



# Policies to Manage Agricultural Groundwater Use

## CHILE

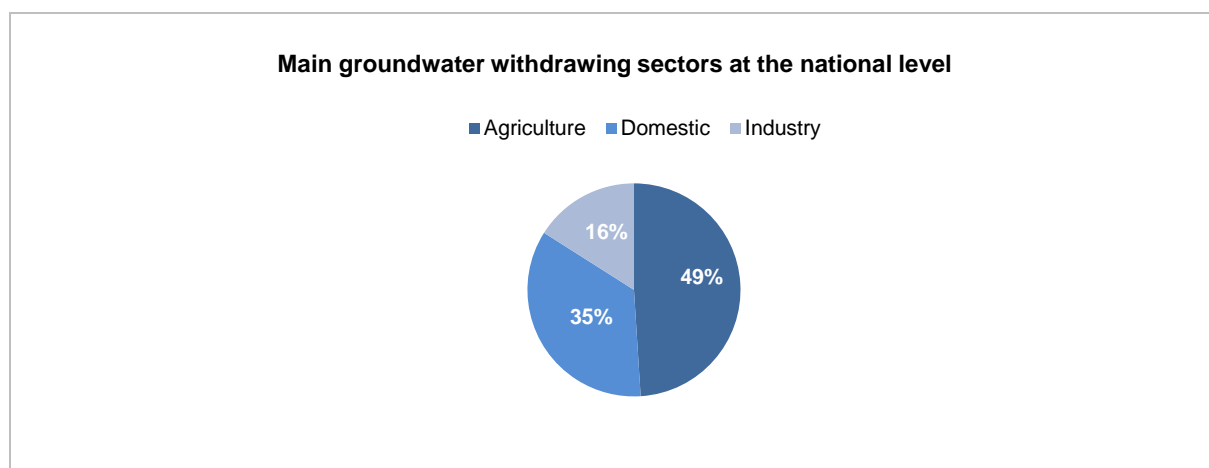
Agriculture represents about half of groundwater withdrawals in Chile. If groundwater use for irrigation is moderate compared to other OECD countries, its irrigation intensity is very important, mostly localised in drier areas. Groundwater use is managed via a range of regulatory, economic and collective management instruments, complemented by supply side programs, but also potentially encouraged by other policies including electricity subsidies.

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

Institution	Role
General Water Direction (DGA)	Government Institution whose mission is to promote the efficient management of water resources.
National Irrigation Commission (CNR)	Government Institution whose mission is to increase the irrigated land and develop the irrigation policies of the country.

### 2. Status and use of groundwater resources

- Annual groundwater recharge was estimated to be 55m<sup>3</sup>/s in the North in 2003 and 160m<sup>3</sup>/s in the South in 2003.
- Annual groundwater use is estimated 2.77 km<sup>3</sup> 2003.
- Groundwater irrigation area is 58 900 ha in 2010.
- Groundwater withdrawals for irrigation are 0.7154 km<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
Water Code	1981	Give the general rules for the management of water resources.	Complete
Groundwater Regulation	2014	Give the rules for the aquifer exploration and exploitation.	Complete

#### Core groundwater management approaches at national level

Groundwater ownership	▶ Private and public
Groundwater entitlement characteristics	▶ Permanent, temporary and transferable
Beneficiaries of entitlement	▶ Individuals, collective bodies and companies
Groundwater entitlement allocation doctrine	▶ Absolute ownership, correlative rights and prior appropriation

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

Regulatory approaches	Economic instruments	Collective management approaches
<b>Coordination with surface water management</b> <ul style="list-style-type: none"><li>▶ Limited</li></ul> <p>The Water Code includes the coordination between surface water and groundwater.</p> <b>Regulations on wells</b> <ul style="list-style-type: none"><li>▶ Approval of new wells<ul style="list-style-type: none"><li>• Accounting for well space restrictions</li></ul></li><li>▶ Groundwater withdrawal restrictions</li></ul> <b>Mandated metering or monitoring system for groundwater</b> <ul style="list-style-type: none"><li>▶ Mandated metering for other users (about 400 monitoring wells (diary) and these measures are not enforced).</li></ul>	<b>Groundwater markets</b> <ul style="list-style-type: none"><li>▶ Temporary entitlements are marketable.</li><li>▶ Long term entitlements are marketable.</li><li>▶ Pumped water is marketable among users.</li></ul> <b>Irrigation programs</b> <ul style="list-style-type: none"><li>▶ Generic irrigation subsidies</li><li>▶ Irrigation subsidies focusing on efficiency.</li></ul>	<b>Collective management schemes</b> <ul style="list-style-type: none"><li>▶ Framed by regulation</li><li>▶ Water user association</li></ul>

#### Other policies and programs affecting agricultural groundwater use

##### Agriculture water conservation programs

- ▶ Subsidies

##### Land policies with implications on groundwater use

- ▶ Zoning with restriction on groundwater use

##### Climate change adaptation programs

- ▶ Investment in agriculture and groundwater R&D
- ▶ Water infrastructure investment
- ▶ Groundwater modelling and data development

### **Watershed conservation programs**

- ▶ Exclusion zone for conservation area
- ▶ Limits of groundwater use close to protected areas

### **Energy programs**

- ▶ Electricity subsidies
- ▶ Other energy supporting programs (diesel, natural gas)

## **Supply side management approaches**

### **Programs supporting the development alternative water supplies**

- ▶ Surface water reservoir expansion
- ▶ Rainwater harvesting
- ▶ Desalinisation

### **Aquifer recharge program**

- ▶ Aquifer storage and recovery programs

## **Others**

### **Drought insurance programs**

- ▶ Government subsidized plans for field crops
- ▶ Private insurance only

## **5. Bibliography**

### **Institutional websites**

- [www.dga.cl](http://www.dga.cl)
- [www.cnr.gob.cl](http://www.cnr.gob.cl)

### **Official reports**

- Diagnóstico de la gestión de los recursos hídricos, World Bank, 2011

### **Additional sources**

- 2011, World Bank
- National Library of Congress.
- General Water Direction

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)