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

Institution	Role
Autorità di Bacino Liri Garigliano Volturno	Planning in the use of surface water and groundwater.
Autorità di Bacino del Po	Planning in the use of surface water and groundwater.
Ministero dell' Ambiente	Definition of regulations for groundwater protection and assessment.

2. Status and use of groundwater resources

- Groundwater irrigation area: 893 565 ha 2010.
- 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

Reforms	Year	Scope and objective	Degree of implementation
Law No. 319 of 10th May 1976 'Water protection against pollution' (Merli Law)	1976	Law No. 319 of 10th May 1976 'Water protection against pollution' (Merli Law)	Complete
Law No. 183 of 18th May 1989 'Norms for organization a land functional readjustment of soil protection'	1989	Law No. 183 of 18th May 1989 'Norms for organization a land functional readjustment of soil protection'	Complete

Legislative Decree No. 152 of May 11	1999	Legislative Decree No. 152 of May 11, 1999 'Provisions concerning the protection of waters against pollution and transposition of Directive 91/271/ EEC concerning urban waste water treatment and Directive 91/676/ EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources', subsequently amended and supplemented by Legislative Decree No. 258 of August 18, 2000	Complete
Directive2000/60/EC of the European Parliament and of the Council of 23 October2000 establishing a framework for Community action in the field of water policy	2000	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy	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.

	Volume	Area	Number of farms
Groundwater irrigation	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

	Minor	Major	Diminishing	Steady	Increasing
Domestic	✓				
Industry	✓				
Energy	✓				
Mining	✓				
Other	✓				

Pumping related external effects

	Minor	Major	Growing	Steady	Reducing
Ingress of polluted water	✓		✓		

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/
- www.adbpo.it/on-multi/ADBPO/Home.html
- 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
- 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*