Policies to Manage Agricultural Groundwater Use

CZECH REPUBLIC

Groundwater is primarily used for domestic purposes in the Czech Republic. Agriculture groundwater use is managed via regulatory and economic instruments, supported by other conservation policies.

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

<table>
<thead>
<tr>
<th>Institution</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>River basin management (Povodí Labe, Povodí Vltava, Povodí Ohře, Povodí Odry, Povodí Moravy, s.p.)</td>
<td>Management and maintenance of river basins.</td>
</tr>
<tr>
<td>Small water courses management (Lesy České republiky, s.p.)</td>
<td>Management and maintenance of small water courses.</td>
</tr>
<tr>
<td>Water and sanitation (Vodovody a kanalizace)</td>
<td>Development plan of water and sanitation, regulations, customer protection, information for public; realization of the state policy in water, sanitation and flood damage to the water infrastructure.</td>
</tr>
</tbody>
</table>

2. Status and use of groundwater resources

- Total groundwater resource: 1.59 km$^3$ in 2010.
- Annual groundwater use is estimated to 0.38 km$^3$ in 2012.
- Groundwater irrigation area: 1156 ha in 2010.
- Total irrigation area: 38 530 ha in 2007.
- Groundwater withdrawals for irrigation: 0.011 km$^3$ in 2010.
### 3. Inventory of national policies affecting agricultural groundwater use

#### Recent groundwater management reforms national and regional level

<table>
<thead>
<tr>
<th>Reforms at the national level</th>
<th>Year</th>
<th>Scope and objective</th>
<th>Degree of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convention on the protection and use of trans boundary watercourses and international lakes.</td>
<td>1996</td>
<td>Trans boundary agenda.</td>
<td>Complete</td>
</tr>
<tr>
<td>The development plan for water supply and sewerage systems the Czech Republic.</td>
<td>2001</td>
<td>The basic strategic document.</td>
<td>Partial</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reforms at the regional level</th>
<th>Year</th>
<th>Scope and objective</th>
<th>Degree of implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The regional development plans for water supply and sewerage systems</td>
<td>2004</td>
<td>Regional water using policy.</td>
<td>Partial</td>
</tr>
<tr>
<td>Plans of river basins</td>
<td>2009</td>
<td>8 plans, 1st step finished, now preparation of the 2nd step for the period 2016 - 2021 plus implementation of the Directive 2007/60/ES about flood risk evaluation and management.</td>
<td>Partial</td>
</tr>
</tbody>
</table>

### Core groundwater management approaches at national level

- Groundwater entitlement characteristics
  - Temporary
  - Individuals, collective bodies and companies
  - Nobody is the owner, but the landowner and land user, who have permission for water withdrawal, can use water in the area.

#### Main groundwater withdrawing sectors at the national level

- Agriculture: 82%
- Domestic: 10%
- Industry: 4%
- Energy: 3%
- Other: 1%

#### Groundwater use in agriculture in the Czech Republic (km³)

- 1992: 0.006 km³
- 1993: 0.008 km³
- 1994: 0.009 km³
- 1995: 0.007 km³
- 1996: 0.008 km³
- 1997: 0.006 km³
- 1998: 0.007 km³
- 1999: 0.005 km³
- 2000: 0.004 km³
- 2001: 0.003 km³
- 2002: 0.002 km³
- 2003: 0.001 km³
- 2004: 0.0005 km³
- 2005: 0.0005 km³
- 2006: 0.0005 km³
- 2007: 0.0005 km³
- 2008: 0.0005 km³
- 2009: 0.0005 km³
- 2010: 0.0005 km³
## Main types of instruments used to manage groundwater use in agriculture

<table>
<thead>
<tr>
<th>Regulatory approaches</th>
<th>Economic instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Groundwater management plans</strong></td>
<td><strong>Economic instruments to regulate quantity: pricing</strong></td>
</tr>
<tr>
<td>► Mandated</td>
<td>► There charges are on pumped water in agriculture and other. They based on cost recovery.</td>
</tr>
<tr>
<td><strong>Coordination with surface water management</strong></td>
<td>The price is done each year by a decree of the Ministry of Finance; it is adjusted according to the regional and local costs.</td>
</tr>
<tr>
<td>► Systematic</td>
<td></td>
</tr>
<tr>
<td><strong>Regulations on wells</strong></td>
<td><strong>Irrigation programs</strong></td>
</tr>
<tr>
<td>► With environment impact assessment</td>
<td>► Irrigation subsidies focusing on efficiency</td>
</tr>
<tr>
<td>► Groundwater withdrawal restrictions</td>
<td></td>
</tr>
<tr>
<td><strong>Regulations on irrigated land</strong></td>
<td></td>
</tr>
<tr>
<td>► No regulation</td>
<td></td>
</tr>
<tr>
<td><strong>Mandated metering or monitoring system for groundwater</strong></td>
<td></td>
</tr>
<tr>
<td>► Mandated metering for other users, these measures are enforced</td>
<td></td>
</tr>
<tr>
<td>► 65 wells for monitoring of yield and quality (weekly)</td>
<td></td>
</tr>
<tr>
<td>► 1142 observation wells for monitoring of level and quality (daily)</td>
<td></td>
</tr>
<tr>
<td>► 651 wells for monitoring of quality twice a year</td>
<td></td>
</tr>
</tbody>
</table>

## Other policies and programs affecting agricultural groundwater use

**Agriculture water conservation programs**

- Subsidies
- Conditional payments
- Penalty

**Land policies with implications on groundwater use**

- Zoning with restriction on groundwater use
- Regional allocation system with groundwater priority for other uses

**Climate change adaptation programs**

- Water infrastructure investment

**Watershed conservation programs**

- Limits of groundwater use close to protected areas

## Supply side management approaches

**Programs supporting the development alternative water supplies**

- Surface water reservoir expansion

## Others

**Agriculture income support policies**

- Biofuel production support
5. Bibliography

Institutional websites

- www.pla.cz
- www.pvl.cz
- www.poh.cz
- www.pod.cz
- www.pom.cz
- www.lesycr.cz
- eagri.cz/public/web/mze/voda/vodovody-a-kanalizace/
- www.eagri.cz
- www.env.cz
- www.mdcr.cz
- www.mzcr.cz
- www.army.cz

Official reports


Additional sources

- www.chmi.cz
- www.heis.vuv.cz
- www.cenia.cz
- www.eagri.cz
- www.env.cz
- Recalculation of groundwater supplies in selected regions CR (www.geology.cz/extranet/vav/podzemni-vody)
- European Topic Centre on Water 2007-2010
- Journal of Water - Vodohospodářský vesting 2010 (www.heis.vuv.cz)
- epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/data/main_tables
- voda.gov.cz/portal/cz/ (not only agricultural)
- eagri.cz/public/web/mze/voda/
- heagri.cz/public/web/mze/voda/dotace-ve-vh/

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