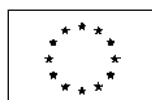


Europe in figures

Eurostat yearbook 2005

Chapter 4



EUROPEAN
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THEME
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regional statistics

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The Eurostat yearbook is easy to use

- Introductory texts for each section explain the main features and the relevance of the information presented and give an idea of what other data on the subject Eurostat has on offer.
- A glossary clarifies the statistical terms and concepts used.
- References indicate how to get more Eurostat data and analysis on the subject.
- The abbreviations and acronyms used are spelled out on the bookmark to the yearbook.

Date of data extraction

The statistical data presented in this yearbook were extracted on **29 April 2005** and represent the data availability at that time. In the cases where the data were extracted later, these are mentioned in the chapters concerned.

Order and coding of countries

The order of the EU Member States used in the Eurostat yearbook is their order of protocol. It follows the alphabetical order of the countries' short names in their respective native languages.

Generally, the countries are identified in the Eurostat yearbook 2005 by using the shortest official designation. If codes are used, these are the two-digit ISO codes, except for Greece and the United Kingdom for which EL and UK, respectively, are used.

Symbols and codes in the tables

- 'Not applicable' or 'real zero' or 'zero by default'
- 0 Less than half the final digit shown
- . Not applicable
- .. Confidential data. Data not conclusive or withheld owing to non-disclosure practice
- : Data not available
- b Break in series
- e Estimated value
- f Forecast
- i See footnote
- p Provisional value
- r Revised value
- s Eurostat estimate



The environment

197-206





Water

Eurostat data

Eurostat provides a wide range of data on:

- water resources
- water abstraction
- water supply
- wastewater treatment



Water: essential and under strain

Water is a natural resource that both in terms of quality and availability is a major concern in many regions. Water resources are limited and water quality is affected by human activities such as industrial production, household discharges, animal husbandry, arable farming, etc.

At the same time, water is essential for human life and activities. Economic development and growing populations put increasing pressure on water quantity and quality. In many places on earth, freshwater resources are being consumed

faster than nature can replenish them.

The pollution of rivers, lakes and groundwater remains a concern all over the world.

A directive to protect water

Because the quality of the water available is deteriorating and its quantity is limited, there is a need to reconsider the use of different sources of water as well as the demand on water. This has been set out in the Water Framework Directive 2000/60/EC. It states that sustainable water resource management has to be based on the principle of integrated river basin management. The directive also promotes a 'combined approach' of emission limit values and quality standards, getting the prices right and getting citizens more closely

involved in water problems.

Keeping a close eye on water

Water statistics are collected from all European countries through the 'Inland waters' section of the joint OECD/Eurostat questionnaire which is continuously adapted to the EU policy framework.

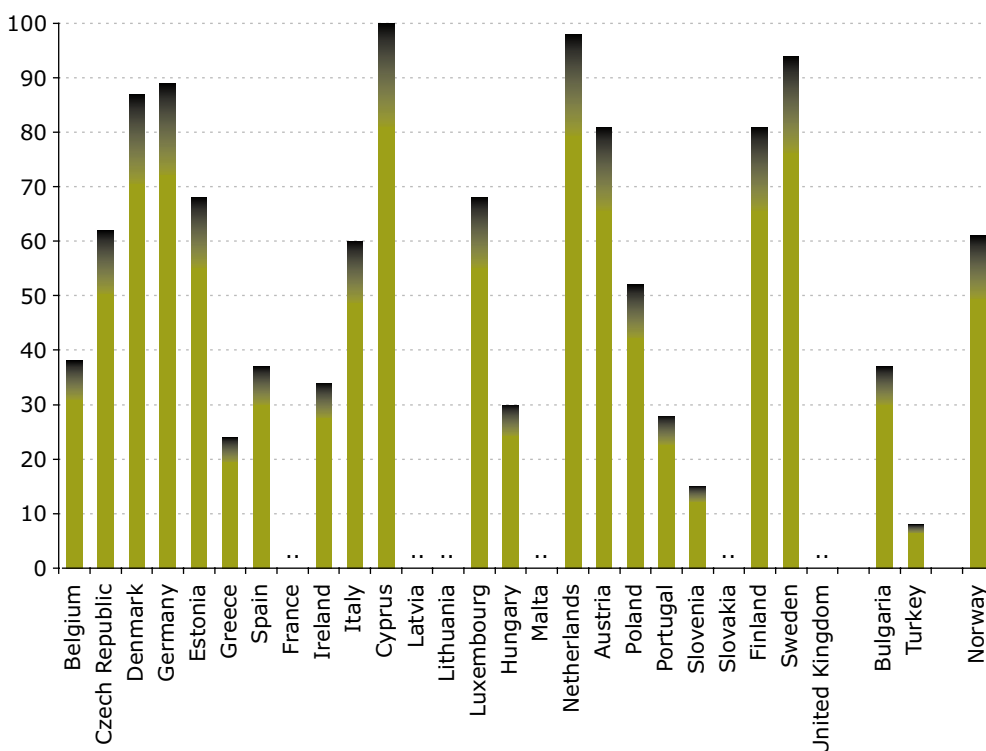
It reports on the following:

- **Freshwater resources in groundwater and surface waters:** these can be replenished by precipitation and by external inflows.

- **Water abstraction by source:** abstraction is a major pressure on resources, although a large part of the water abstracted (for domestic, industrial including energy production, or agricultural use) is returned to the environment and its water bodies, but often as wastewater with impaired quality.
- **Water use by supply category and by industrial activities.**
- **Treatment capacities of wastewater treatment plants and the share of the population connected to them:** this gives an overview of the development status of the infrastructure, in terms of quantity and quality, that is available for the protection of the environment from pollution by wastewater.
- **Sewage sludge production and disposal:** sewage sludge is an inevitable product of wastewater treatment processes; its impact on the environment depends on the methods chosen for its processing and disposal.
- **Generation and discharge of wastewater:** pollutants present in wastewater have different source profiles, and similarly the efficiency of treatment of any pollutant varies according to the method applied.

Population connected to wastewater treatment systems (at least secondary treatment)

Latest available year; in %





Waste

Eurostat data

Eurostat provides a wide range of data on:

- waste generated
- waste recycled
- waste disposed of
- municipal waste
- hazardous waste
- waste landfilling
- waste incineration

Main target in waste policy: waste prevention and recycling

The EU sustainable development strategy and the sixth environment action programme underline the relationship between the efficiency of resources and waste generation and management. The objective is to decouple the use of resources and generation of waste from the economic growth in the near future. Also, the sustainable consumption should not exceed the environmental capacity.

The strategy on waste prevention and recycling aims at improved waste-prevention initiatives, better resource efficiency and a more sustainable consumption, which would lead to a significant reduction in the overall generation of waste.

Waste prevention can be achieved through cleaner technologies, better product eco-design or more eco-efficient production and consumption patterns. Waste prevention and better recycling, focused more on materials, would enable the reduction of the environmental impacts of resource use, avoiding impacts from the extraction of raw materials and transformation of raw materials during the production processes. These actions do not only require the setting of targets but also the use of other measures, such as economic, legal and voluntary instruments.

The strategy promotes sustainable waste management, which means minimising the environmental impacts and taking into account the economic and social

considerations (costs and benefits, cost-efficient options), leading to the optimal and most efficient waste management strategy. Waste prevention is the first option in waste management, while landfilling should be avoided as much as possible.

What is the current situation?

Setting the targets in waste prevention and recycling needs to be based on reliable statistics and trends. The available data show that the waste arising is growing in general in every country. The average amount of waste generated is 3 500 kg per inhabitant per year (both municipal and industrial waste). The highest amounts of waste are generated in the mining industry, manufacturing industry and construction and demolition activities. Municipal waste is about 15 % of the total. Hazardous waste, mostly generated by the manufacturing industry,



represents 2 % of the total amount of waste. Municipal waste and construction and demolition waste are streams with an increasing trend.

Landfilling still represents the most used option for waste management in Europe, 57 % of the waste being landfilled. Recycling of certain materials and incineration (with or without energy recovery) are also used, but to a different extent in different countries.

Eurostat has released the new structural indicators on waste — municipal waste generated, municipal waste landfilled and municipal waste incinerated — based on the data provided by countries, for a complete series of data from 1995 to 2003.

Waste statistics

Up to 2005, waste statistics were compiled using data collected from all European countries through the 'Waste' section of the joint Eurostat/OECD questionnaire. It has been recog-

nised that differences between countries in methods of data collection and different interpretations of the definitions and waste categories make data comparison among the countries rather difficult.

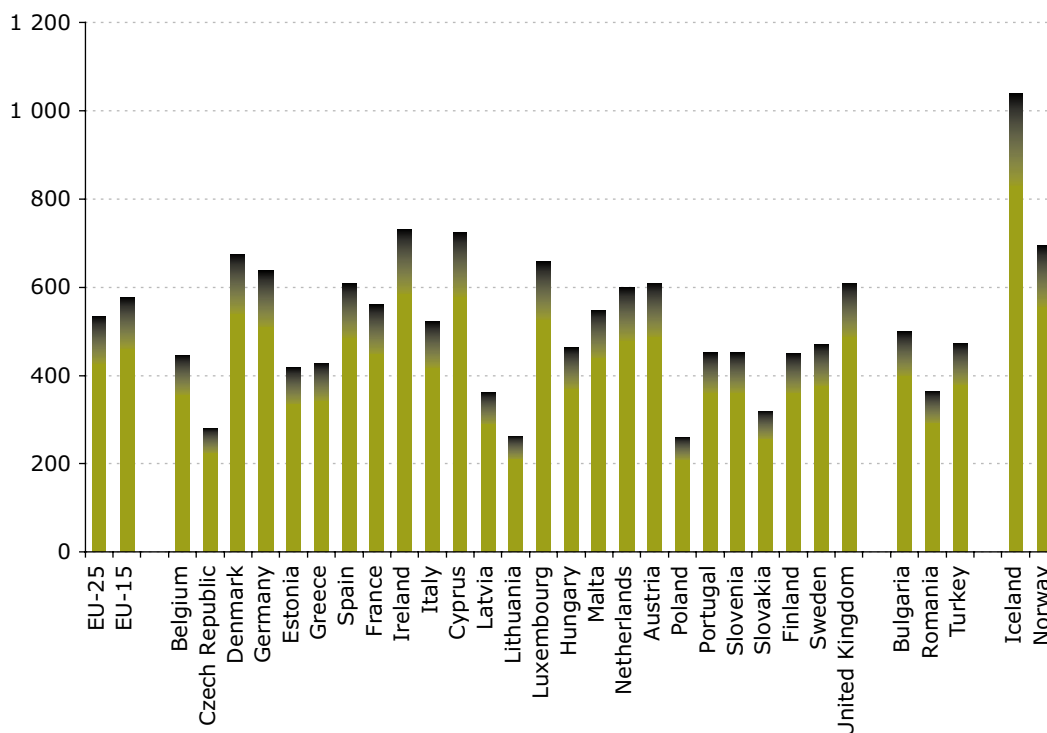
Currently, Eurostat is implementing the waste statistics regulation (Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002). Its objective is to create a framework for harmonised data collection and reporting on waste generation, recovery and disposal at the European level. The Member States are expected to provide Eurostat with the first data sets in 2006 for the reference year 2004. The first trends can be provided in 2008. Most of the difficulties and uncertainties in interpretation of the waste data will be reduced or eliminated with the implementation of the waste statistics regulation.

The graph below presents the municipal waste generation in 2003 in all Member States separately and in the EU-25 in kilograms per inhabitant per year.

4

Municipal waste generated in 2003

In kg per person per year



This indicator presents the amount of municipal waste generated. It consists of waste collected by or on behalf of municipal authorities and disposed of through the waste management system. The bulk of this waste stream is from households, though 'similar' wastes from sources such as commerce, offices and public institutions are included. For areas not covered by a municipal waste scheme an estimation has been made of the amount of waste generated. The quantity of waste generated is expressed in kg per capita per year.



Air pollution and climate change

Eurostat data

Eurostat provides a wide range of data on:

- greenhouse gas emissions
- air pollution by ozone
- air pollution by particulate matter

Climate change

The earth's average surface temperature rose by around 0.6 °C during the 20th century and there is broad consensus among the scientific community that most of the warming over the last 50 years has been due to increased concentrations of greenhouse gases in the atmosphere as a result of human activities, such as burning of fossil fuels and deforestation. The resulting increased energy in the weather system is predicted to lead to increased storms and rainfall in some areas, while others may suffer drought.

Under the 1997 Kyoto Protocol, the EU agreed to reduce its greenhouse gas emissions to 8 % below 1990 levels by 2008–12. In order to meet the 8 % target, individual targets for each of the EU Member States were set for the period 2008–12. This so-called 'burden-sharing' agreement allows several EU countries to increase emissions, provided these are offset by reductions in the rest of the EU. The EU climate change programme has been developed to identify common and coordinated policies and measures at Community level to ensure that the EU achieves its target.

For a more detailed analysis, see *Analysis of greenhouse gas emission trends and projections in Europe*, EEA, 2003.

Air pollution

The air we breathe contains gases and airborne particles released into the atmosphere by fuel combustion, industrial processes and other activities. Some of these are harmful to human health, and can result in various environmental problems, such as acidification of soil and water, damage to buildings, eutrophication of water bodies, and the formation of tropospheric ozone.



Tropospheric ozone

Tropospheric ozone is formed by the reaction of some atmospheric pollutants such as nitrogen oxides and volatile organic compounds (VOCs) under the influence of sunlight; it is harmful to human health, causing damage to the respiratory tract. Although there are natural sources of nitrogen oxides, these are minor compared with emissions resulting from human activities, such as burning of fossil fuels and biomass. Areas with heavy traffic are particularly susceptible to the formation of tropospheric ozone.

Urban areas

Because many of these emissions are linked to human activities and heavy traffic, people living in urban areas are at most risk. Tropo-

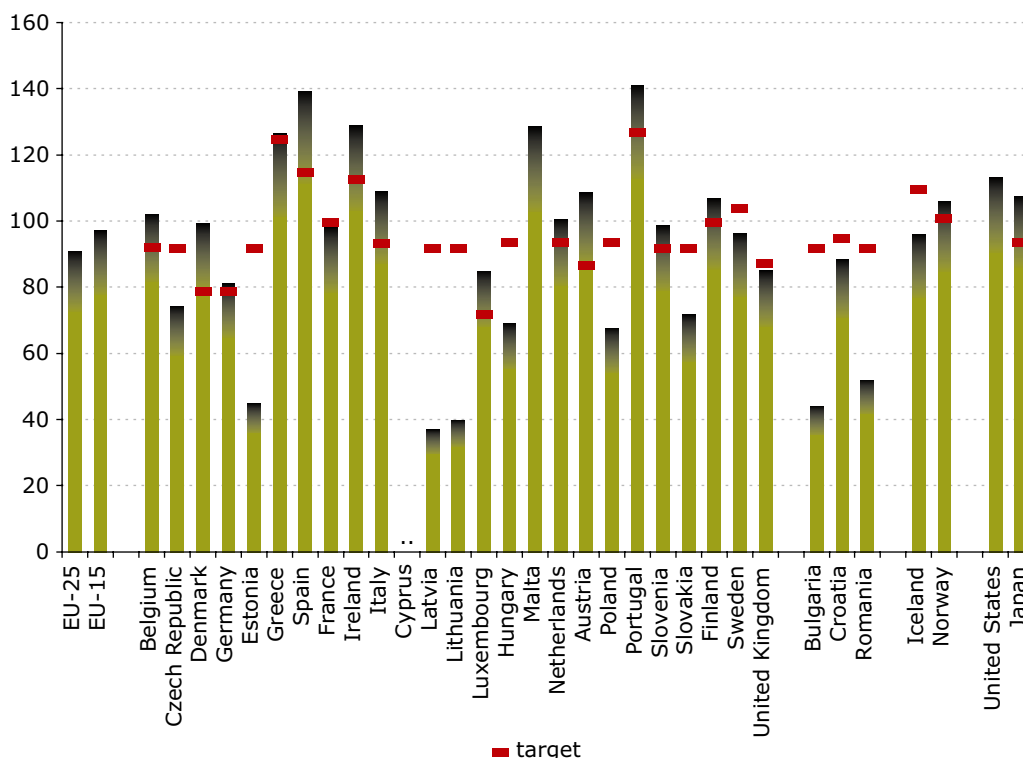
spheric ozone has already been mentioned, but human health is also at risk from high concentrations of particles, particularly those smaller than 10 µm, which penetrate deeply into the lungs, increasing the death rate in members of the population suffering from heart and lung diseases. The particles smaller than 2.5 µm are mostly soot, especially wood smoke and diesel engine exhaust. These can persist in the air for long periods and can be transported over long distances. Coarser particles (soil and mineral ash) originate mainly from mechanical processes such as mining, quarrying, and other industrial processes, as well as wear and tear of tyres and brakes in road traffic.

Data on emissions and on air quality

The European Environment Agency (EEA) and its European Topic Centre on Air and Climate Change compile data on greenhouse gas emissions, emissions of air pollutants and on air quality for the EU and candidate countries. These countries send to the EEA the same data they submit officially under various international conventions, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Long-range Transboundary Air Pollution (CLRTAP), and under various EU directives and regulations. Based on this data, the EEA produces reports and assessments, published regularly on its website (<http://www.eea.eu.int>).

Total greenhouse gas emissions in 2002

Percentage change since base year and targets according to Kyoto Protocol/ EU Council decision for 2008–12 (in CO₂ equivalents) — Indexed on actual base year = 100



Source: European Environment Agency, European Topic Centre on Air and Climate Change.

Under the Kyoto Protocol, the EU has agreed to an 8 % reduction in its greenhouse gas emissions by 2008–12, compared with the Kyoto base year. The reductions for each of the EU-15 countries have been agreed under the so-called EU burden-sharing agreement (Council Decision 2002/358/EC), which allows some countries to increase emissions, provided these are offset by reductions in other Member States. The new Member States have chosen other reduction targets and other base years, as allowed under the Kyoto Protocol. These and the 'burden-sharing' targets for 2008–12 are shown in the graph as figures for 2010 (no target for Cyprus and Malta). Emissions of the six greenhouse gases covered by the protocol are weighted by their global warming potentials (GWPs) and aggregated to give total emissions in CO₂ equivalents. The total emissions are presented as indices, with the base year equal to 100. In general, the base year is 1990 for the non-fluorinated gases (CO₂, CH₄ and N₂O), and 1995 for the fluorinated gases (HFCs, PFCs and SF₆). Data exclude emissions and removals due to land-use change and forestry (LUCF).



Environmental protection expenditure

Eurostat data

Eurostat provides a wide range of data on:

- environmental expenditure
- environmental investment
- environmental tax revenues

About encouragement, regulations and 'the polluter shall pay'

The public has become increasingly aware of the need to protect the environment against pollution. Environmental protection is now being integrated into all policy fields with the general aim of ensuring sustainable development.

To encourage firms and private households to protect the environment, governments can use regulatory measures or levy taxes directly linked to pollution. The 'polluter pays' principle is another weapon in the fight against pollution. The data on environmental protection expenditure are an indicator of the response of society to reduce pollution.

Protecting the environment benefits the economy

Environmental protection measures cost money but can also generate revenues. Measures to protect the environment are increasingly being taken on a

voluntary basis, for example, to meet the expectations of consumers or stakeholders, to increase market shares, or to improve company image. By the same token, environmental protection creates new markets for environmental goods and services, with benefits for exports and employment.



Spending on environmental protection occurs in all sectors of the economy. The public sector and industry are the sectors for which data are available for most Member States.

Statistical data on environmental protection expenditure

The legal framework for the statistical data on environmental protection expenditure by industry is Council Regulation (EC, Euratom) No 58/97 of 20 December 1996 concerning structural business statistics. The regulation provides a tool for the development in the coming years of regular data collection on the variables

and economic activities of the highest policy interest.

Total expenditure is the sum of investments and current expenditure. Effective interpretations need to take into account that:

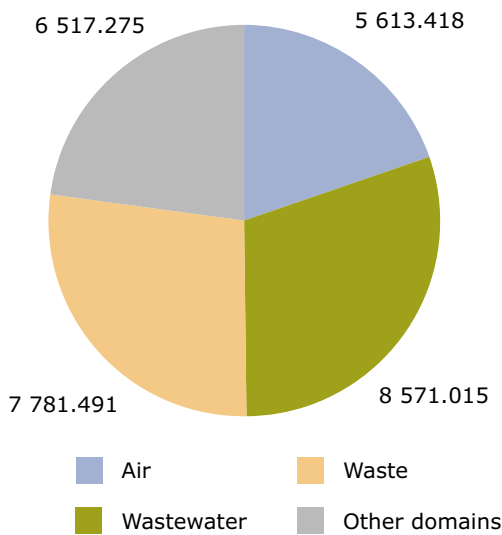
- high levels of spending in one country could, for example, be the result of new stricter policies or of long periods of no spending;
- the proportion of public sector expenditure versus industry expenditure could vary

between countries depending on the degree of privatisation of the basic environmental protection activities, i.e. waste collection, waste treatment and sewage treatment.

Environmental protection expenditure statistics are collected through the joint Eurostat/OECD questionnaire.

Environmental protection expenditure by industry in the EU-25 in 2002

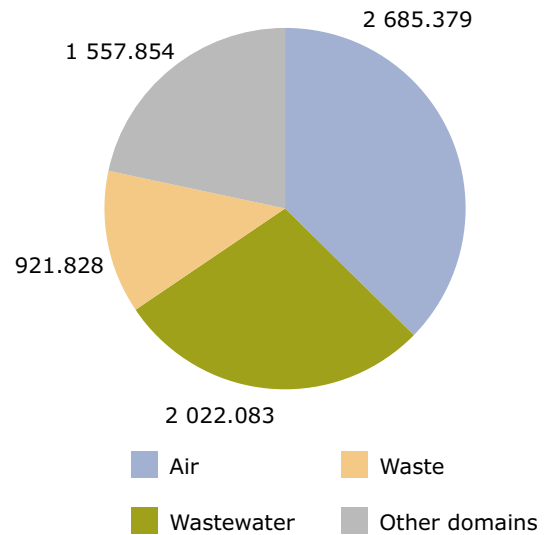
In million EUR



Estimated values.

Environmental protection investment by industry in the EU-25 in 2002

In million EUR



Estimated values.



Agriculture and the environment

Eurostat data

Eurostat provides a wide range of data on:

- sales and use of pesticides
- consumption of commercial fertilisers
- organic farming

Agriculture and the environment: a multifaceted relationship

The links between the richness of the natural environment and farming practices are complex. Farming has contributed over the centuries to creating and maintaining a variety of valuable semi-natural habitats. While many of these are maintained by extensive farming and a wide range of wild species rely on this for their survival, agricultural practices can also have an adverse impact on natural resources. Pollution of soil, water and air, fragmentation of habitats and loss of wildlife can be the result of inappropriate agricultural practices and land use. EU policies, and notably the common agricultural policy, are therefore increasingly aimed at reducing the risks of environmental degradation, while encouraging farmers to continue to play a positive role in the maintenance of the countryside and the environment.

Organic farming

Organic farming is one example of a sustainable farming system. Its importance has grown worldwide due to increased consumer awareness of organically grown products and government support for conversion. Since the start of the

implementation of the EU regulation on organic farming (Council Regulation (EEC) No 2092/91), many agricultural holdings across the EU have converted to certified organic production methods. This regulation has established procedures for the Member States to report data on organic farming to the European Commission.

Use of fertilisers

The intensive use of fertilisers can have a negative impact on the environment. Maintaining a proper balance between nutrients added to the soil and removed from the soil by crops is essential to ensure the optimal use of resources

and to limit pollution problems, such as environmental damage to surface water and groundwater particularly associated with nitrogen and phosphorus surpluses.

The Food and Agriculture Organisation (FAO) of the United Nations compiles information on commercial fertilisers. Country-level data are collected through: annual tailored questionnaires; electronic files and access to country websites; national/international publications; country visits made by FAO statisticians; and reports of FAO representatives in member nations.



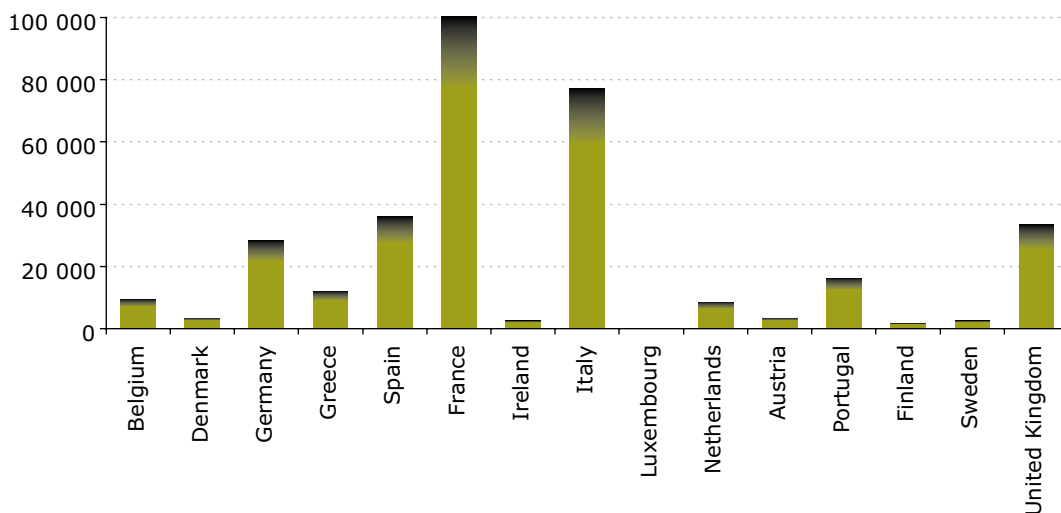
Use of pesticides

The intensive use of pesticides, i.e. plant protection products, can have a negative impact on biodiversity and increases the risk of them finding their way into drinking water and the food chain.

Eurostat collects plant protection product sales data from Member States and the European Crop Protection Association produces data on the estimated use of plant protection products for Eurostat.

Total sales of pesticides

In tonnes of active ingredient; in 2001

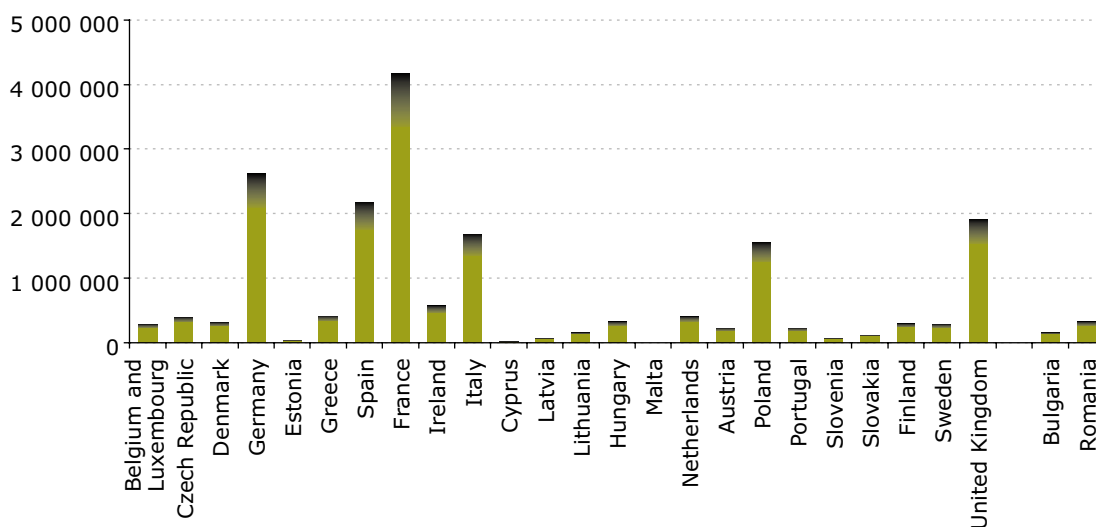


Data extracted on 16 August 2005. EU-15: 327 279.9.

Total volume of pesticides sold in the Member States. The total is the sum of fungicides, herbicides, insecticides and other pesticides.

Commercial fertiliser consumed in agriculture in 2001

(Tonnes of plant nutrient)



EU-15: 15 610 276.

Source: FAO.

Quantity of commercial fertiliser consumed in agriculture. Total of nitrogen (N), phosphate (P₂O₅) and potash (K₂O).