

# EuroGeoSurveys

## Groundwater Resources Policy Sector (GRPS)

Research, Information and Knowledge for Sustainable Groundwater Management in the European Union

### THE ROLE OF GROUNDWATER IN EUROPE

#### Fresh water is a finite resource

Although 70% of the Earth's surface is covered by water most of it is the salt water of seas and oceans. Only 2.5% of all water on Earth is fresh water, most of which exists as glaciers and permanent snowfields, leaving only 0.26% of all fresh water available to support mankind. More than 90% of this small volume is in the form of groundwater. The rapidly growing human population and its activities such as non-controlled water use, industrial and agricultural pollution and inadequate sanitation are serious threats to sustaining this small volume of fresh water.

#### Groundwater

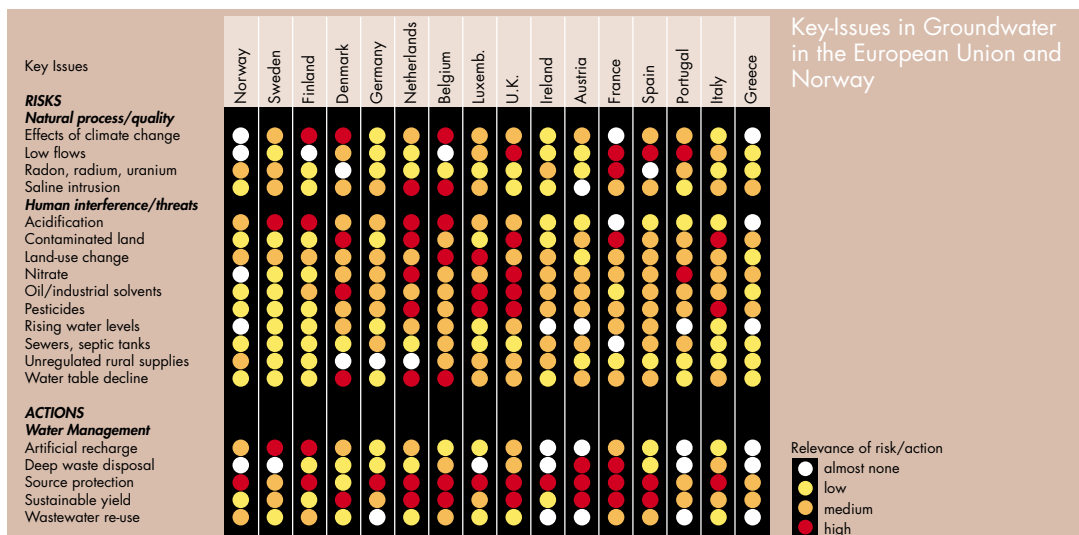
Groundwater occurs beneath the land surface. It is that part of all water present below the water table in soils and geological formations that are fully saturated. It can be collected by wells, tunnels or drainage galleries and flows naturally to the Earth's surface through seepages or discharges directly to the sea. Most groundwater starts out as rain which sinks into the ground and gathers within permeable rocks which are called aquifers ("water-bearers").

#### Why is groundwater so important?

Most groundwater is high quality drinking water which has been naturally filtered by the rock pores through which it moves. Groundwater is relatively cheap to develop and is about 20-25 times more abundant than surface water. In many countries of the EU groundwater is the main source for drinking water and agricultural and industrial production. All bottled drinking water in the EU is groundwater.

#### Groundwater is a vulnerable resource

While water stays in rivers for only days or weeks, the flow of groundwater is very slow and can take tens to thousands of years to cover very small distances. This means that groundwater responds very slowly to changes. If groundwater is pumped out too quickly the aquifer may not be able to "refill" until the next human generation. For the same reason, water which leaks from pipes into the ground may also be lost to the present human generation. Groundwater is vulnerable to long-lasting pollution by the infiltration of industrial, agricultural or domestic wastes and sewage. This pollution is difficult and costly to remedy.



## THE GROUNDWATER POLICY SECTOR OF EUROGEOSURVEYS (GRPS)

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The Groundwater Policy Sector of EuroGeoSurveys (GRPS) aims to apply members' combined research capabilities, information and knowledge of the subsurface of Europe and its groundwater resources in order to strengthen EU policy in the sustainable management and use of these resources, focusing on issues such as:

- characterising the European groundwater resource baseline as an aid to monitoring changes
- helping to define groundwater properties during implementation of the EU Water Framework Directive and Annex 5
- diffuse pollution of groundwater
- thermal and mineral waters
- exploration for groundwater resources
- promotion of the establishment of groundwater monitoring networks in the member states
- promotion of transfer of European know-how to third countries

## ACHIEVEMENTS

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During 1997 – 1999 the group assembled an indicative matrix of key groundwater issues in the EU countries and Norway in terms of 14 risks and 5 water management actions. It also contributed to the 1999 European Environment Agency Monograph “Groundwater quality and quantity in Europe.”

## FUTURE PLANS

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Future plans are focused on providing assistance towards the European Union in:

- Assembling the technical databases and advice necessary to support the formulation of policy or for solving problems in the fields of:
  - the sustainable development of groundwater
  - land-use planning, conservation and management of the environment related to groundwater
  - infrastructure development, coastal zone management and prediction of geohazards related to groundwater
- Suggesting new groundwater-based proposals for development cooperation relevant to the European Union agenda.

## FOR MORE INFORMATION

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If you would like to know more about the activities of EuroGeoSurveys in this area, please contact the Groundwater Resources Policy Sector Head:

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