

Eurostat yearbook 2004

The statistical guide to Europe

Data 1992-2002

Chapter 4



EUROPEAN
COMMISSION



THEME 1
General
statistics



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The Eurostat yearbook as a combined product

The Eurostat yearbook 2004 is a combined product consisting of a book and a CD-ROM. The CD-ROM contains the complete statistical information of the Eurostat yearbook 2004, a selection of which is presented in the book.

The CD-ROM is in three languages (English, French, German). It contains the following:

- The PDF files of the paper version.
- More than 1 000 statistical tables and graphs. All data can be easily extracted from the tables. The graphs can be generated dynamically according to the wishes of the reader.
- All the statistical background information about 'In the spotlight: sustainable development'.
- Links to the Eurostat Internet site to find more information, for example on further publications or on more up-to-date data. On its website, Eurostat provides access to a range of statistical information that can be consulted online or downloaded free of charge.

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.
- 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 10 May 2004 and represent the data availability at that time.

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 2004 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.

A complete list of ISO codes can be found at:

<http://www.iso.org/iso/en/prods-services/iso3166ma/index.html>

Symbols and codes in the tables

- "Not applicable" or "real zero" or "zero by default"
- 0 Less than half of the unit used
- : not available
- p Provisional value
- e Estimated value
- s Eurostat estimate
- r Revised value
- f Forecast
- u Unreliable or uncertain data (see explanatory texts)
- :u Extremely unreliable data
- :c Confidential
- :n Not significant
- b Break in series (see explanatory texts)
- i see footnote

€ zone stands for Euro-zone. "€ zone", which is not an official symbol, is used for practical reasons.



The environment

167-178



4

Water

Eurostat data

Eurostat provides a wide range of data on:

- Water resources
- Water abstraction
- Water supply
- Wastewater treatment



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.

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.

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 qual-

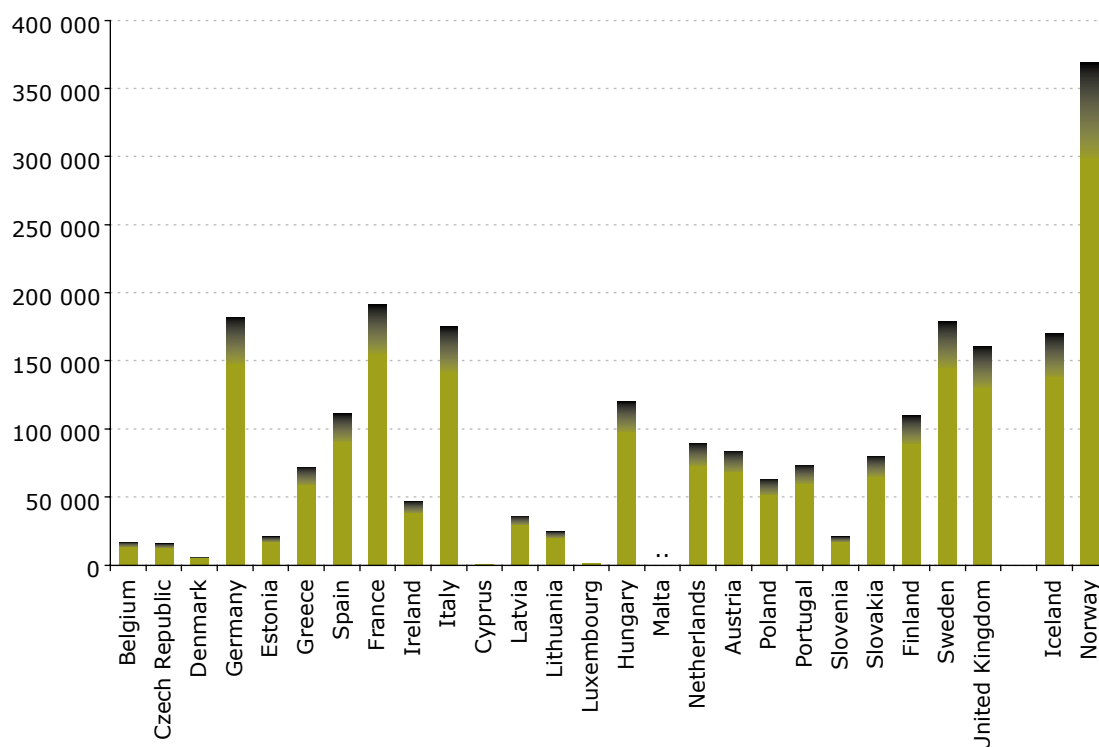
ity, that is available for the protection of the environment from pollution by wastewater.

- **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.

4

Total fresh water resources: long-term annual average

In million m³



Ireland, Luxembourg, Norway: estimated value.

The minimum period taken into account for the calculation of long term annual averages is 20 years. Actual evapotranspiration is the volume of water transported from the ground (including inland water surfaces) into the atmosphere by evaporation and by transpiration of plants. Internal flow is the total volume of river run-off and groundwater renewal generated, in natural conditions, exclusively by precipitation into a territory. The internal flow is equal to precipitation less actual evapotranspiration. Actual external inflow is the total volume of actual inflow of rivers and groundwater coming from neighbouring territories. Total fresh water resources are the total volume of water that is additionally available due to internal flow and external inflow. Total actual outflow is the total actual outflow of rivers and groundwater into the sea and into neighbouring territories.

Waste

Eurostat data

Eurostat provides a wide range of data on:

- Waste generated
- Waste treatment
- Recycling
- Hazardous waste

Decoupling waste generation from economic growth

The generation of waste represents, on the one hand, a loss of materials and energy. On the other hand, its deposition contributes to major environmental problems such as climate change and an impaired quality of surface and groundwater bodies as well as landscapes. Waste generation might also lead to the deterioration of human health (through the release into the environment of hazardous substances that some types of waste contain).

The sixth environment action programme states the objective of decoupling economic growth from the generation of waste. A significant overall reduction in the volumes of waste generated will be achieved through improved waste-prevention initiatives, better resource efficiency and a shift to more sustainable consumption patterns.

Who generates waste ...

Municipal waste constitutes approximately 15 % of total waste produced and is the most reliable indicator for making comparisons among countries.

The economic activities that are large contributors to the waste mountain are construction, agriculture, mining and the manufacturing industry. Waste streams such as construction and demolition waste, and sewage sludge (a residual product of the treatment of municipal and industrial wastewater) pose various types

of management problems and environmental impacts.

... and what to do with it?

Landfilling, waste incineration (with or without energy recovery) and recycling are the most important treatment methods applied to municipal waste. Recycling is considered to be one of the most beneficial for the environment and is supported by several directives and policy measures in the EU.

Continuous improvement of statistics on waste

Waste statistics are collected from all European countries through the 'Waste' section of the joint Eurostat/OECD questionnaire.

It is generally recognised that differences in methods of data production among countries

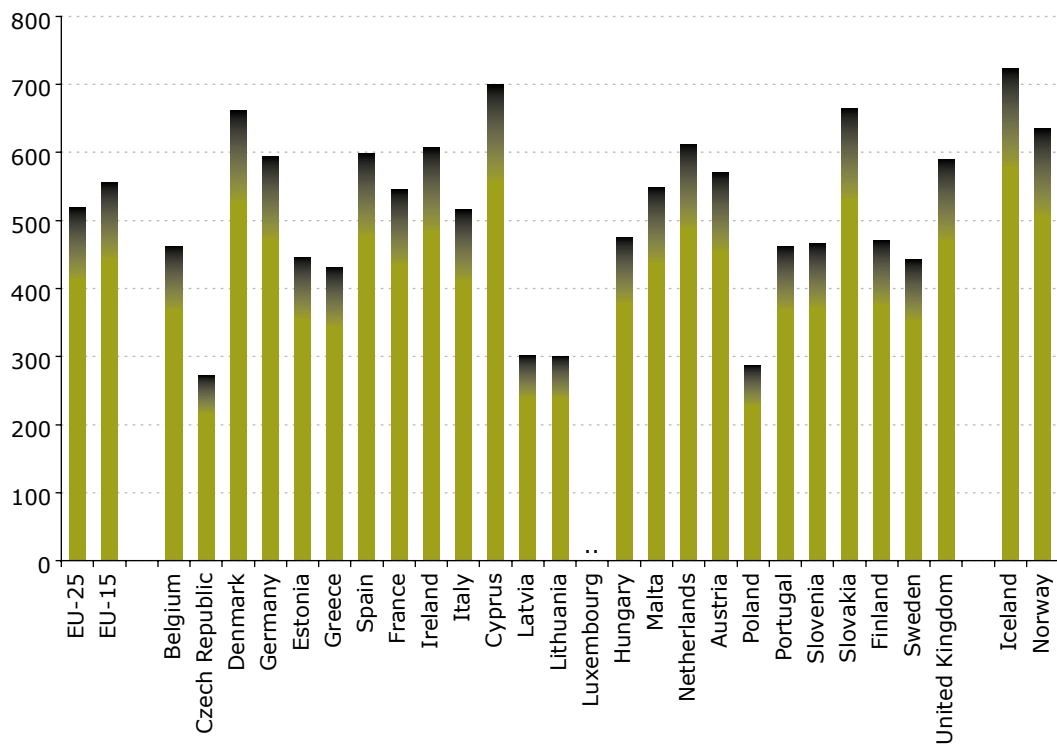


plus the variances in interpretation of definitions and/or waste categories make comparison of data among countries rather difficult. It is expected that the recently adopted waste statistics regulation will, when fully implemented, significantly improve data availability and comparability on waste generation and treatment.

4

Municipal waste collected in 2001

In kg per inhabitant per year



EU-25, EU-15, Belgium, Austria, Norway: estimated value

This indicator presents the amount 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. The quantity collected 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

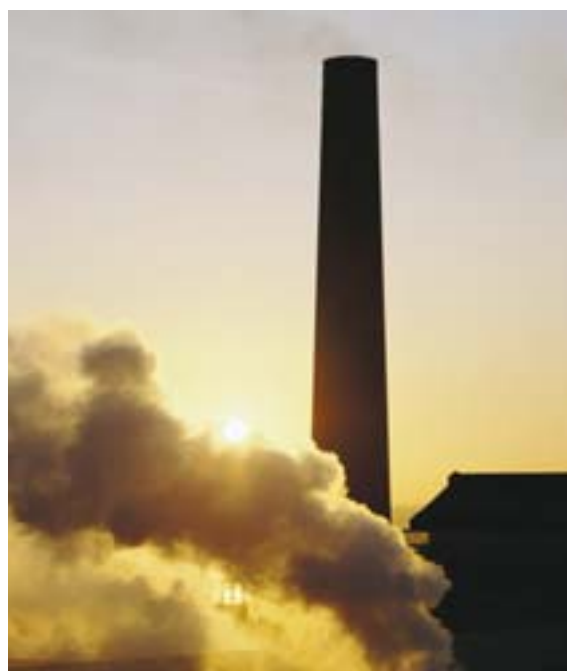
The earth's average surface temperature rose by around 0.6 °C during the 20th century and there is broad consensus among the scientific community that most of the warming over the last 50 years has been due to increased concentrations of greenhouse gases in the atmosphere, as a result of human activities, 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 liv-

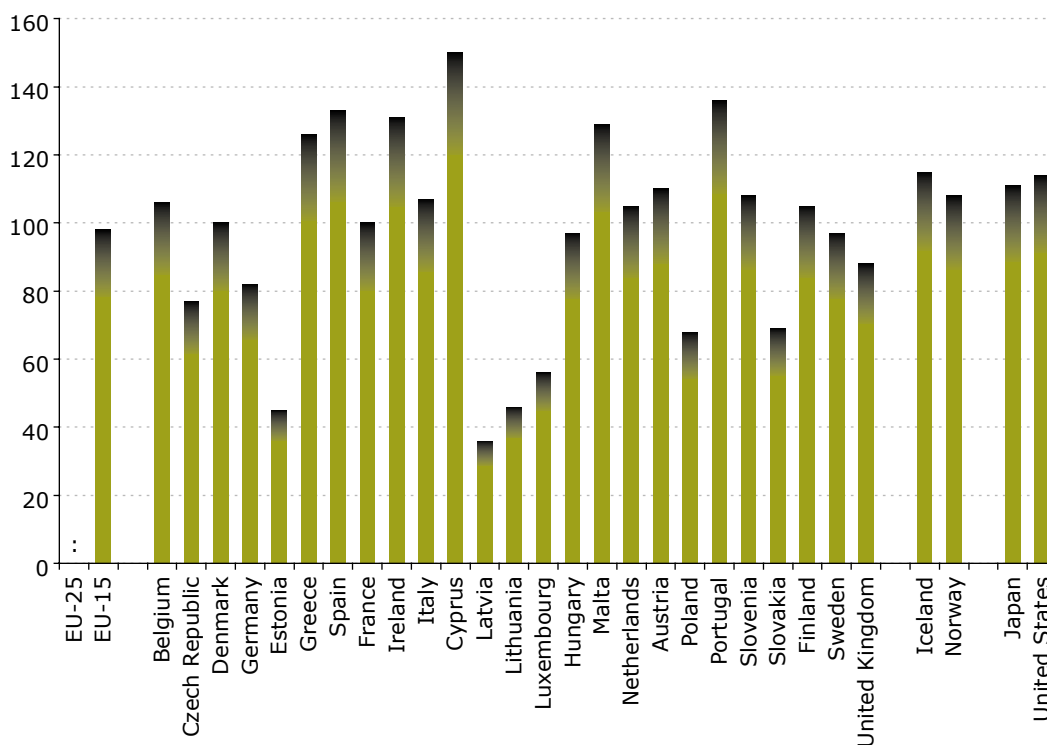
ing in urban areas are at most risk. Tropospheric ozone has already been mentioned, but human health is also at risk from high concentrations of particles, particularly those smaller than 10 µm, which penetrate deeply into the lungs, increasing the death rate in members of the population suffering from 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>).

Greenhouse gas emissions in 2001

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 to the base year 1990. The reductions for each of the EU-15 countries have been agreed under the so-called EU burden-sharing agreement, which allows some countries to increase emissions, provided these are offset by reductions in other Member States. The ACCs have chosen other reduction targets and other base years, as allowed under the protocol. These and the 'burden sharing' targets for 2008–12 are shown in the table as figures for 2010. 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 = 100.

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:

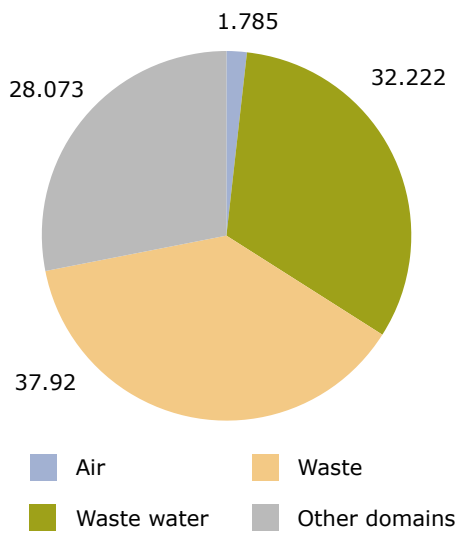
- high levels of spending in one country could, for example, be the result of new stricter policies or of long periods of no spending;
- the proportion of public sector expenditure versus industry expenditure could vary between countries depending on the degree of

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 the public sector in the EU-15

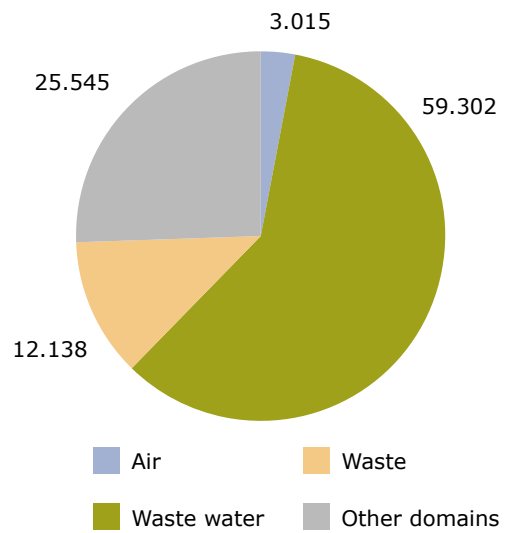
Latest available year



Estimated values.

Environmental protection investment by the public sector in the EU-15

Latest available year



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 sup-



port 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.

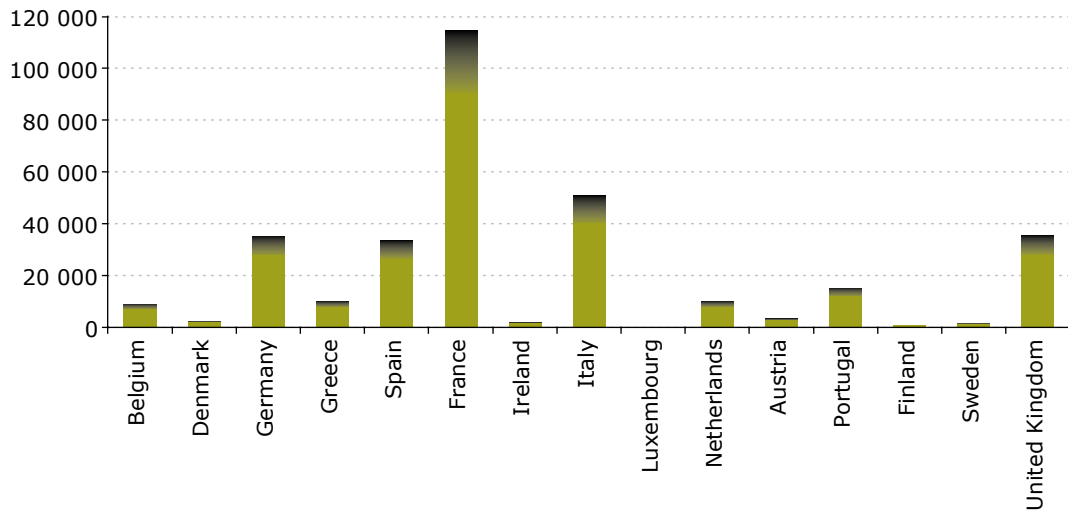
Use of pesticides

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.

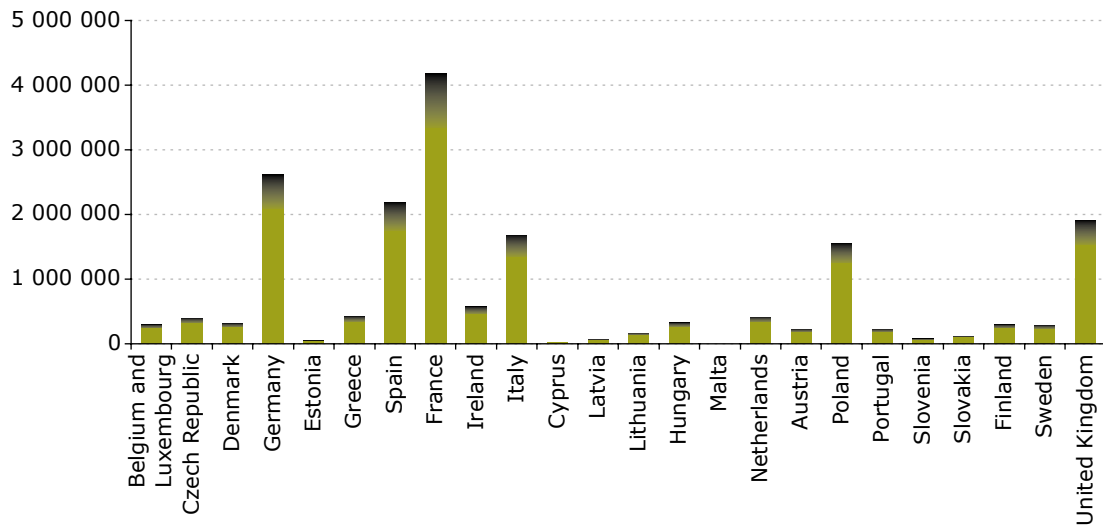
Eurostat collects plant protection product sales data from Member States and the European Crop Protection Association produces data on the estimated use of plant protection products for Eurostat.

Total sales of pesticides in 1999
In tonnes of active ingredient



Total sales of pesticides are the sum of all sold fungicides, insecticides and other pesticides.

Commercial fertilizer consumed in agriculture in 1999
Total of nitrogen (N), phosphate (P2O5) and potash (K2O);
metric tonnes of plant nutrient



Source: FAO