



## Policies to Manage Agricultural Groundwater Use

### DENMARK

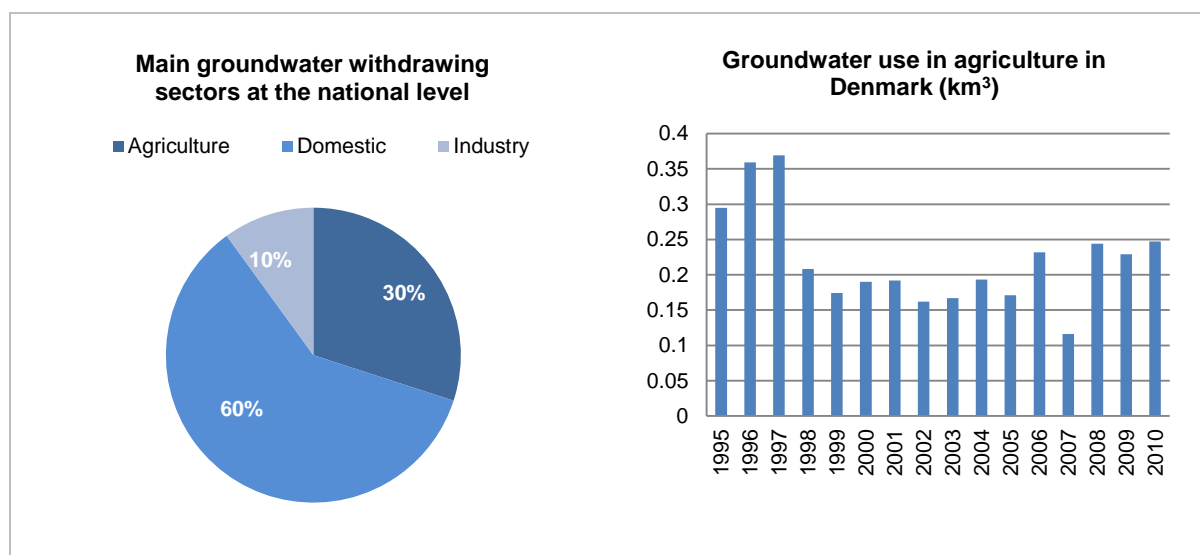
Denmark limited irrigated area is solely depending on groundwater. Groundwater use is managed by regulatory and economic approaches, including a pumping tax. Climate change projections suggest that the country will face drier and hotter condition, which may call on a more significant reliance on groundwater irrigation.

#### 1. Main national governmental agency responsible for quantitative management of groundwater

Institution	Role
The Danish Nature Agency	Legislation, Monitoring, Planning.

#### 2. Status and use of groundwater resources

- Annual groundwater use is estimated 0.75 km<sup>3</sup> 2011.
- Groundwater irrigation area 201 480 ha in 2010.
- Groundwater withdrawals for irrigation 0.247km<sup>3</sup> in 2010.



### 3. Inventory of national policies affecting agricultural groundwater use

#### Recent groundwater management reforms

Reforms	Year	Scope and objective	Degree of implementation
Danish Water Supply Act.	2013	The purpose of the act is to ensure that use and protection of groundwater happens under a coordinated planning, assessment of an appropriate use of the water resources and an extension of the existing water supply with the aim of achieving an appropriate use of the water resources. Lastly, the act establishes drinking water quality standards for the protection of human health.	Complete
River basin Management Plans.	2014	Implements the Water Framework Directive (2000/60/EC).	Partial

#### Core groundwater management approaches at national level

Groundwater ownership ► Private and public

#### Main types of instruments used to manage groundwater use in agriculture

##### Regulatory approaches

###### Groundwater management plans

► Mandated

###### Coordination with surface water management

► Systematic

###### Mandated metering or monitoring system for groundwater

► Mandated metering for agricultural and other users, these measures are enforced.

##### Economic instrument

###### Economic instruments to regulate quantity: pricing

There are national taxes on pumped water, which account for environmental externalities.

### 4. Agricultural groundwater use at the regional level

#### Western Jutland

Agro-climatic zone	Climate change prospective (2030-2050)	Surface irrigation
Temperate	Wetter, hotter, more frequent droughts	Surface water is available and used for irrigation. Surface water is rarely used.

#### Characteristics of the main aquifers in the regional unit

Mainly quaternary and pre-quaternary sand and gravel deposits.

Type of aquifer	Geological type	Groundwater quality concerns
Mixed	Sand and gravel	Limited

	Total number	Increase in the past 10 years
Estimated number of agricultural wells	10 900 (2011)	Slow

#### Other uses of groundwater

	Minor	Major	Diminishing	Steady	Increasing
Domestic		✓	✓		
Industry	✓		✓		

## Main types of instruments used to manage groundwater use in agriculture

### Regulatory approaches

#### Regulations on wells

- ▶ Approval of new well
  - ✓ Accounting for well space restriction
  - ✓ With environmental impact assessment
- ▶ Groundwater withdrawal restrictions

## 5. Bibliography

### Institutional websites

- [www.nst.dk](http://www.nst.dk)

### Official reports

- [www.geus.dk/DK/publications/groundwater\\_monitoring/Sider/1989\\_2012.aspx](http://www.geus.dk/DK/publications/groundwater_monitoring/Sider/1989_2012.aspx)

### Additional sources

- [www.geus.dk](http://www.geus.dk); [www.vfl.dk](http://www.vfl.dk)
- [www.geus.dk/DK/publications/groundwater\\_monitoring/Sider/1989\\_2012.aspx](http://www.geus.dk/DK/publications/groundwater_monitoring/Sider/1989_2012.aspx)
- [www.geus.dk/DK/publications/groundwater\\_monitoring/Sider/1989\\_2012.aspx](http://www.geus.dk/DK/publications/groundwater_monitoring/Sider/1989_2012.aspx) (in Danish with an English summary)

This country profile was compiled by the OECD Secretariat and reflects information obtained in a 2014 OECD questionnaire on groundwater use in agriculture. Further information and analysis can be found in OECD (2015), *Drying Wells, Rising Stakes: Towards Sustainable Agricultural Groundwater Use*, OECD Studies on Water, OECD Publishing. The countries profiles for 16 countries of OECD are available for download at: [www.oecd.org/tad/sustainable-agriculture/groundwater-use.htm](http://www.oecd.org/tad/sustainable-agriculture/groundwater-use.htm)