

Water Scarcity and Drought in the European Union

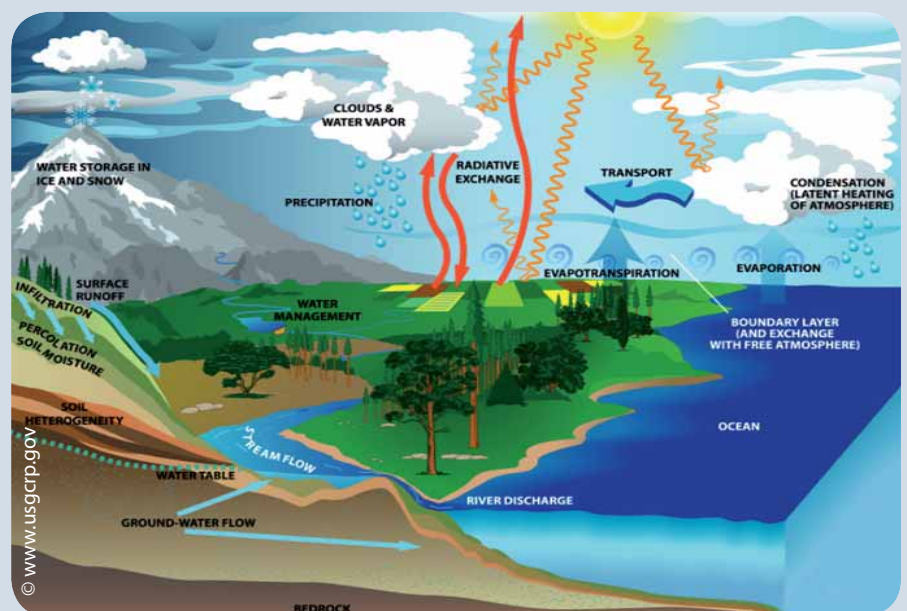
WATER

Water is life, sustaining ecosystems and regulating our climate. But it's a finite resource, and less than 1% of the world's fresh water is accessible for direct human use. Europe needs to learn the value of one of its most precious yet scarce resources.

Competition for water poses a growing risk to the economy, communities and the ecosystems they rely on. If climate change keeps raising average temperatures across Europe, water is expected to become even scarcer in many areas, so it is vital to find solutions to protect this resource.

Drought refers to a temporary decrease in water availability, for example, when it doesn't rain over a long period of time. *Water scarcity*, on the other hand, occurs when demand for water exceeds the available sustainable resources. This is something we must learn to prevent.

An adequate supply of good-quality water is a pre-requisite for economic and social progress, so we need to do two things: we must learn to save water, and also to manage our available resources more efficiently.



water



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environment

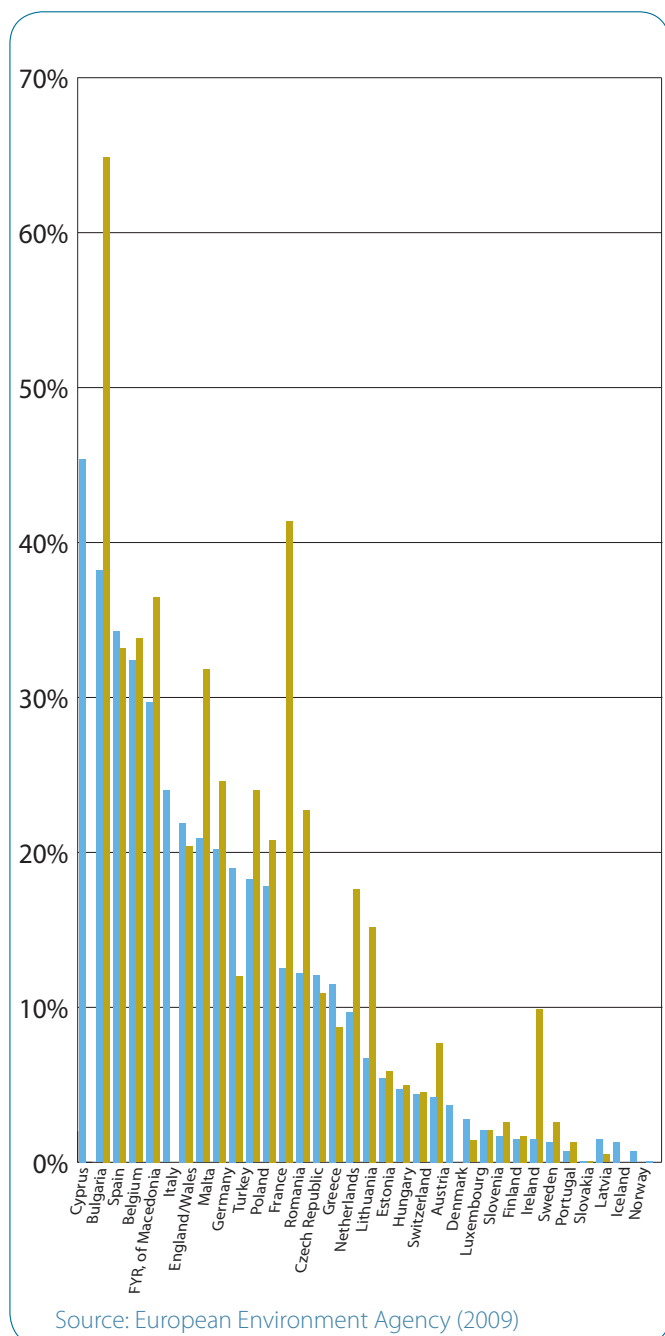
Fact 1: Europe is using up its essential water resources

Europe is not an arid continent, but water supplies are now a concern for almost half of the EU population.

The graph below shows the situation in different European countries. The water exploitation index (WEI) indicates the amount of water abstracted each year as a proportion of total long-term freshwater resources. It is an indicator of the pressure or stress on freshwater resources. A WEI above 20% implies that a water resource is under stress, and values above 40% indicate severe water stress and clearly unsustainable use of the water resource.

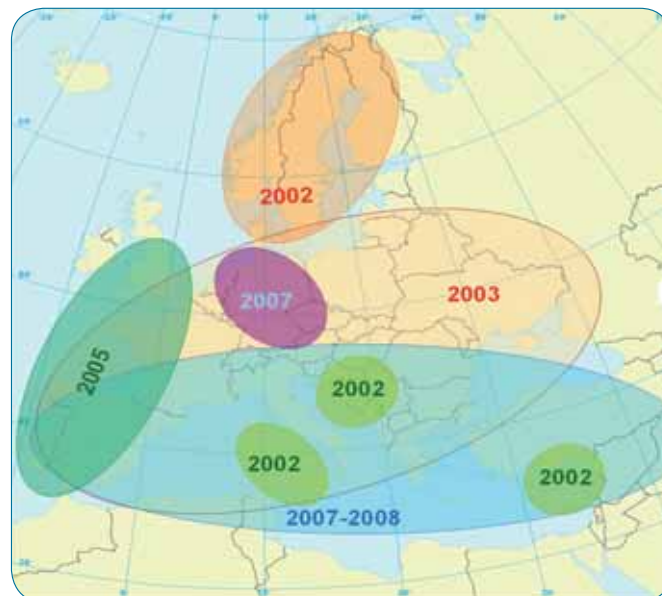
Cyprus, Bulgaria, Belgium, Spain, Italy and Malta are currently using up 20% or more of their long-term supplies every year. Cyprus, which has been suffering severe drought, consumed much more than 40% of its renewable supplies.

Total abstraction per year/ Long-term renewable resource



Europe's geography and climate mean that water distribution is uneven in the EU, a situation made worse by human activity. In southern Europe, for instance, tourist development has increased demand for water, resulting in desertification and salt-water intrusion to aquifers located in some coastal freshwater zones. Water scarcity is most acute in the south, but by no means limited to these areas: most Member States have suffered episodes of drought since 1976, and many now report frequent water scarcity problems and over-exploited aquifers.

Main drought events in Europe



Source: ETCLUSI (Adapted from Tallaksen, 2007)

Fact 2: The problem is growing

- Water scarcity is an increasingly frequent and worrying phenomenon that affects at least 11% of the European population and 17% of EU territory.
- Since 1980, the number of droughts in Europe has increased, and they have become more severe, costing an estimated €100 billion over the past 30 years. One of the worst droughts occurred in 2003, when one-third of EU territory and over 100 million people were affected. Between 1976 and 2006, the number of people and areas hit by drought rose by almost 20%, and the yearly average cost has quadrupled.
- Demand for water continues to rise across Europe, putting a strain on our resources.
- It is estimated that some 20-40% of Europe's available water is being wasted (leakages in the supply system, no water saving technologies installed, too much unnecessary irrigation, dripping taps etc.).
- In a 'business as usual' scenario, water consumption by the public, industry and agriculture would increase by 16% by 2030.
- Climate change will add to the problems of water scarcity and droughts.

Fact 3: The European Union is taking action

A variety of approaches are being used at EU level to preserve Europe's waters. Legislation, market instruments, monitoring, research and awareness-raising can all make a contribution.

In 2000, the EU introduced the **Water Framework Directive**, the most ambitious and comprehensive piece of EU legislation ever approved in water policy. Taking a genuinely European approach, it establishes a management system based on natural river basin districts rather than regional and national boundaries. The aim is to bring together all water managers – from governments to local communities – the public and all affected sectors to safeguard ground and surface waters, and achieve good ecological status by 2015.

In 2007, the EU put forward a **Communication addressing the challenge of water scarcity and droughts**. The Communication identified seven policy initiatives that had to be addressed if Europe was to move towards a water-efficient and water-saving economy. Each year a report is presented on the annual progress towards the implementation of the set orientations.

EU policy related to water scarcity and droughts is based on the principle of a **'water hierarchy'**. This means that additional water supply infrastructures such as water transfers or desalination plants should be considered only when all demand-side measures, like water-saving, water efficiency improvements and water-pricing, have been exhausted.

A 2009 EU policy paper on adapting to climate change highlights the need for further measures to enhance water efficiency and to increase resilience to climate change. This approach reinforces the consistency of measures taken at both EU and national level, and sets the scene for further European action.

Member States need to focus on prevention in dealing with the threat of drought and water scarcity. The EU needs consolidated **data and drought indicators**. A prototype **European Drought Observatory** for forecasting and monitoring will publish real-time information online. The Commission is also launching a number of related projects as well as research initiatives under the Seventh Framework Programme for Research and Development.

The policy on water scarcity and droughts will be reviewed by 2012. This review, together with the assessment of the Member States' plans for managing Europe's river basins, as required by the Water Framework Directive, and the review of the vulnerability of environmental resources such as water, biodiversity and soil to climate impacts and man-made pressures will contribute to the **Blueprint for Europe's Waters** planned for 2012. The Blueprint will foster a move towards prevention and preparedness with a view to ensuring a sustainable balance between water demand and the supply of clean water, taking into account the needs of both human activities and of natural ecosystems.

Fact 4: Member States are acting

You may have noticed the water tariff system changing in your country. This is one of many measures being introduced to fight water scarcity. Measures to encourage more sustainable use include:

- Market-based instruments to ensure that the 'user pays' principle becomes the rule. As tariffs may increase people's water bills, in most countries they are being applied gradually. Alternative measures to encourage the efficient use of water include block tariffs, penalties for excessive consumption and discounts for water saving.
- Targeted use of funding to encourage water saving, such as for improved land-use planning to prevent new developments overexploiting water resources, and promotion of sustainable agriculture (crops using less water, more efficient irrigation etc).

Did you know...?

It takes around 16 000 litres of water to produce 1kg of beef, 140 litres of water for 1 cup of coffee, and 900 litres of water for 1kg of maize.

Every year, some 247 000 million m³ are extracted from ground and surface water sources (streams, lakes and rivers) in the EU.

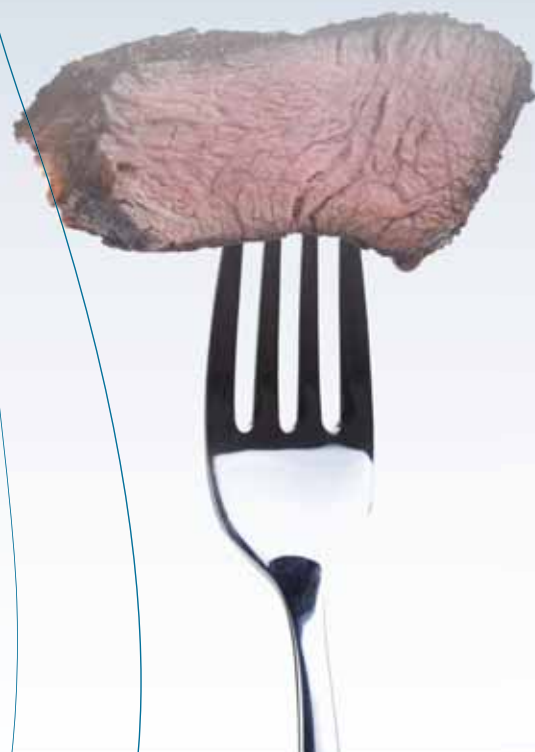
Not all of this water is consumed. For example, the water abstracted for cooling purposes in electricity generation is nearly all returned to a river, a bit warmer than it was originally.

Contrastingly, most of that abstracted for agriculture is consumed. This means that it is not returned to the river because it is used for irrigation so it is either evaporating or is being bound up in the crops.

The largest proportion of the abstracted water (44%) goes to the energy production sector for cooling processes.

Agriculture and food production also require their share, using 24% of abstracted supplies, but this can go up to 80% in some southern regions. Irrigation consumes a lot of water, but many high-value farming activities are relying on a small proportion of irrigated land: in Spain, for example, more than 60% of the total value of the country's agricultural output comes from the 14% of agricultural land that is irrigated.

17% of the abstracted water is used for public water supply (including households, the public sector and small businesses) and 15% for industry. Half of the water taken for manufacturing is used in the chemicals sector and petrol refineries, with basic metals, paper and food processing industries taking up most of the rest.



Recent studies have found that much more could be done to cut water use in the EU.

- Europe could cut its overall consumption by some 40%. A lot of water is wasted.
- New technologies, improved irrigation management, drought-resistant crops and water recycling in factories could save up to 40% in the agricultural and industrial sectors.
- Some cities could save 50% of their water by repairing leaks in public supply networks.
- In the home, water-saving devices and more efficient household appliances could make a big difference, coupled with a more careful approach by consumers.
- Extending the Eco-design Directive to domestic water-saving devices could reduce total EU public water consumption by 19.6%.

- Improving drought risk management through comprehensive plans with mapping and warning systems.
- After exhausting all water-saving measures, several Member States may have had to develop alternative water supply infrastructures to tackle water scarcity problems in river basins, such as extending desalination plants or importing fresh water.
- Water-efficient technologies: encouraging research and reducing water consumption and wastage.
- Fostering a water-saving culture: information, education and training to raise awareness among both businesses and consumers.
- Creating a balance between developing a competitive tourist industry and respecting environmental issues. This requires better environmental management by tourism companies, coupled with higher awareness among visitors themselves. The EU offers funding to support green tourism networks, and is examining core indicators for sustainable tourism development.

Fact 5: You can help too!

When it comes to saving water, there are lots of things we can do around the home, or as consumers, to save on water consumption and conserve supplies. Here are a few ideas:

- About one-third of water for domestic use goes down the toilet, literally. Use the short flush whenever possible, or reduce the toilet cistern capacity.
- Collect rainwater for the garden and for washing the car. This can save up to 50% of household water.
- Take showers rather than baths, and do not leave the water running when brushing teeth or cleaning dishes.
- Don't fill your kettle – just boil the amount of water you need.
- Check taps and pipes for drips and leaks, and fit spray taps that reduce the flow.
- Use the economy cycle and wait for a full load of clothes in the washing machine or dishes in the dish washer.
- Use a bucket when cleaning outdoors instead of a hosepipe.
- In your garden, use watering cans or trigger nozzles on hoses to irrigate only those areas that need it.
- Use bottled water sparingly: in Europe, tap water is safe to drink.
- On holiday, reduce hotel laundry by using towels and sheets several times.

Further information:

European Commission's water scarcity & droughts page:
http://ec.europa.eu/environment/water/quantity/scarcity_en.htm

European Drought Observatory:
<http://edo.jrc.ec.europa.eu/php/index.php?action=view&id=2>

European Environment Agency:
<http://www.eea.europa.eu/themes/water>

Sources for the "Did you know..." section:
<http://www.waterfootprint.org/?page=files/home>
<http://www.eea.europa.eu/articles/the-water-we-eat>
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0228:FIN:EN:PDF>
http://ec.europa.eu/environment/water/quantity/pdf/exec_summary.pdf

