Policies to Manage Agricultural Groundwater Use

ITALY

Italy is one of the top five OECD countries using groundwater for agricultural irrigation. Climate change projections suggest that this use may increase in the future. The examples of the Campania and Puglia regions illustrate the diversity of characteristics and challenges among groundwater using agricultural regions. Groundwater management is operated under the European Water Framework Directive, but limited information is accessible on specific policy instruments.

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>Autorità di Bacino Liri Garigliano Volturno</td>
<td>Planning in the use of surface water and groundwater.</td>
</tr>
<tr>
<td>Autorità di Bacino del Po</td>
<td>Planning in the use of surface water and groundwater.</td>
</tr>
<tr>
<td>Ministero dell’Ambiente</td>
<td>Definition of regulations for groundwater protection and assessment.</td>
</tr>
</tbody>
</table>

2. Status and use of groundwater resources

- Estimated groundwater abstraction for irrigation: 6.97 km3 in 2010.
- Total irrigation area: 2 198 661 ha 2010.

3. Inventory of national policies affecting agricultural groundwater use

Recent groundwater management reforms

<table>
<thead>
<tr>
<th>Reforms</th>
<th>Year</th>
<th>Scope and objective</th>
<th>Degree of implementation</th>
</tr>
</thead>
</table>
Legislative Decree No. 152 of May 11

1999


Complete


2000


Partial

Decreto Legislativo  3 aprile 2006, n. 152

2006

Partial

Other policies and programs affecting agricultural groundwater use

Climate change adaptation programs
► Investment in agriculture and groundwater R&D
► Water infrastructure investment

Drought insurance programs
► Government subsidized plans for field crops
► Government–based insurance

4. Agricultural groundwater use at the regional level

4.1 Campania (Ufita)

Agro-climatic zone | Climate change prospective (2030-2050) | Is groundwater expected to be significantly affected by climate change in 2030-2050? | Surface Irrigation
--- | --- | --- | ---
Semi-arid | Drier, hotter, more frequent droughts | yes | Surface water is available and used for irrigation. Surface water is the dominant source of water and mainly source for on-farm and off-farm.

Type of aquifer | Groundwater reserve | Groundwater quality concerns
--- | --- | ---
Unconfined | 0.006 -0.008 km$^3$ (2014) | Important
| | | The main type: Pollution from industry, being solved after the source of pollution has been identified.

Groundwater irrigation | Volume | Area | Number of farms
--- | --- | --- | ---
0.0013 km$^3$ (2014)* | 500 ha (2014) | 250 farms (2014)

Trends
| | | |
--- | --- | ---
Diminishing | Diminishing | Diminishing

*Volumes are decreasing due to changes in crops grown (i.e. tobacco is disappearing as crop in the area).

Groundwater supported agricultural activities in recent years
► Vegetables and nurseries.
Other uses of groundwater

<table>
<thead>
<tr>
<th></th>
<th>Minor</th>
<th>Major</th>
<th>Diminishing</th>
<th>Steady</th>
<th>Increasing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mining</td>
<td>✓</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>✓</td>
<td></td>
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</tbody>
</table>

Pumping related external effects

<table>
<thead>
<tr>
<th></th>
<th>Minor</th>
<th>Major</th>
<th>Growing</th>
<th>Steady</th>
<th>Reducing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingress of polluted water</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.2 Puglia (Arneo)

Agro-climatic zone | Climate change prospective (2030-2050) | Is groundwater expected to be significantly affected by climate change in 2030-2050? | Surface Irrigation
---|-----------------|------------------------------------------|---------------------------|
Semi-arid | Drier, hotter, more frequent droughts | yes | Surface water is not available and not used for irrigation.

Groundwater quality concerns

Growing. The main type: Salinization.

Groundwater supported agricultural activities in recent years

► Olive trees.

5. Bibliography

Institutional websites

- [www2.autoritadibacino.it/](http://www2.autoritadibacino.it/)
- [www.adbpo.it/on-multi/ADBPO/Home.html](http://www.adbpo.it/on-multi/ADBPO/Home.html)
- [www.minambiente.it/](http://www.minambiente.it/)

Official reports

- Aspetti economici dell’agricoltura irrigua i Puglia - INEA - 2009
- Valutazione del rischio di salinizzazione dei suoli e di intrusione marina nelle aree costiere delle regioni meridionali in relazione agli usi irrigui - INEA – 2011

Additional sources

- [www.inea.it](http://www.inea.it)
- [dati.istat.it](http://dati.istat.it)
- Atlas of Italian Irrigation systems – 2014

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)