	9 796	16 848	19 114	19 051	17 299	19 623	:	:	:
Nederland	327 040	361 535	404 532	410 564	411 495	435 612	440 678	485 491	473 119
Portugal	:	:	:	:	:	2 567	192 305	212 867	:
United Kingdom	1 612 715	1 527 877	1 434 173	1 374 842	1 416 413	1 432 702	1 495 276	1 705 523	1 758 518

10.5
Eisenbahn: mittlere Betriebslänge der Strecken
Railways: average length of lines worked
Chemins de fer: longeur moyenne des lignes exploitées

(km)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	128 107	126 861	125 586	125 181	124 933	124 565	:
EUR10	115 705	111 620	110 977	109 672	109 269	108 853	108 640	108 408	:
EUR9	113 134	109 144	108 516	107 211	106 808	106 392	106 161	105 929	:
Belgique/België	4 232	3 992	3 978	3 776	3 712	3 691	3 639	3 556	3 513
Danmark	2 352	2 445	2 461	2 471	2 471	2 471	2 471	2 476	2 344
BR Deutschland	29 527	28 813	28 517	27 784	27 634	27 490	27 427	27 284	27 045
Ellas	2 571	2 476	2 461	2 461	2 461	2 461	2 479	2 479	2 479
España	:	:	13 542	13 575	12 710	12 721	12 686	12 550	12 565
France	36 117	34 255	34 382	34 694	34 678	34 665	34 644	34 599	34 469
Ireland	2 189	2 006	1 987	1 944	1 944	1 944	1 944	1 944	:
Italia	16 069	16 077	16 133	16 105	16 183	16 035	15 973	16 016	:
Luxembourg	271	275	270	270	270	270	270	272	272
Nederland	3 148	2 825	2 760	2 939	2 794	2 788	2 808	2 828	2 828
Portugal	:	:	3 588	3 614	3 607	3 607	3 607	3 607	3 061
United Kingdom	19 229	18 456	18 028	17 228	17 122	17 038	16 985	16 954	16 932

10.6
Eisenbahn: Personenverkehr
Railways: passenger traffic
Chemins de fer: trafic voyageurs

(Mio Personen-km/Mio passenger-km/Mio voyageurs-km)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	204 740	211 593	216 468	216 828	218 815	227 765	:
EUR10	162 557	176 096	185 136	190 563	194 764	195 332	197 514	206 013	:
EUR9	161 026	174 543	183 672	188 911	193 032	193 382	195 541	204 050	:
Belgique/België	7 567	7 650	6 963	6 444	6 572	6 069	6 270	6 348	6 400
Danmark	3 354	2 853	3 803	4 420	4 508	4 536	4 782	4 726	4 649
BR Deutschland	37 462	37 122	38 353	39 075	42 707	41 397	39 174	40 959	41 144
Ellas	1 531	1 553	1 464	1 652	1 732	1 950	1 973	1 963	2 011
España	:	:	13 527	15 574	15 979	15 693	15 394	15 716	14 715
France	40 980	50 696	54 496	60 203	61 885	59 862	59 972	63 292	64 492
Ireland	582	899	1 032	903	1 023	1 075	1 196	1 180	:
Italia	32 457	36 332	39 587	39 045	37 401	40 500	41 395	43 343	:
Luxembourg	205	234	246	231	229	224	216	223	224
Nederland	8 011	8 501	8 892	8 790	9 007	8 919	9 396	9 664	10 162
Portugal	:	:	6 077	5 456	5 725	5 803	5 907	6 036	5 908
United Kingdom	30 408	30 256	30 300	29 800	29 700	30 800	33 140	34 315	33 323

10.7
Eisenbahn: Güterverkehr (ohne Transit)
Railways: goods traffic (excluding transit traffic)
Chemins de fer: trafic marchandises (non compris transit)

(1 000 t)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	751 482	747 535	765 367	765 537
EUR10	997 303	828 979	867 852	705 264	767 438	718 549	714 814	732 822	735 502
EUR9	994 350	824 947	864 206	701 409	763 468	714 456	711 091	728 865	731 652
Belgique/België	69 706	54 045	64 891	65 051	66 802	58 379	59 170	60 917	61 021
Danmark	6 436	5 964	4 936	4 915	5 306	5 329	4 878	4 991	5 123
BR Deutschland	366 788	305 738	338 396	308 976	313 280	295 703	287 577	291 437	294 698
Ellas	2 953	4 032	3 646	3 855	3 970	4 093	3 723	3 957	3 850
España	:	:	36 358	32 839	31 521	27 693	27 041	26 589	23 911
France	232 938	202 175	203 161	158 492	152 544	137 168	133 266	135 170	136 510
Ireland	3 449	3 440	3 629	3 382	3 379	3 126	3 014	3 010	3 066
Italia	63 005	46 870	58 143	49 458	48 132	46 035	48 967	51 714	55 314
Luxembourg	17 619	14 719	14 577	12 054	12 718	12 215	11 420	12 549	13 439
Nederland	25 709	17 267	21 802	19 212	19 919	18 291	18 019	19 297	19 120
Portugal	:	:	:	:	:	5 240	5 680	5 956	6 124
United Kingdom	208 700	174 729	154 671	79 869	141 388	138 210	144 780	149 780	143 361

10.8
Binnenschiffahrt: Güterverkehr
Inland waterways: goods traffic
Navigation intérieure: trafic marchandises

(1 000 t)

	1970	1975	1980	1984	1985	1986	1987	1988	1989
Belgique/België	84 144	76 580	91 464	87 105	94 228	89 439	91 306	95 397	94 671
BR Deutschland	227 716	215 360	227 033	212 352	223 966	210 401	215 246	218 564	219 485
France	102 364	86 642	84 477	66 086	63 254	59 353	58 487	60 340	50 300
Italia	:	:	:	:	:	:	:	899	869
Luxembourg	1 486	2 413	:	:	:	:	2 021	2 173	2 055
Nederland	217 224	211 125	241 113	216 081	224 118	224 402	238 115	249 533	259 492
United Kingdom	:	11 000	11 280	:	:	:	:	:	:

10.9
Ausgaben für die Infrastruktur: Straßen, Wechselkurse und Preise von 1980
Infrastructure expenditure: road: 1980 prices and exchange rates
Dépenses en infrastructure: routes, prix et taux de change 1980

(Mio ECU)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Belgique/België	1 502	1 562	1 686	1 634	1 602	1 636	1 777	1 690	1 545	:	721	1 062	664
Danmark	650	677	613	733	768	789	751	651	668	612	620	654	:
BR Deutschland	11 134	10 627	10 049	10 084	10 784	11 268	11 310	10 560	9 307	8 829	8 863	:	:
Ellas	:	:	:	:	:	:	:	307	246	313	:	493	:
España	:	:	:	:	:	:	:	:	:	:	:	:	1 157
France	7 822	7 150	6 469	6 381	6 842	7 242	6 413	:	:	:	7 341	7 973	8 163
Ireland	181	172	152	170	193	207	213	222	226	239	192	252	261
Italia	4 005	3 925	3 256	3 366	3 090	3 026	3 464	4 084	4 238	4 435	3 901	5 680	5 785
Luxembourg	85	95	92	94	98	93	101	:	:	:	87	:	37
Nederland	2 339	2 440	2 401	2 253	2 258	2 398	2 310	2 198	:	:	620	4 169	1 967
Portugal	:	:	:	:	:	:	:	:	:	:	:	286	279
United Kingdom	5 577	5 205	4 791	4 039	4 009	4 212	4 286	3 572	4 091	4 533	4 065	5 879	3 882

10.10
Ausgaben für die Infrastruktur: Straßen, als Anteil vom BIP
Infrastructure expenditure: roads: as proportion of GDP
Dépenses en infrastructure: routes, proportionellement au PIB

(%)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Belgique/België	2.02%	2.13%	2.18%	2.10%	2.01%	2.01%	2.09%	2.02%	1.82%	:	0.83%	1.21%	0.74%
Danmark	1.53%	1.60%	1.36%	1.61%	1.66%	1.65%	1.57%	1.38%	1.37%	1.22%	1.19%	1.20%	:
BR Deutschland	2.20%	2.14%	1.92%	1.87%	1.94%	1.95%	1.93%	1.80%	1.60%	1.49%	1.46%	:	:
Ellas	:	:	:	:	:	:	:	1.06%	0.85%	1.08%	:	1.60%	:
España	:	:	:	:	:	:	:	:	:	:	:	:	0.69%
France	1.90%	1.74%	1.51%	1.45%	1.50%	1.54%	1.34%	:	:	:	1.45%	1.55%	1.55%
Ireland	1.72%	1.55%	1.35%	1.40%	1.48%	1.54%	1.54%	1.55%	1.55%	1.63%	1.26%	1.63%	1.69%
Italia	1.42%	1.44%	1.13%	1.15%	1.03%	0.96%	1.06%	1.23%	1.27%	1.32%	1.12%	1.59%	1.57%
Luxembourg	2.74%	3.27%	3.09%	3.11%	3.11%	2.86%	3.08%	:	:	:	2.39%	:	0.93%
Nederland	2.18%	2.28%	2.13%	1.95%	1.91%	1.98%	1.89%	1.81%	:	:	0.50%	3.25%	1.50%
Portugal	:	:	:	:	:	:	:	:	:	:	:	1.51%	1.41%
United Kingdom	1.56%	1.47%	1.31%	1.09%	1.04%	1.07%	1.11%	0.94%	1.06%	1.13%	1.00%	1.39%	0.89%

10.11
Ausgaben für die Infrastruktur: Eisenbahn, Wechselkurse und Preise von 1980
Infrastructure expenditure: railways: 1980 prices and exchange rates
Dépenses en infrastructure: chemins de fer, prix et taux de changes 1980

(Mio ECU)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Belgique/België	360	383	392	408	458	484	569	611	580	458	450	430	410
Danmark	153	170	167	155	114	119	116	111	122	136	132	134	:
BR Deutschland	3 525	3 502	3 693	3 528	3 442	3 360	3 386	3 251	3 115	2 991	3 429	:	:
Ellas	:	:	:	:	:	:	:	42	49	44	46	:	:
España	:	:	:	:	:	:	:	:	:	:	:	:	1 619
France	1 578	1 676	1 736	1 818	1 938	2 086	2 145	2 348	2 188	2 240	:	2 321	2 340
Ireland	30	33	29	29	28	33	41	48	48	40	37	34	29
Italia	957	929	1 082	1 201	1 354	1 476	1 602	1 780	1 861	1 986	:	2 130	2 006
Luxembourg	25	30	23	36	36	40	38	36	33	28	31	33	36
Nederland	256	303	303	338	323	313	336	328	:	:	393	:	314
Portugal	:	:	:	:	:	:	:	:	:	:	:	62	118
United Kingdom	1 209	1 204	1 094	1 140	1 226	1 249	1 230	1 221	1 180	1 281	1 174	1 111	1 181

10.12
Ausgaben für die Infrastruktur: Eisenbahn, als Anteil vom BIP
Infrastructure expenditure: railways: as proportion of GDP
Dépenses en infrastructure: chemins de fer, proportionellement au PIB

(%)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Belgique/België	0.49%	0.52%	0.51%	0.53%	0.57%	0.59%	0.67%	0.73%	0.68%	0.54%	0.52%	0.49%	0.46%
Danmark	0.36%	0.40%	0.37%	0.34%	0.25%	0.25%	0.24%	0.24%	0.25%	0.27%	0.25%	0.25%	:
BR Deutschland	0.70%	0.70%	0.70%	0.65%	0.62%	0.58%	0.58%	0.55%	0.53%	0.51%	0.56%	:	:
Ellas	:	:	:	:	:	:	:	0.14%	0.17%	0.15%	0.16%	:	:
España	:	:	:	:	:	:	:	:	:	:	:	:	0.96%
France	0.38%	0.41%	0.41%	0.41%	0.42%	0.44%	0.45%	0.48%	0.44%	0.45%	:	0.45%	0.45%
Ireland	0.29%	0.30%	0.25%	0.24%	0.22%	0.25%	0.30%	0.33%	0.33%	0.28%	0.24%	0.22%	0.19%
Italia	0.34%	0.34%	0.38%	0.41%	0.45%	0.47%	0.49%	0.54%	0.56%	0.59%	:	0.60%	0.55%
Luxembourg	0.81%	1.03%	0.76%	1.20%	1.14%	1.25%	1.16%	1.11%	0.99%	0.83%	0.87%	0.87%	0.91%
Nederland	0.24%	0.28%	0.27%	0.29%	0.27%	0.26%	0.28%	0.27%	:	:	0.31%	:	0.24%
Portugal	:	:	:	:	:	:	:	:	:	:	:	0.33%	0.60%
United Kingdom	0.34%	0.34%	0.30%	0.31%	0.32%	0.32%	0.32%	0.32%	0.31%	0.32%	0.29%	0.26%	0.27%

11. SECTORAL INDICATORS: AGRICULTURE

This chapter contains a number of indicators showing general trends in the agriculture sector.

The following sections also contain relevant tables:

2.2	Land use
3.2	Final energy consumption
7.	Air pollution (CORINAIR)
8.3	Water quality indicators for selected rivers
8.4	Water quality indicators for selected lakes
9.1	Wastes by source

11.1
Endproduktion (zu konstanten Preisen von 1985)
Final output (at constant 1985 prices)
Production finale (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	172 052	185 361	188 033	188 906	192 486	194 955	197 351
EUR10	131 388	130 676	149 924	161 329	164 792	165 254	166 867	169 849	174 419
EUR9	124 804	123 513	142 110	153 146	156 475	157 242	158 081	160 698	166 118
Belgique/België	4 914	4 663	4 968	5 390	5 684	5 589	5 814	5 970	5 793
Danmark	4 798	4 808	5 665	6 620	6 695	6 492	6 799	7 008	7 278
BR Deutschland	23 227	23 344	25 909	26 823	28 212	26 815	27 641	27 678	27 692
Ellas	6 584	7 163	7 814	8 182	8 317	8 011	8 786	9 151	8 301
Espana	16 223	15 734	19 081	20 874	20 019	20 234	22 556	21 630	19 666
France	34 836	32 952	38 895	43 033	43 355	44 495	44 480	45 718	50 771
Ireland	2 811	2 889	3 252	3 829	3 785	3 828	3 890	3 970	4 268
Italia	28 064	29 542	33 662	33 966	34 738	36 197	35 384	35 727	34 553
Luxembourg	158	159	151	165	170	164	163	170	168
Nederland	9 082	9 573	11 879	13 754	14 431	14 142	14 514	14 928	15 644
Portugal	:	:	3 046	3 159	3 221	3 418	3 063	3 476	3 266
United Kingdom	16 915	15 583	17 728	19 566	19 406	19 521	19 397	19 530	19 952

11.2
Tierische Endproduktion (zu konstanten Preisen von 1985)
Final crop output (at constant 1985 prices)
Production végétale finale (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	94 728	98 592	99 805	97 458	98 945	99 098	101 413
EUR10	73 423	74 463	84 455	88 012	89 110	87 577	87 648	87 634	89 639
EUR9	70 990	72 037	81 881	85 564	86 629	85 037	84 953	85 075	87 066
Belgique/België	3 262	3 151	3 402	3 572	3 757	3 736	3 859	3 931	3 825
Danmark	3 696	3 689	4 268	4 571	4 625	4 517	4 620	4 662	4 666
BR Deutschland	15 352	15 702	17 852	18 114	18 748	17 904	17 654	17 617	17 834
Ellas	2 433	2 426	2 574	2 448	2 481	2 540	2 696	2 559	2 573
Espana	7 371	6 659	8 685	8 929	8 960	8 048	9 434	9 448	9 649
France	17 946	18 473	20 544	21 162	21 316	20 903	20 774	20 935	21 766
Ireland	2 449	2 502	2 795	3 378	3 368	3 351	3 410	3 468	3 738
Italia	10 509	11 093	13 269	13 650	13 459	13 639	13 706	13 620	13 649
Luxembourg	115	128	128	137	136	133	131	130	134
Nederland	5 989	6 410	7 974	9 041	9 295	8 953	9 069	9 072	9 314
Portugal	:	:	1 588	1 651	1 735	1 833	1 862	2 016	2 125
United Kingdom	11 672	10 889	11 648	11 939	11 926	11 901	11 729	11 641	12 139

11.3
Pflanzliche Endproduktion (zu konstanten Preisen von 1985)
Final animal output (at constant 1985 prices)
Production animale finale (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	76 818	86 349	87 890	91 144	93 005	95 559	95 299
EUR10	57 994	56 544	65 123	73 029	75 511	77 348	79 057	81 936	84 506
EUR9	53 875	51 839	59 911	67 307	69 683	71 881	72 971	75 347	78 782
Belgique/België	1 649	1 510	1 563	1 812	1 920	1 844	1 944	2 029	1 958
Danmark	1 102	1 119	1 397	2 050	2 070	1 974	2 179	2 346	2 612
BR Deutschland	7 816	7 620	8 033	8 705	9 460	8 909	9 971	10 043	9 843
Ellas	4 119	4 704	5 212	5 723	5 828	5 467	6 087	6 589	5 724
Espana	8 377	8 710	10 271	11 861	10 962	12 266	12 794	12 213	9 707
France	17 409	15 224	18 493	22 023	22 283	23 668	23 976	24 940	29 143
Ireland	362	387	457	451	417	477	480	502	530
Italia	17 372	18 256	20 175	20 095	21 053	22 324	21 448	21 874	20 679
Luxembourg	43	30	21	27	32	30	32	39	34
Nederland	3 092	3 164	3 906	4 713	5 136	5 189	5 445	5 856	6 329
Portugal	:	:	1 424	1 458	1 418	1 531	1 154	1 410	1 086
United Kingdom	5 031	4 529	5 866	7 430	7 311	7 466	7 496	7 718	7 653

11.4
Input : Energie (zu konstanten Preisen von 1985)
Input : Energy (at constant 1985 prices)
Inputs : Energie (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	9 936	9 934	10 228	10 448	10 425	10 455	10 610
EUR10	8 198	8 141	9 026	8 872	9 144	9 349	9 353	9 359	9 510
EUR9	8 007	7 908	8 715	8 474	8 723	8 912	8 894	8 869	8 976
Belgique/België	247	323	290	323	384	405	390	385	374
Danmark	329	275	297	264	280	306	310	317	312
BR Deutschland	2 389	2 421	2 647	2 677	2 666	2 639	2 581	2 533	2 613
Ellas	191	233	312	398	421	436	459	490	534
Espana	550	651	753	894	918	921	899	907	888
France	1 940	1 804	1 986	1 898	1 892	1 964	1 975	1 959	1 970
Ireland	193	183	235	218	235	227	228	236	248
Italia	781	938	1 138	1 263	1 387	1 477	1 566	1 645	1 656
Luxembourg	7	6	6	8	9	9	9	9	8
Nederland	653	688	998	779	836	884	863	855	895
Portugal	:	:	157	168	166	178	173	189	212
United Kingdom	1 468	1 269	1 118	1 045	1 034	1 000	972	930	899

11.5
Anteil des Energieinputs an der Endproduktion
Energy input as proportion of final output
Inputs en énergie proportionellement à la production finale

(%)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:		5.8%	5.4%	5.4%	5.5%	5.4%	5.4%	5.4%
EUR10	6.2%	6.2%	6.0%	5.5%	5.5%	5.7%	5.6%	5.5%	5.5%
EUR9	6.4%	6.4%	6.1%	5.5%	5.6%	5.7%	5.6%	5.5%	5.4%
Belgique/België	5.0%	6.9%	5.8%	6.0%	6.8%	7.3%	6.7%	6.5%	6.5%
Danmark	6.9%	5.7%	5.2%	4.0%	4.2%	4.7%	4.6%	4.5%	4.3%
BR Deutschland	10.3%	10.4%	10.2%	10.0%	9.4%	9.8%	9.3%	9.2%	9.4%
Ellas	2.9%	3.3%	4.0%	4.9%	5.1%	5.4%	5.2%	5.4%	6.4%
Espana	3.4%	4.1%	3.9%	4.3%	4.6%	4.6%	4.0%	4.2%	4.5%
France	5.6%	5.5%	5.1%	4.4%	4.4%	4.4%	4.4%	4.3%	3.9%
Ireland	6.9%	6.4%	7.2%	5.7%	6.2%	5.9%	5.9%	5.9%	5.8%
Italia	2.8%	3.2%	3.4%	3.7%	4.0%	4.1%	4.4%	4.6%	4.8%
Luxembourg	4.3%	4.0%	4.0%	5.0%	5.2%	5.3%	5.3%	5.1%	4.9%
Nederland	7.2%	7.2%	8.4%	5.7%	5.8%	6.3%	5.9%	5.7%	5.7%
Portugal	:	:	5.2%	5.3%	5.2%	5.2%	5.6%	5.4%	6.5%
United Kingdom	8.7%	8.1%	6.3%	5.3%	5.3%	5.1%	5.0%	4.8%	4.5%

11.6
Input : Düngemittel (zu konstanten Preisen von 1985)
Input : Fertilizer (at constant 1985 prices)
Inputs : Engrais (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	:	:	:	:	:	:	:
EUR10	8 837	8 258	10 073	10 261	9 845	10 407	10 230	10 135	9 884
EUR9	8 726	8 135	9 928	10 059	9 653	10 254	10 071	9 950	9 720
Belgique/België	332	280	281	266	266	264	272	275	277
Danmark	436	387	437	426	393	406	392	398	421
BR Deutschland	1 910	1 962	2 217	2 060	1 970	2 085	1 973	1 920	1 844
Ellas	111	122	145	202	192	152	160	185	164
Espana	326	557	1 230	1 153	1 219	1 258	1 378	1 351	1 421
France	3 025	2 732	3 573	3 595	3 454	3 603	3 681	3 735	3 723
Ireland	313	224	346	405	382	432	402	418	437
Italia	1 103	994	1 268	1 247	1 239	1 374	1 367	1 257	1 174
Luxembourg	11	10	11	12	13	13	13	14	14
Nederland	412	396	488	472	476	487	416	419	372
Portugal	:	:	:	:	:	:	:	:	:
United Kingdom	1 185	1 151	1 308	1 575	1 460	1 590	1 556	1 513	1 458

11.7
Anteil des Düngemittelinputs an der Endproduktion
Fertilizer input as proportion of final output
Inputs en engrais proportionellement à la production finale

(%)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	:	:	:	:	:	:	:
EUR10	6.7%	6.3%	6.7%	6.4%	6.0%	6.3%	6.1%	6.0%	5.7%
EUR9	7.0%	6.6%	7.0%	6.6%	6.2%	6.5%	6.4%	6.2%	5.9%
Belgique/België	6.8%	6.0%	5.7%	4.9%	4.7%	4.7%	4.7%	4.6%	4.8%
Danmark	9.1%	8.0%	7.7%	6.4%	5.9%	6.3%	5.8%	5.7%	5.8%
BR Deutschland	8.2%	8.4%	8.6%	7.7%	7.0%	7.8%	7.1%	6.9%	6.7%
Ellas	1.7%	1.7%	1.9%	2.5%	2.3%	1.9%	1.8%	2.0%	2.0%
Espana	2.0%	3.5%	6.4%	5.5%	6.1%	6.2%	6.1%	6.2%	7.2%
France	8.7%	8.3%	9.2%	8.4%	8.0%	8.1%	8.3%	8.2%	7.3%
Ireland	11.1%	7.8%	10.6%	10.6%	10.1%	11.3%	10.3%	10.5%	10.2%
Italia	3.9%	3.4%	3.8%	3.7%	3.6%	3.8%	3.9%	3.5%	3.4%
Luxembourg	6.7%	6.2%	7.4%	7.4%	7.7%	8.1%	8.1%	8.1%	8.5%
Nederland	4.5%	4.1%	4.1%	3.4%	3.3%	3.4%	2.9%	2.8%	2.4%
Portugal	:	:	:	:	:	:	:	:	:
United Kingdom	7.0%	7.4%	7.4%	8.0%	7.5%	8.1%	8.0%	7.7%	7.3%

11.8
Input : Pflanzenschutzmittel (zu konstanten Preisen von 1985)
Input : Pesticides (at constant 1985 prices)
Inputs : Pesticides (prix constants de 1985)

(Mio ECU)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	3 561	4 307	4 446	4 580	4 916	5 337	5 290
EUR10	1 902	1 919	3 016	3 685	3 837	3 958	4 280	4 629	4 554
EUR9	1 857	1 857	2 936	3 590	3 750	3 869	4 188	4 508	4 428
Belgique/België	68	80	98	118	122	124	124	134	136
Danmark	39	39	85	168	152	138	142	161	170
BR Deutschland	314	279	572	530	547	567	605	633	610
Ellas	44	61	81	94	87	89	92	121	126
Espana	228	164	263	347	352	355	391	390	414
France	816	814	1 210	1 578	1 679	1 747	1 915	2 146	2 169
Ireland	14	12	37	40	37	38	43	45	45
Italia	322	331	464	508	551	598	617	593	559
Luxembourg	1	1	1	1	1	1	1	2	2
Nederland	74	84	111	117	124	124	128	126	119
Portugal	:	:	282	276	258	268	245	317	321
United Kingdom	209	218	358	529	537	531	615	667	619

11.9
Anteil des Pflanzenschutzmittelinputs an der Endproduktion
Pesticide input as proportion of final output
Inputs en pesticides proportionellement à la production finale

(%)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	2.1%	2.3%	2.4%	2.4%	2.6%	2.7%	2.7%
EUR10	1.4%	1.5%	2.0%	2.3%	2.3%	2.4%	2.6%	2.7%	2.6%
EUR9	1.5%	1.5%	2.1%	2.3%	2.4%	2.5%	2.6%	2.8%	2.7%
Belgique/België	1.4%	1.7%	2.0%	2.2%	2.1%	2.2%	2.1%	2.2%	2.4%
Danmark	0.8%	0.8%	1.5%	2.5%	2.3%	2.1%	2.1%	2.3%	2.3%
BR Deutschland	1.4%	1.2%	2.2%	2.0%	1.9%	2.1%	2.2%	2.3%	2.2%
Ellas	0.7%	0.9%	1.0%	1.2%	1.0%	1.1%	1.0%	1.3%	1.5%
Espana	1.4%	1.0%	1.4%	1.7%	1.8%	1.8%	1.7%	1.8%	2.1%
France	2.3%	2.5%	3.1%	3.7%	3.9%	3.9%	4.3%	4.7%	4.3%
Ireland	0.5%	0.4%	1.2%	1.0%	1.0%	1.0%	1.1%	1.1%	1.0%
Italia	1.1%	1.1%	1.4%	1.5%	1.6%	1.7%	1.7%	1.7%	1.6%
Luxembourg	0.7%	0.7%	0.6%	0.7%	0.7%	0.8%	0.8%	1.0%	1.1%
Nederland	0.8%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%	0.8%
Portugal	:	:	9.3%	8.7%	8.0%	7.8%	8.0%	9.1%	9.8%
United Kingdom	1.2%	1.4%	2.0%	2.7%	2.8%	2.7%	3.2%	3.4%	3.1%

11.10
Verbrauch von Stickstoffdüngern
Consumption of nitrogen fertilizers
Consommation d'engrais azotes

(1000 t)

	1973	1975	1980	1985	1986	1987	1988	1989
EUR12	5 023	6 009	7 534	8 052	8 284	8 417	8 441	8 304
EUR10	5 651	6 785	8 355	9 158	9 396	9 252	9 170	9 092
EUR9	5 450	6 510	8 022	8 708	8 964	8 868	8 761	8 666
Belgique/Lux	178	182	194	195	199	199	196	195
Danmark	289	339	374	382	381	367	377	386
BR Deutschland	1 642	1 906	2 303	2 286	2 287	2 375	2 413	2 254
Ellas	201	275	333	450	432	384	409	426
Espana	578	722	902	962	1 063	1 148	1 168	1 109
France	1 453	1 708	2 147	2 408	2 568	2 557	2 604	2 660
Ireland	87	153	275	314	343	340	349	349
Italia	595	724	1 006	1 055	1 011	1 047	925	925
Nederland	405	453	483	500	504	458	435	435
Portugal	77	141	137	137	150	153	157	157
United Kingdom	801	1 045	1 240	1 568	1 671	1 525	1 462	1 462

11.11
Verbrauch von Phosphatdüngern
Consumption of phosphate fertilizers
Consommation d'engrais phosphates

(1000 t)

	1973	1975	1980	1985	1986	1987	1988	1989
EUR12	4 660	4 341	4 739	4 185	4 150	4 226	4 212	4 240
EUR10	4 895	4 391	4 750	4 243	4 190	4 204	4 179	4 190
EUR9	4 777	4 231	4 592	4 063	4 008	4 034	4 003	4 001
Belgique/Lux	150	120	102	91	89	87	87	87
Danmark	127	129	111	106	107	96	92	99
BR Deutschland	1 323	1 221	1 226	1 055	1 036	1 003	992	951
Ellas	118	160	158	180	182	170	176	189
Espana	432	422	476	462	494	537	542	559
France	1 809	1 664	1 773	1 466	1 425	1 405	1 460	1 492
Ireland	183	135	145	133	150	142	148	148
Italia	518	490	748	692	667	786	715	715
Nederland	109	81	83	81	88	80	76	76
Portugal	35	74	81	70	79	84	89	89
United Kingdom	558	391	404	439	446	435	433	433

11.12
Verbrauch von Handelsdüngern
Consumption of commercial fertilizers
Consommation d'engrais commerciaux

(1000 t)

	1973	1975	1980	1985	1986	1987	1988	1989
EUR12	13 844	14 495	16 753	16 714	17 056	17 252	17 429	17 272
EUR10	15 172	15 548	17 824	18 205	18 563	18 351	18 356	18 241
EUR9	14 835	15 085	17 297	17 520	17 888	17 744	17 708	17 553
Belgique/Lux	517	451	447	421	425	417	415	413
Danmark	598	639	627	634	642	606	614	650
BR Deutschland	4 764	4 932	5 169	4 823	4 835	4 810	4 876	4 591
Ellas	337	463	527	685	675	607	648	688
Espana	1 216	1 402	1 662	1 734	1 855	2 021	2 094	2 052
France	4 651	4 686	5 609	5 695	5 872	5 818	5 998	6 094
Ireland	423	432	601	620	691	670	691	691
Italia	1 338	1 490	2 111	2 102	2 061	2 303	2 093	2 093
Nederland	650	635	679	701	696	636	605	605
Portugal	129	245	259	241	269	283	295	295
United Kingdom	1 894	1 820	2 054	2 524	2 666	2 484	2 416	2 416

11.13
Trends im Verbrauch von Insektiziden
Trends in the consumption of insecticides
Evolution de la consommation en insecticides

(T) (1975=100)

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Belgique/België	:	:	:	:	:	:	:	:	:	:
Danmark	349	91	:	127	135	126	125	95	123	125
BR Deutschland	1 648	142	146	118	131	149	95	88	74	:
Ellas	2 393	113	:	:	:	136	:	:	:	:
Espana		:	:	:	:	:	:	:	:	:
France	3 800	126	134	145	129	145	166	190	171	174
Ireland	150	123	:	:	:	:	:	:	:	:
Italia	27 064	121	116	110	123	:	135	124	122	135
Luxembourg		:	:	:	:	:	:	:	:	:
Nederland	455	:	:	:	:	144	139	123	109	126
Portugal	599	114	103	129	124	127	127	107	127	148
United Kingdom	1 760	84	:	:	:	:	:	:	:	:

11.14
Trends im Verbrauch von Fungiziden
Trends in the consumption of fungicides
Evolution de la consommation en fungicides

(T) (1975=100)

	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Belgique/België	:	:	:	:	:	:	:	:	:	:
Danmark	432	154	:	402	521	556	557	427	243	273
BR Deutschland	5 291	124	133	136	143	162	160	164	174	:
Ellas	28 292	90	:	:	:	97	:	:	:	:
Espana	:	:	:	:	:	:	:	:	:	:
France	14 600	271	310	388	350	388	340	345	310	341
Ireland	170	124		:	:	:	:	:	:	:
Italia	93 203	171	130	104	88	:	91	101	123	:
Luxembourg	:	:	:	:	:	:	:	:	:	:
Nederland	2 418	:	:	:	:	164	180	148	168	172
Portugal	15 902	131	82	79	63	88	88	58	60	64
United Kingdom	2 640	181	:	:	:	:	:	:	:	:

11.15
Trends im Verbrauch von Herbiziden
Trends in the consumption of herbicides
Evolution de la consommation en herbicides

	(T)									(1975=100)
	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988
Belgique/België	:	:	:	:	:	:	:	:	:	:
Danmark	3 915	99	:	132	126	120	120	103	102	102
BR Deutschland	15 700	133	124	113	123	120	111	119	108	:
Ellas	908	185	:	:	:	288	:	:	:	:
Espana	:	:	:	:	:	:	:	:	:	:
France	22 800	143	134	137	137	142	157	155	150	158
Ireland	830	127	:	:	:	:	:	:	:	:
Italia	14 297	155	155	174	182	:	198	208	219	218
Luxembourg	:	:	:	:	:	:	:	:	:	:
Nederland	4 804	:	:	:	:	83	83	79	81	76
Portugal	794	141	101	120	117	135	133	165	172	180
United Kingdom	21 300	132	:	:	:	:	:	:	:	:

11.16
Rinderbestand im Dezember
Cattle population in December
Effectifs bovins en Décembre

(1 000 Stück / head / têtes)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	:	:	:	79 451	79 489	80 205	79 671
EUR10	:	:	78 326	77 550	75 854	73 044	73 087	73 558	73 330
EUR9	78 987	77 537	77 445	76 774	75 093	72 303	72 391	72 868	72 643
Belgique/België	2 896	2 805	2 896	2 943	2 967	2 950	2 967	3 049	3 161
Danmark	2 956	3 055	2 921	2 623	2 490	2 323	2 230	2 232	2 241
BR Deutschland	14 364	14 493	15 069	15 627	15 305	14 887	14 659	14 563	14 587
Ellas	:	:	881	776	761	741	696	690	687
Espana	:	:	:	4 907	4 932	5 075	5 046	5 312	5 001
France	23 949	23 641	23 605	22 802	22 171	21 052	21 340	21 394	21 500
Ireland	6 534	6 211	5 826	5 779	5 626	5 580	5 637	5 899	6 029
Italia	8 487	8 529	8 836	9 009	8 921	8 898	8 843	8 858	8 235
Luxembourg	208	206	220	220	214	209	207	208	215
Nederland	4 668	4 606	5 010	5 076	4 922	4 549	4 606	4 731	4 830
Portugal	:	:	:	:	:	1 332	1 356	1 335	1 340
United Kingdom	14 925	13 991	13 062	12 695	12 476	11 855	11 902	11 933	11 846

11.17
Schweinebestand im Dezember
Pig population in December
Effectifs porcins en Décembre

(1 000 Stück / head / têtes)

	1973	1975	1980	1985	1986	1987	1988	1989	1990
EUR12	:	:	:	:	:	103 976	101 644	101 949	100 708
EUR10	71 393	69 264	78 231	81 923	84 907	84 303	82 700	82 501	82 095
EUR9	70 567	68 555	77 236	80 828	83 777	83 164	81 473	81 341	80 952
Belgique/België	4 720	4 679	5 011	5 412	5 763	5 970	6 233	6 440	6 272
Danmark	8 364	7 597	9 696	9 104	9 422	9 048	9 105	9 120	9 282
BR Deutschland	20 451	19 805	22 553	24 282	24 180	23 670	22 589	22 165	22 035
Ellas	826	709	995	1 095	1 130	1 139	1 226	1 160	1 143
Espana	:	:	:	12 114	15 731	17 222	16 614	16 850	15 949
France	11 461	11 890	11 963	10 956	12 063	11 915	11 706	12 275	12 219
Ireland	1 035	880	1 031	994	980	960	961	999	1 069
Italia	8 201	8 888	8 928	9 169	9 278	9 363	9 360	9 254	8 837
Luxembourg	101	86	88	72	74	77	73	71	70
Nederland	6 889	7 016	10 196	12 908	14 063	14 226	13 820	13 634	13 788
Portugal	:	:	:	:	:	2 452	2 331	2 598	2 664
United Kingdom	9 345	7 714	7 770	7 930	7 955	7 915	7 626	7 383	7 379

12. CONSERVATION

The conservation of species and habitats is an important component of Community environment policy, but comparable statistics in this field, at Community level, are generally lacking. The Community has also become involved with issues of conservation in developing countries, and in this context Eurostat has compiled statistics on the import of tropical hardwoods by Member States.

The tables on tropical hardwood imports have been extracted from the database of external trade statistics. In general, trade statistics must be interpreted cautiously since distortions may be caused by changes in nomenclature, by difficulties in classification and by complex patterns of trade, where goods are imported under one heading and then re-exported after processing. Nonetheless, it appears that, in most Member States, the quantity of tropical hardwoods imported has remained steady or has declined since 1976.

Notes

- up to 1987, the following NIMEXE headings are included:
  4402 40
  4403 21, 4403 22, 4403 23, 4403 24, 4403 25, 4403 28
  4405 31, 4405 33, 4405 39
  414 51, 4414 55
- from 1988 onwards, the following Combined Nomenclature headings are included:
  4403 31, 4403 32, 4403 33, 4403 34, 4403 35
  4407 21, 4407 22, 4407 23
  4408 20, 4412 11
- the differences between these two nomenclatures are complex and it is difficult to assess the impact of the change. One notable difference is that the Combined Nomenclature headings include plywood faced with tropical hardwoods (which could not be distinguished in the NIMEXE system).

12.1
Handel mit Tropenholz
Trade in tropical hardwoods
Commerce de bois durs tropicaux

QUELLE: Eurostat COMEXT SOURCE: Eurostat COMEXT SOURCE: Eurostat COMEXT

12.1.1
Nettoeinfuhren in Mengen
Net imports, by quantity
Importations nettes, par quantité

(1000 t)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	:	:	:	4 590	4 503	4 616	4 758	3 651	
EUR10	:	:	:	:	:	3 940	3 788	4 164	3 876	3 695	3 802	3 925	3 092	
EUR9	5 250	4 836	4 633	5 359	5 038	3 934	3 744	4 084	3 804	3 618	3 648	3 807	3 040	
UEBL	256	236	233	255	244	160	164	183	199	191	197	209	209	
Danmark	66	63	35	47	40	35	41	49	59	50	36	26	35	
BR Deutschland	1 084	1 007	1 009	1 083	1 064	723	686	837	712	634	669	680	422	
Ellas	:	:	:	:	:	7	45	80	73	77	154	118	52	
Espana	:	:	:	:	:	:	:	:	421	474	453	492	320	
France	1 754	1 591	1 400	1 668	1 665	1 272	1 218	1 194	1 112	1 057	1 037	1 027	561	
Ireland	38	26	39	42	43	51	44	40	44	48	45	47	46	
Italia	1 076	970	981	1 168	1 197	875	855	724	807	730	670	738	499	
Nederland	516	543	502	521	408	404	355	507	408	474	533	545	493	
Portugal	:	:	:	:	:	:	:	:	293	334	362	341	239	
United Kingdom	459	400	434	576	377	414	382	550	464	434	460	534	775	

12.2.2
Nettoeinfuhren nach Wert
Net imports, by value
Importations nettes, par valeur

(Mio ECU)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
EUR12	:	:	:	:	:	:	:	:	1 620	1 646	1 552	1 647	1 518	
EUR10	:	:	:	:	:	1 155	1 162	1 424	1 460	1 432	1 345	1 437	1 355	
EUR9	977	1 003	943	1 280	1 377	1 153	1 150	1 402	1 439	1 409	1 302	1 405	1 344	
UEBL	51	51	49	63	62	45	49	62	67	69	65	75	86	
Danmark	22	26	14	20	20	22	29	37	58	54	33	20	20	
BR Deutschland	223	239	242	297	328	229	237	321	295	241	245	260	192	
Ellas	:	:	:	:	:	1	12	22	20	23	42	32	10	
Espana	:	:	:	:	:	:	:	:	108	149	131	142	111	
France	271	262	217	328	397	305	300	295	303	336	304	303	187	
Ireland	11	9	12	14	17	22	22	19	21	22	20	23	21	
Italia	151	154	158	225	292	212	225	197	254	255	240	287	204	
Nederland	112	127	121	153	117	129	107	187	149	164	153	160	177	
Portugal	:	:	:	:	:	:	:	:	52	66	76	69	53	
United Kingdom	136	134	130	179	144	189	182	284	292	268	243	277	456	

SOURCE: Eurostat COMEXT

13. PUBLIC OPINION

Public opinion on environmental questions may be considered both as a response to increasing awareness of the state of the environment, and also as a driving force for new policy initiatives at national and Community level.

Surveys of public opinion on the environment have been made by the European Commission in 1982, 1986 and 1988. These surveys asked for reactions to a series of environmental issues grouped into *local* problems and *national and world* problems. The results summarized here show that there has been a general increase in the level of concern on most issues in most countries. Loss of farmland, and lack of access to open space and countryside, are the two areas of least concern. However, damage to the landscape causes the most concern of any local issue. One consistent - and perhaps surprising - feature of all these surveys has been that people express much more concern about national and world issues than about local issues.

Notes:

- For local issues, respondents were asked how much reason they had to complain about each area of possible concern. For presentation purposes, the replies were weighted as follows:
  "a great deal" 3
  "a fair amount" 2
  "not very much" 1
  "not at all" 0
- For national and world issues, respondents were asked how worried or concerned they were about each issue. Replies and weightings were the same as for local issues.

Documentation

The Europeans and their environment, 1983 - 1986 - 1988
Directorate General for Information, Communication and Culture (DG X), Brussels

ANMERKUNG:
- Die Werte entsprechen den Hauptpunkten der wie folgt gewichteten Antworten: "sehr viel" (3), "ziemlich viel" (2), "nicht sehr viel" (1), "keinen Grund" (0).

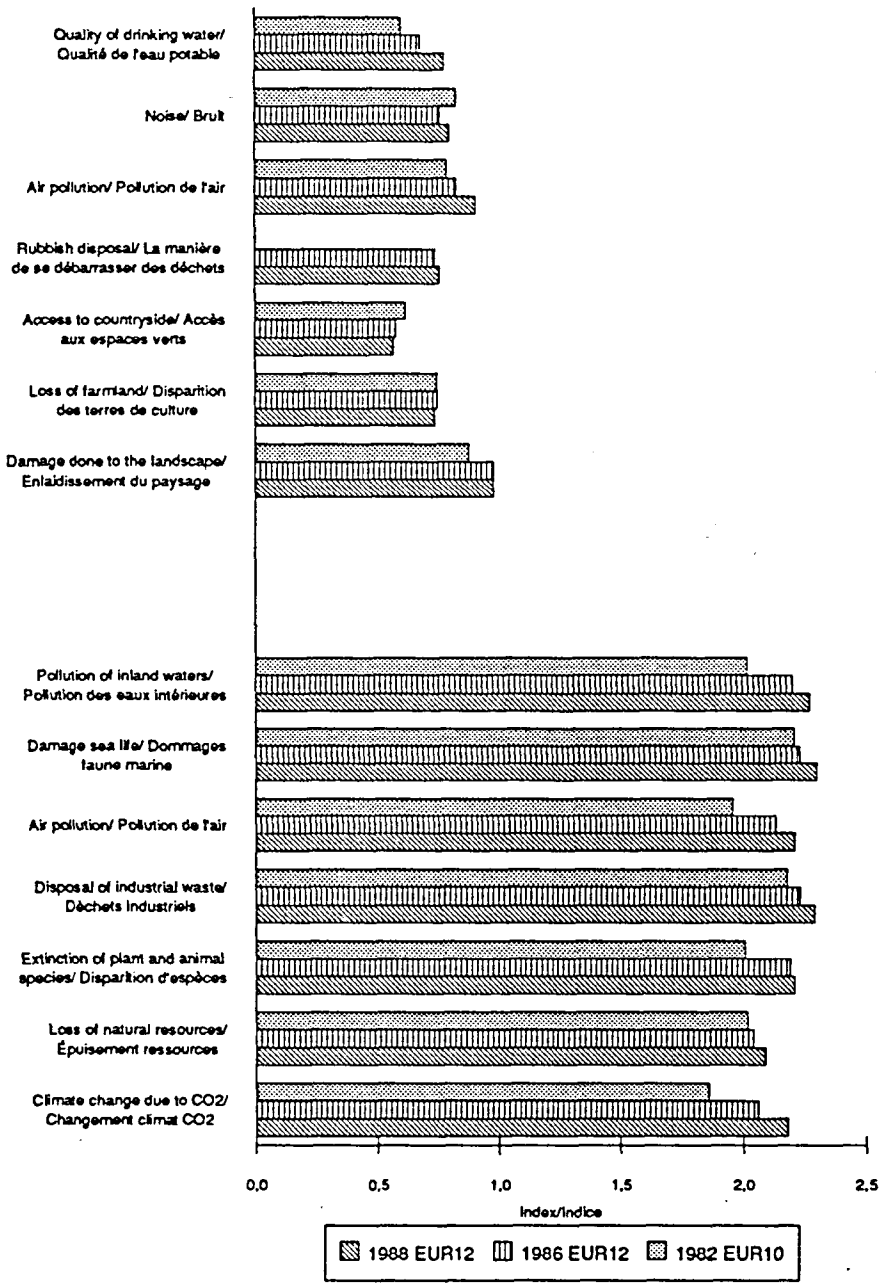
QUELLE: GD X/Eurobarometer

NOTE:
- Values are mean scores for replies weighted as follows: "a great deal" (3), "a fair amount" (2), "not very much" (1), "not at all" (0).

SOURCE: DG X/Eurobarometer

NOTE:
- Les scores pour les réponses pondérées sont les suivants: "beaucoup" (3), "assez" (2), "peu" (1), pas du tout" (0).

SOURCE: DG X/Eurobaromètre



Abbildung/Figure 13.1
Umweltbewußtsein: lokales, landes- und weltweites Umfeld
Public opinion: local, national and world environment
Opinion publique: environnement local, national et mondial

ANMERKUNG:
- Die Werte entsprechen den Hauptpunkten der wie folgt gewichteten Antworten: "sehr viel" (3), "ziemlich viel" (2), "nicht sehr viel" (1), "keinen Grund" (0).

QUELLE: GD X/Eurobarometer

NOTE:
- Values are mean scores for replies weighted as follows: "a great deal" (3), "a fair amount" (2), "not very much" (1), "not at all" (0).

SOURCE: DG X/Eurobarometer

NOTE:
- Les scores pour les réponses pondérées sont les suivants: "beaucoup" (3), "assez" (2), "peu" (1), pas du tout" (0).

SOURCE: DG X/Eurobaromètre

13.1.1
Lokales Umfeld
Local environment
Environnement local

	Quality of drinking water Qualité de l'eau potable Trinkwasserqualität			Noise Bruit Lärm		
	1982	1986	1988	1982	1986	1988
EUR12	:	0.68	0.78	:	0.76	0.80
EUR10	0.60	:	:	0.83	:	:
Belgique/België	0.56	0.54	0.58	0.87	0.87	0.76
Danmark	0.13	0.27	0.24	0.39	0.36	0.37
BR Deutschland	0.88	0.77	0.87	1.16	0.92	1.11
Ellas	0.51	0.68	0.95	0.78	0.87	1.15
Espana	:	0.88	0.95	:	0.84	1.00
France	0.51	0.59	0.64	0.70	0.61	0.56
Ireland	0.47	0.40	0.56	0.53	0.37	0.41
Italia	0.85	1.00	1.22	0.87	0.99	0.93
Luxembourg	0.21	0.37	0.51	0.78	0.81	0.75
Nederland	0.27	0.31	0.39	0.63	0.54	0.54
Portugal	:	0.76	0.84	:	0.85	0.96
United Kingdom	0.28	0.37	0.42	0.65	0.52	0.49

	Air pollution Pollution de l'air Luftverunreinigung			The way in which rubbish is disposed of La manière de se débarrasser des déchets Die Art in welcher Müll beseitigt wird		
	1982	1986	1988	1982	1986	1988
EUR12	:	0.83	0.91	:	0.74	0.76
EUR10	0.79	:	:	:	:	:
Belgique/België	0.87	0.92	0.91	:	0.60	0.53
Danmark	0.42	0.42	0.51	:	0.17	0.20
BR Deutschland	1.16	1.06	1.20	:	0.60	0.67
Ellas	0.83	0.93	1.24	:	1.09	1.42
Espana	:	0.94	1.00	:	0.76	0.79
France	0.67	0.65	0.71	:	0.53	0.49
Ireland	0.50	0.49	0.55	:	0.95	0.88
Italia	0.79	1.09	1.17	:	1.21	1.13
Luxembourg	0.84	0.99	1.03	:	0.64	0.65
Nederland	0.67	0.64	0.64	:	0.79	0.76
Portugal	:	0.87	0.97	:	1.05	1.13
United Kingdom	0.54	0.47	0.51	:	0.60	0.66

13.1.1
Lokales Umfeld (Fortsetzung)
Local environment (continued)
Environnement local (suite)

Lack of access to open space and countryside
Manque d'accès aux espaces verts et à la campagne
Fehlender Zugang auf Freiflächen und die Landschaft

Loss of good farmland
Disparition des bonnes terres de culture
Verlust guten Kulturbodens

	1982	1986	1988	1982	1986	1988
EUR12	:	0.58	0.57	:	0.75	0.74
EUR10	0.62	:	:	0.75	:	:
Belgique/België	0.69	0.58	0.48	0.79	0.80	0.69
Danmark	0.13	0.15	0.15	0.15	0.19	0.22
BR Deutschland	0.71	0.55	0.63	0.76	0.75	0.70
Ellas	0.91	0.93	1.07	0.86	0.83	1.00
Espana	:	0.90	0.91	:	0.83	0.91
France	0.53	0.36	0.41	0.82	0.70	0.73
Ireland	0.36	0.27	0.26	0.38	0.36	0.26
Italia	0.90	0.86	0.76	0.95	1.03	0.98
Luxembourg	0.19	0.24	0.20	0.62	0.67	0.56
Nederland	0.32	0.38	0.31	0.68	0.64	0.70
Portugal	:	0.70	0.79	:	0.79	0.89
United Kingdom	0.38	0.36	0.26	0.53	0.54	0.48

Damage done to the landscape
Enlaidissement du paysage
Schaden der der Landschaft zugefügt wurde

	1982	1986	1988
EUR12	:	0.98	0.98
EUR10	0.88	:	:
Belgique/België	0.86	0.90	0.87
Danmark	0.26	0.34	0.43
BR Deutschland	0.88	0.99	0.98
Ellas	1.15	1.06	1.43
Espana	:	1.08	1.12
France	0.91	0.82	0.82
Ireland	0.53	0.59	0.50
Italia	1.11	1.30	1.26
Luxembourg	0.94	1.17	0.98
Nederland	0.89	0.97	1.02
Portugal	:	0.87	0.95
United Kingdom	0.65	0.82	0.80

13.1.2
Landes- und weltweites Umfeld
National and world environment
Environnement national et mondial

Pollution of waters of rivers and lakes
Pollution de l'eau des rivières et des lacs
Wasserverschmutzung in Flüssen und Seen

Damage caused to sea life and beaches
Dommages causés à la faune marine et aux plages
Schaden am Meeresleben und an Stranden

	1982	1986	1988	1982	1986	1988
EUR12	:	2.20	2.27	:	2.23	2.30
EUR10	2.02	:	:	2.21	:	:
Belgique/België	1.70	1.75	1.92	1.81	1.76	1.90
Danmark	1.95	2.24	2.26	2.17	2.30	2.37
BR Deutschland	2.20	2.18	2.33	2.25	2.17	2.30
Ellas	1.86	1.92	2.20	2.20	2.13	2.38
Espana	:	2.36	2.40	:	2.31	2.40
France	1.97	2.11	2.09	2.24	2.18	2.26
Ireland	1.85	1.94	2.09	1.91	1.95	2.03
Italia	2.17	2.46	2.54	2.21	2.48	2.50
Luxembourg	1.86	2.25	2.05	2.13	2.21	2.06
Nederland	2.25	2.29	2.46	2.38	2.33	2.49
Portugal	:	2.17	2.05	:	2.15	2.01
United Kingdom	1.76	2.06	2.09	2.19	2.16	2.14

Air pollution
Pollution de l'air
Luftverschmutzung

The disposal of industrial waste
La manière de se débarrasser des déchets industriels
Beseitigung industriellen Mülls

	1982	1986	1988	1982	1986	1988
EUR12	:	2.13	2.21	:	2.23	2.29
EUR10	1.96	:	:	2.18	:	:
Belgique/België	1.78	1.83	1.94	1.88	1.79	1.98
Danmark	1.83	2.11	2.16	2.11	2.37	2.34
BR Deutschland	2.15	2.16	2.28	2.25	2.17	2.34
Ellas	2.19	2.08	2.31	2.33	1.95	2.15
Espana	:	2.29	2.37	:	2.27	2.40
France	1.87	2.01	2.05	2.14	2.08	2.15
Ireland	1.67	1.80	1.82	1.95	2.05	1.98
Italia	2.19	2.45	2.53	2.15	2.50	2.49
Luxembourg	1.99	2.19	2.07	2.03	2.16	2.16
Nederland	2.11	2.33	2.42	2.45	2.43	2.55
Portugal	:	2.08	2.03	:	2.18	2.07
United Kingdom	1.59	1.86	1.90	2.16	2.22	2.19

13.1.2
Landes- und weltweites Umfeld (Fortsetzung)
National and world environment (continued)
Environnement national et mondial (suite)

The extinction in the world of plant or animal species
La disparition dans le monde de plantes ou d'espèces animales
Ausgestorbene Pflanzen- und Tierarten in der Welt

The loss of natural resources in the world
L'épuisement des ressources naturelles mondiales
Der Verlust an Naturschätzen in der Welt

	1982	1986	1988	1982	1986	1988
EUR12	:	2.19	2.21	:	2.04	2.09
EUR10	2.01	:	:	2.02	:	:
Belgique/België	1.76	1.78	1.87	1.89	1.73	1.76
Danmark	2.05	2.17	2.15	2.16	2.11	2.17
BR Deutschland	2.18	2.21	2.27	1.99	1.93	2.02
Ellas	1.81	1.79	2.11	1.94	1.86	2.11
Espana	:	2.39	2.47	:	2.32	2.45
France	1.92	2.15	2.13	1.95	1.85	1.97
Ireland	1.60	1.63	1.81	1.61	1.71	1.88
Italia	1.98	2.28	2.26	2.15	2.21	2.17
Luxembourg	2.23	2.37	2.25	2.39	1.95	1.97
Nederland	2.12	2.25	2.30	1.95	1.95	1.97
Portugal	:	2.13	2.09	:	2.11	2.05
United Kingdom	2.01	2.18	2.10	2.03	2.12	2.05

Possible atmosphere damages affecting the world's weather brought about by CO2 emitted from burning coal and oil products
Possibilités de changement du climat terrestre provoqué par le CO2 provenant de la combustion du charbon et des produits pétroliers
Mögliche klimatische Schäden die durch den CO2 Ausstoß aus Kohle- und Ölverbrennung das Wetter in der Welt beeinflussen

	1982	1986	1988
EUR12	:	2.06	2.18
EUR10	1.86	:	:
Belgique/België	1.64	1.68	1.74
Danmark	2.03	2.15	2.35
BR Deutschland	2.06	2.03	2.29
Ellas	1.83	1.96	2.20
Espana	:	2.21	2.36
France	1.67	1.92	1.95
Ireland	1.67	1.84	2.00
Italia	2.03	2.29	2.34
Luxembourg	1.81	2.17	2.08
Nederland	1.69	1.84	2.09
Portugal	:	2.22	2.11
United Kingdom	1.74	2.01	2.09

Abbreviations and symbols

:	no data available
0	figure less than half the unit used
%	percentage
>	more than
<	less than
BOD	biological oxygen demand
C	carbon
CDIAC	Carbon Dioxide Information and Analysis Centre (USA)
CFC	chorofluorocarbon
CMA	Chemical Manufacturers Association (USA)
CO	carbon monoxide
CO_2, CO2	carbon dioxide
CORINE	experimental programme for gathering, coordinating and ensuring the consistency of information on the state of the environment and natural resources in the Community (see Introduction)
DO	dissolved oxygen
EC	European Communities
ECE	Economic Commission for Europe-United Nations (Geneva)
ECU	European Currency Unit (since 1.1.81)
EEC	European Economic Community
EFCTC	European Fluorocarbon producers technical Committee
EUR10	the ten Member States of the EC, without Spain and Portugal
EUR12	the twelve Member States of the EC
EUR9	the nine Member States of the EC, without Greece, Spain and Portugal
Eurostat	Statistical Office of the European Communities (Commission of the Eurpean Communities, Luxembourg)
GDP	Gross Domestic Product
HC	hydrocarbons
IEA	International Energy Agency (Paris)
Mio	million (10^6)
N	nitrogen
NCV	net calorific value
NH_4, NH4	ammonium
NIMEXE	Nomenclature of Goods for the External Trade Statistics of the Community and Statistics of Trade between Member States (EC)
NO_2, NO2	nitrogen dioxide
NO_3, NO3	nitrate
NO_x, NOx	nitrogen oxides
O.J.	Official Journal of the Europen Communities
OECD	Organization for Economic Cooperation and Development (Paris)
P	phosphorus
SO_2, SO2	sulphur dioxide
SO_x, SOx	sulphur oxides
tC	tonne of carbon
toe	tonne of oil equivalent (41 860 kilojoules NCV/kg)

Quellen
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Sources

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BR DEUTSCHLAND	
Statistisches Bundesamt	WIESBADEN
ELLAS	
National Statistical Service of Greece	ATHENS
ESPANA	
Ministerio de Obras Publicas y Urbanismo (MOPU)	MADRID
Instituto Nacional de Estadistica (INE)	MADRID
FRANCE	
Secrétariat d'Etat chargé de l'environnement - SRETIE	NEUILLY-SUR-SEINE
IRELAND	
Environmental Research Unit	DUBLIN
ITALIA	
Istituto Nazionale di Statistica (ISTAT)	ROMA
Ministero dell'Ambiente	ROMA
LUXEMBOURG	
Service centrale de la Statistique et des Etudes économiques (STATEC)	LUXEMBOURG
Ministère de l'Aménagement du Territoire et de l'Environnement	LUXEMBOURG
NEDERLAND	
Central Bureau voor de Statistiek (CBS)	VOORBURG
PORTUGAL	
Gabinete de Estudos e Planeamento e da Administraçao (GEPAT)	LISBOA
Instituto Nacional de Estatistica (INE)	LISBOA
UNITED KINGDOM	
Department of the Environment (DOE)	LONDON
INTERNATIONAL	
Organization for Economic Cooperation and Development (OECD)/	PARIS
Organisation de Coopération et de Développement Economiques (OCDE)	

Annex 1 The publication *Raw materials and environment.*

eurostat

RAPID REPORTS
Environment

1991 □ 1

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RAW MATERIALS AND ENVIRONMENT

Eurostat's recent publication (Raw Materials EC Balance Sheets 1983-1986) focuses mainly on the supply of raw materials. This paper draws attention to some implications of the raw materials balance sheets in the context of environment policy, notably, the importance of recycling as a source of raw materials and the impact of these substances on the environment and on human health.

The selection of the EC consolidated balance sheets presented here trace the main elements of availability and utilisation (taken equal by definition) for the Community in it's respective composition from 1975 to 1987. A world raw material reserves table -updated for 1988- is also included to illustrate the international interdependencies. Emphasis is given to recycling which plays an important role for two reasons, (a) reduction of wastes returned to the environment and (b) new supply of raw materials for the industrial sector, therefore graphics for the quantities recovered are seperately presented.

In this "Rapid Report" only a certain number of items can be analysed. The selection of the raw materials is based mainly on toxicity and availability of data. The grouping adopted is merely for convenience in graphical presentation. Additional information on the composition of the raw materials and the development in each Member State is contained in the publication mentioned above.

Although the consumption of raw materials has increased along with the industrial development and economic growth, this tendency has been influenced by the growing concern about the depletion of the world reserves and the environmental implications. This has led to research for substitutes, new extraction techniques and locations and reuse of recycled materials. The processes of extraction, processing, transformation and consumption are generating emissions and waste which are contaminating the air, water or soil and can be potentially hazardous to the environment and become directly or indirectly a threat to human health.

EC environmental protection legislation has been taken especially for the uses of Cadmium **(Cd)**, Lead **(Pb)** and Mercury **(Hg)**.
Cadmium **(Cd)**, Arsenic **(As)** and Beryllium **(Be)** are actually not included in the EC consolidated balance sheets. Whether Cadmium balances can be included in future in the raw materials balance sheets is being investigated.

The EC balance sheets show a still increasing consumption for Aluminium **(Al)**, Copper **(Cu)**, Chromium **(Cr)** and Nickel **(Nl)**, a constant or decreasing for Lead **(Pb)**, Zinc **(Zn)** and Vanadium **(V)** and a flactuating one for Mercury **(Hg)** and Cobalt **(Co)**. The recovery rates differ according to the material.

KONSOLIDIERTE EG-BILANZEN
METALLINHALT

CONSOLIDATED EC BALANCE SHEETS
METAL CONTENT

BILANS CONSOLIDES CE
TENEUR EN METAL

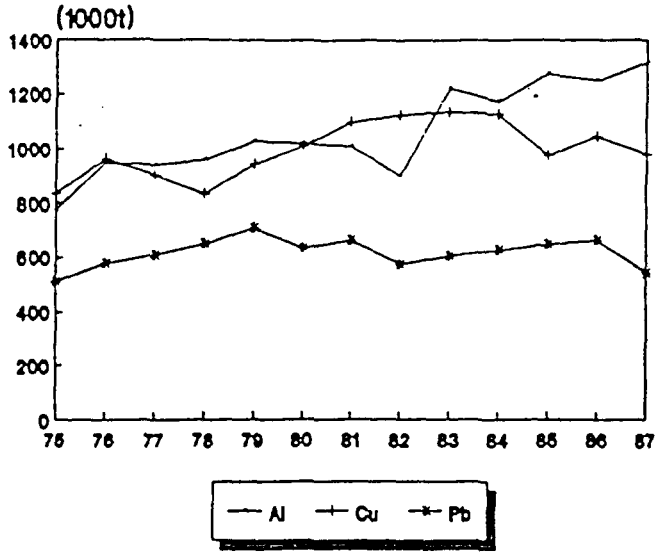
	AUFKOMMEN / AVAILABILITY / DISPONIBILITES					VERWENDUNG / UTILISATION / EMPLOIS			
	PI	PV	M	-DV	TOTAL	C	X	+DV	TOTAL
ALUMINIUM (1000t)									
1975	785	774	3578	:	5137	3764	746	627	5137
1976	661	946	3990	:	5597	4515	832	250	5597
1977	586	940	4041	:	5567	4381	858	328	5567
1978	571	959	3876	195	5601	4584	1017	:	5601
1979	567	1028	4126	165	5886	4957	929	:	5886
1980	549	1021	4450	:	6020	4873	980	167	6020
1981	1313	1011	3715	:	6039	4580	1323	136	6039
1982	1141	898	3534	:	5573	4204	1227	142	5573
1983	1031	1223	3664	274	6192	4838	1354	:	6192
1984	955	1175	4191	136	6457	4860	1597	:	6457
1985	949	1273	4267	135	6624	5083	1541	:	6624
1986	887	1248	4867	541	7543	6068	1475	:	7543
1987	1052	1314	4876	1032	8274	6432	1841	:	8274
KUPFER / COPPER / CUIVRE (1000t)									
1975	14	836	2118	:	2968	2436	390	142	2968
1976	8	962	2244	:	3214	2724	396	94	3214
1977	7	903	2305	:	3215	2678	488	49	3215
1978	6	832	2188	82	3108	2514	594	:	3108
1979	6	944	2185	100	3235	2694	541	:	3235
1980	6	1010	2336	12	3364	2807	557	:	3364
1981	7	1100	2066	120	3293	2631	662	:	3293
1982	4	1125	2163	:	3292	2611	648	33	3292
1983	4	1137	1939	85	3165	2550	615	:	3165
1984	3	1130	2252	7	3392	2680	712	:	3392
1985	2	977	2337	:	3316	2539	714	63	3316
1986	53	1048	2463	:	3564	2930	616	18	3564
1987	19	981	2328	96	3424	2811	613	:	3424
BLEI / LEAD / PLOMB (1000t)									
1975	127	511	651	:	1289	1126	136	27	1289
1976	129	579	711	5	1424	1247	177	:	1424
1977	141	606	674	9	1430	1251	179	:	1430
1978	147	650	651	:	1448	1163	211	74	1448
1979	158	708	724	:	1590	1365	207	18	1590
1980	138	635	782	:	1555	1256	228	71	1555
1981	122	663	635	30	1450	1251	199	:	1450
1982	111	574	699	66	1450	1245	205	:	1450
1983	111	603	672	15	1401	1195	206	:	1401
1984	108	625	696	15	1444	1222	222	:	1444
1985	104	648	759	21	1532	1315	217	:	1532
1986	176	664	801	18	1659	1477	182	:	1659
1987	176	540	804	36	1556	1322	234	:	1556

FUSSNOTEN SIEHE S.8

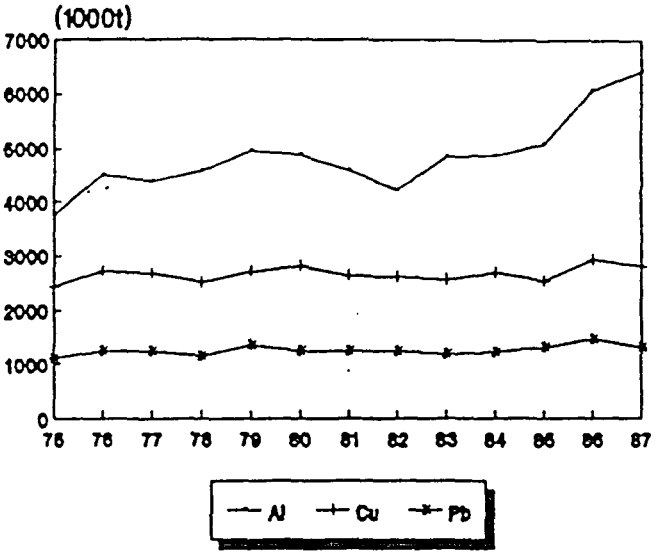
FOOTNOTES P.8

RENVOIS VOIR P.8

RÜCKGEWINNUNG RECOVERY RECUPERATION



VERBRAUCH CONSUMPTION CONSOMMATION



Al Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 21%

Cu Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 36%

Pb Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 45%

ALUMINIUM compounds are to be found everywhere in the biosphere. Toxic effects to plants and aquatic organisms have been observed.

COPPER is both essential and toxic, the threshold value depending on the kind of organism.

LEAD in the atmosphere is directly associated with alkyl lead in petrol. It is highly toxic and its continued build-up could have serious long-term consequences.

KONSOLIDIERTE EG-BILANZEN
METALLINHALT

CONSOLIDATED EC BALANCE SHEETS
METAL CONTENT

BILANS CONSOLIDES CE
TENEUR EN METAL

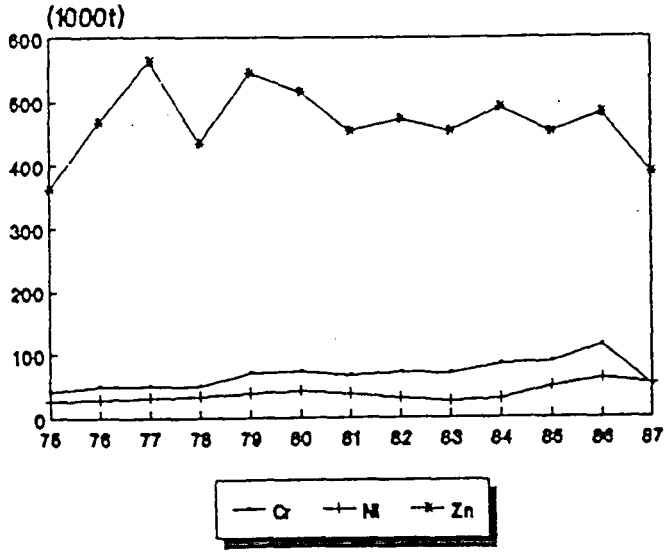
	AUFKOMMEN / AVAILABILITY / DISPONIBILITES					VERWENDUNG / UTILISATION / EMPLOIS			
	PI	PV	M	-DV	TOTAL	C	X	+DV	TOTAL
		*			CHROM / CHROMIUM / CHROME (1000t)				
1975	.	42	522	:	564	476	25	63	564
1976	.	49	597	:	646	574	37	35	646
1977	.	49	532	:	581	551	26	4	581
1978	.	50	500	:	550	511	19	20	550
1979	.	70	633	:	703	684	19	0	703
1980	.	72	600	:	672	652	17	3	672
1981	5	65	409	19	498	475	23	:	498
1982	6	71	488	:	565	534	28	3	565
1983	10	68	534	7	619	583	36	:	619
1984	23	83	586	16	708	667	41	:	708
1985	23	86	628	0	737	693	41	3	737
1986	23	114	650	:	787	739	45	3	787
1987	21	50	734	:	838	781	57	:	838
		*			NICKEL (1000t)				
1975	.	27	200	:	227	178	42	7	227
1976	.	29	197	:	226	180	37	9	226
1977	.	32	187	9	228	185	43	:	228
1978	.	33	180	10	223	183	40	:	223
1979	.	39	207	29	275	225	50	:	275
1980	.	41	211	18	270	227	43	:	270
1981	12	37	177	4	230	181	49	:	230
1982	6	31	149	0	186	151	36	:	186
1983	13	25	152	:	190	138	52	:	190
1984	14	29	185	4	232	180	52	:	232
1985	19	48	192	28	287	223	64	:	287
1986	18	60	205	24	307	237	70	:	307
1987	11	53	227	24	314	258	57	0	314
					ZINK / ZINC (1000t)				
1975	283	363	1178	:	1824	1375	216	233	1824
1976	315	468	1255	:	2038	1606	347	85	2038
1977	359	563	1111	:	2033	1576	370	87	2033
1978	414	434	1028	33	1909	1631	278	:	1909
1979	413	545	1170	33	2161	1883	278	:	2161
1980	425	515	1129	81	2150	1811	339	:	2150
1981	331	453	1084	23	1891	1491	400	:	1891
1982	375	473	1164	:	2012	1525	432	55	2012
1983	402	454	1041	133	2030	1541	489	:	2030
1984	423	491	1393	:	2307	1743	532	32	2307
1985	430	452	1421	33	2336	1763	573	:	2336
1986	609	482	1325	96	2512	1958	554	:	2512
1987	605	388	1518	60	2572	1910	662	:	2572

FUSSNOTEN SIEHE S.8

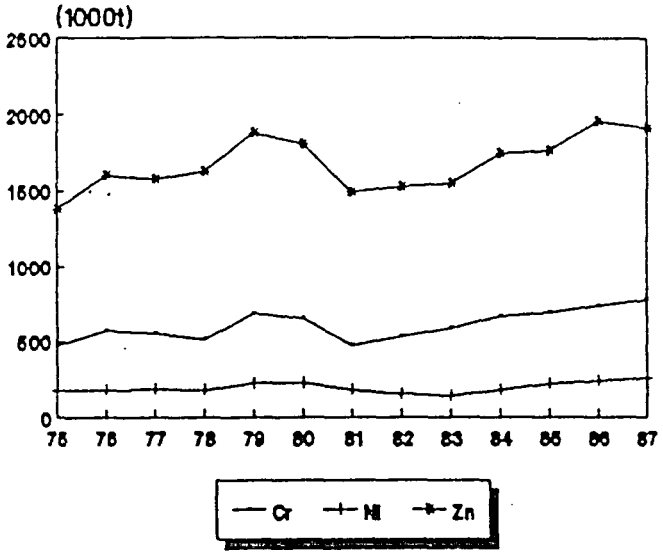
FOOTNOTES SEE P.8

RENVOIS VOIR P.8

RÜCKGEWINNUNG RECOVERY RECUPERATION



VERBRAUCH CONSUMPTION CONSOMMATION



Cr Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 15%

NI Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 25%

Zn Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 25%

CHROMIUM compounds are less toxic than methyl mercury and cadmium. Nevertheless severe toxic effects to local vegetation have been reported.

NICKEL in the atmosphere is mostly due to man's activities. Major sources of pollution result from the burning of heating fuels and automobile exhaust emissions.

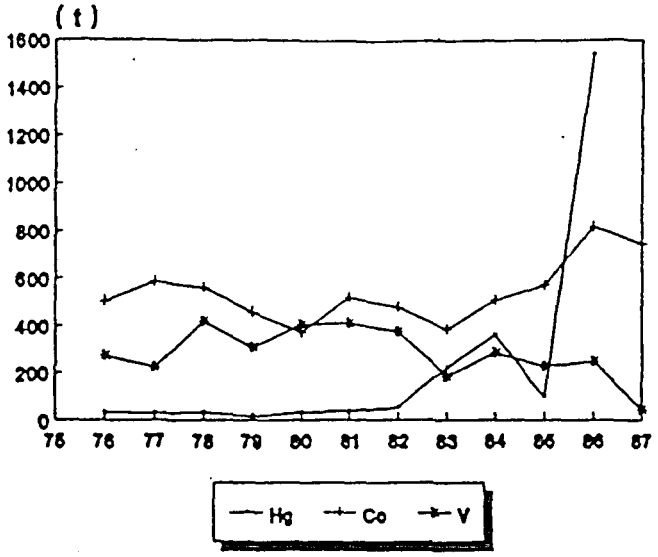
ZINC defficiency in general can cause more problems than an overdose. Limits for zinc concentrations in soil used for agricultural purposes exist in several countries.

KONSOLIDIERTE EG-BILANZEN — CONSOLIDATED EC BALANCE SHEETS — BILANS CONSOLIDES CE
METALLINHALT — METAL CONTENT — TENEUR EN METAL

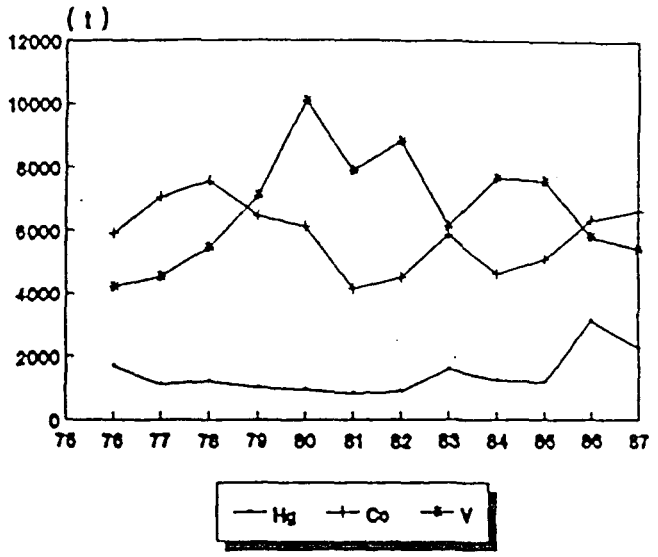
	AUFKOMMEN / AVAILABILITY / DISPONIBILITES					VERWENDUNG / UTILISATION / EMPLOIS			
	PI	PV	M	-DV	TOTAL	C	X	+DV	TOTAL
		*			QUECKSILBER / MERCURY / MERCURE (t)				
1975	.	:	:	:	:	:	:	:	:
1976	743	36	713	972	2464	1708	756	:	2464
1977	.	31	883	527	1441	1118	323	:	1441
1978	.	35	838	870	1743	1204	539	:	1743
1979	.	18	925	400	1343	1039	304	:	1343
1980	.	34	1079	200	1313	963	350	:	1313
1981	203	39	811	:	1053	818	210	25	1053
1982	128	51	747	238	1164	907	257	:	1164
1983	.	222	1372	668	2262	1592	670	:	2262
1984	.	360	1233	66	1659	1250	409	:	1659
1985	.	95	1627	264	1986	1182	804	:	1986
1986	2757	1540	769	233	5299	3144	2155	:	5299
1987	1571	:	1102	363	3036	2273	763	:	3036
		*			KOBALT / COBALT (t)				
1975	.	:	:	:	:	:	:	:	:
1976	.	503	17707	1000	19210	5907	13303	:	19210
1977	.	584	17507	2000	20091	7060	13031	:	20091
1978	.	558	21455	:	22013	7575	14438	:	22013
1979	.	456	14745	(3500)	18701	6440	12261	:	18701
1980	.	369	13449	(694)	14512	6144	8368	:	14512
1981	.	517	11362	:	11879	4140	5873	(1866)	11879
1982	.	476	6011	(3259)	9746	4491	5255	:	9746
1983	.	383	7087	2047	9517	5891	3626	:	9517
1984	.	506	5074	3020	8600	4635	3965	:	8600
1985	.	569	5374	830	6773	5075	1698	:	6773
1986	.	817	7497	769	9083	6326	2757	:	9083
1987	.	744	7375	973	9092	6604	2488	:	9092
		*			VANADIUM (t)				
1975	.	:	:	:	:	:	:	:	:
1976	.	271	6538	80	6889	4231	2658	:	6889
1977	.	223	7309	103	7635	4525	3110	:	7635
1978	.	416	9705	:	10121	5462	4650	9	10121
1979	.	305	9358	278	9941	7098	2843	:	9941
1980	.	404	11060	:	11464	10096	1334	34	11464
1981	.	408	10350	106	10864	7890	2974	:	10864
1982	.	373	10082	187	10642	8807	1835	:	10642
1983	.	184	8144	104	8432	6134	2298	:	8432
1984	.	284	13093	:	13377	7676	4272	1429	13377
1985	.	227	12601	:	12828	7580	3205	2043	12828
1986	.	247	7489	119	7855	5817	2038	:	7855
1987	.	41	7084	151	7276	5419	1857	:	7276

FUSSNOTEN SIEHE S.8 — FOOTNOTES SEE P.8 — RENVOIS VOIR P.8

RÜCKGEWINNUNG RECOVERY RECUPERATION



VERBRAUCH CONSUMPTION CONSOMMATION



Hg Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 49%

Co Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 13%

V Recovery Rate, (PV/C) x 100 for 1986;EUR 12 = 4%

MERCURY in the environment can result indirectly from the burning of fossil fuels. Methyl mercury poisoning arising from the contamination of the aquatic environment has resulted in serious episodes in Japan (Minamata, Niigata incidents).

COBALT levels in the environment are a function of man's industrial activity and of the extent to which soil particles are dispersed by the wind.

VANADIUM fly ash release by the use of oil combustion for power generation has been markedly reduced by the increasing use of anti-pollution control measures.

WELTROHSTOFFVORRATE — WORLD RAW MATERIAL RESERVES — RESERVES MONDIALES DE MATIERES PREMIERES

1988

	WESTEUROPA / WESTERN EUROPE / EUROPE DE L'OUEST	EUR 12	OSTEUROPA / EASTERN EUROPE / EUROPE DE L'EST	AFRIKA / AFRICA / AFRIQUE	NORDAMERIKA / NORTH AMERICA / AMERIQUE DU NORD	MITTELAMERIKA / CENTRAL AMERICA / AMERIQUE CENTRALE	SUDAMERIKA / SOUTH AMERICA / AMERIQUE DU SUD	ASIEN / ASIA / ASIE	OZEANIEN / OCEANIAN / OCEANIE	TOTAL
	x									10^6t
Al	6,3	4,5	2,8	32,7	0,2	8,6	19,9	10,2	19,3	5485
Cu	2,0	1,2	13,1	12,2	19,2	8,5	27,8	7,3	9,9	589
Pb	13,7	8,7	16,6	5,8	31,8	3,2	2,9	5,8	20,2	139
Cr	1,5	0,0	2,2	94,7	0,1	0,0	0,1	1,4	0,0	2036
Ni	3,7	2,5	8,7	9,5	15,8	24,3	5,4	11,2	21,4	101
Zn	10,8	8,8	7,0	7,3	36,3	3,0	6,0	13,3	16,3	300
Hg	58,2	41,8	12,3	2,4	8,3	5,8	0,7	12,3	.	0,15
Co	2,4	1,5	2,7	33,0	13,4	22,2	1,4	11,8	13,0	8,4
V	0,6	.	24,6	47,4	13,5	0,0	0,7	10,1	3,1	16,6

SYMBOLS AND ABBREVIATIONS

BALANCE SHEET

PI	Production
PV	Domestic recovery
M	Imports
±DV	Variations in stocks
C	Consumption (PI+PV+M-X±DV)
X	Exports

SIGNS

t	Tonne (also tonne of metal content or net tonne)
(...)	Estimated by the EC Statistical Office
:	Figure not available
0	Negligible (generally less than half the smallest unit or decimal of the heading)
.	No figure for confidentiality reasons

SCOPE

EC, EUR	European Community : 1975-1980; EUR 9 1981-1985; EUR 10 1986-1987; EUR 12

SOURCES

Raw Materials, EC Balance Sheets 1983-1986, Eurostat
Raw Materials Questionaire 1987, Eurostat
UNEP Industry and Environment Jan / Feb / Mar, 1989
Metals in the Environment, H.A.,Waldon, 1980

Annex 2 Tables supplied for the document *The State of the Environment in the European Community 1992*, which are not included in the publication *Environment Statistics 1991.*

Final consumption of steel(1)
(Crude steel equivalent)

mio.tonnes	1980	1985	1986	1987	1988	1989	1990
Final consumption	97.8	85.6	97.4	97.7	111.9	116.4	118.3
Consumption per capita(kg)	362	315	302	302	344.8	357	360.7
Direct net exports	15.8	18.8	15.5	17.4	13.9	11.2	9.5
Indirect net exports	15	16.3	14.3	12.3	11.6	10.4	7.5
Stock variation	-0.7	0.2	-1.3	-1.2	0.2	1.7	1.7
Scrap consumption in rolling mill	0.2	0.3	0.3	0.2	0.2	0.3	0.3
Total Community production	127.7	120.6	125.6	126	137.4	139.4	136.8

PATES DE BOIS,PAPIER JOURNAL ET CARTON

1988 1000tonnes

	pates de bois 1	papier journal 2	Autres 3	Total 2+3
B	481	113	:	:
DK (1)	68	:	:	272
D	1568	890	9427	10317
GR (1)	:	15	256	271
E (2)	1298	134	2423	2557
F	2183	373	5940	6313
IRL	:	:	:	33
I (3)	664	243	4744	4987
L	-	-	-	-
NL	:	:	:	2569
P	:	:	:	:
UK	421	529	3766	4295

(1)1984 (2)1985 (3)1987

CATCH BY FISHING REGION

ALL REGIONS

(000 tonnes live weight)

CAPTURES PAR REGION DE PECHE

TOUTES REGIONS

(000 tonnes poids vif)

	M 1976-80	1984	1985	1986	1987	1988	1989
België/Belgique	46	48	45	40	40	42	39
BR Deutschland	622	553	425	414	398	388	408
BRD(pre-10/90)	392	327	225	202	202	209	234
DDR(pre-10/90)	230	225	200	211	196	178	174
Danmark	1 845	1 845	1 763	1 846	1 705	1 969	1 922
Ellas	104	108	115	124	133	128	129
España	1 336	1 323	1 340	1 191	1 152	1 182	803 :
France	789	682	736	749	717	818	227 :
Ireland	107	208	228	228	248	252	. :
Italia	455	582	578	559	555	579	553
Nederland	317	371	387	368	336	. :	337
Portugal	283	298	313	403	379	338	322
United Kingdom	988	855	911	863	948	929	836
England & Wales	497	214	208	200	253	245	220
Scotland	462	609	669	630	660	648	566
N.Ireland	15	21	24	25	27	28	42
Channel Is	2	4	3	2	2	3	3
Isle of Man	11	8	7	6	6	6	5
EUR 12(pre-10/90)	**6 667**	**6 648**	**6 641**	**6 573**	**6 416**	**6 456 :**	**5 402 :**
EUR 12	**6 897**	**6 873**	**6 841**	**6 784**	**6 612**	**6 632**	**5 576**
Réunion	2	3	2	2	2	2	2
Guadeloupe	8	9	8	9	9	8	8
Martinique	4	5	5	4	3	3	3
Nouvelle Calédonie	2	4	3	5	5	4	3
Guyane française	1	2	2	3	5	5	5
Færoene (Færoe Is)	302	347	373	350	386	359	304
Island (Iceland)	1 425	1 552	1 696	1 669	1 645	1 773	1 519
Norge (Norway)	2 928	2 440	2 084	1 866	1 893	1 750	1 780
Österreich(Austria)	3	4	5	5	5	5	5
Suisse(Switzerland)	4	4	5	5	4	4	4
Suomi (Finland)	129	153	152	141	98	108	97
Sverige (Sweden)	208	280	237	212	209	241	243
Nippon (Japan)	10 801	12 789	12 112	12 752	12 508	12 758	11 965
USA	3 539	4 986	5 032	5 168	5 957	5 942	5 772
Canada	1 325	1 297	1 463	1 519	1 581	2 511	2 298
Groenland(Greenlnd)	72	86	95	103	100	120	162
St Pierre-Miquelon	8	. :	. :	24	24	14	19
CCCP (USSR)	9 407	10 616	10 548	11 297	11 214	11 489	11 450
Total	**72 384**	**86 197**	**88 635**	**94 562**	**95 831**	**101 525**	**101 294**

Tourism in EC countries
Variation in %
1980-1989

	Total nights spent	Nights spent by residents	Nights spent by non-residents	Arrivals at frontiers	Receipts for travel(1)(2)	Expenditure for travel(1)(2)	Capacity in hotels and	Capacity in supplem. accom.
B	38.9	27.1	69.7	:	44.9	4.5	5.4	25
DK	18.9	25.3	10.9	:	20.1	51.1	29.9	:
BRD	20.6	16	60.3	:	0.9	-4.3	14.2	43.8
GR	14.3	11.4	15.4	:	10	43	52.4	100.8
E	39	47.3	33.5	42.2	81.6	35.8	12.8	:
F	:	:	:	:	20.2	18.5	:	:
IRL	:	:	:	62.8	4.3	1.2	:	:
I	12.8	19.2	2.8	15.4	-2	70.5	7.8	38
L	15.4	22	14.7	:	:	:	:	:
NL	:	:	:	:	35.4	14.6	8.1	:
P	23.9	-6	58.7	136.1	50.2	9.7	41.2	44.5
UK	:	:	26.7	38.5	38.2	73.9	:	:

(1) in real prices
(2) 1980-1987