

This country profile was compiled by the OECD Secretariat and reflects information available as of March 2015. Further information and analysis can be found in the publication: OECD (2015) [Water Resources Allocation: Sharing Risks and Opportunities](#), OECD Studies on Water, OECD Publishing. Country profiles for all of the 37 allocation regimes in 27 OECD and key partner countries surveyed for this project are available for download at: <http://www.oecd.org/fr/publications/water-resources-allocation-9789264229631-en.htm>.

CHILE

Overview and highlights

Chile is a country with a diversity of water resource, from the arid, mineral-rich north to the water abundant south. Recent reforms to the water allocation regime took place in 2005, when the Water Code was modified to encourage private water entitlements holders to either exercise their unused rights or allow authorities to reallocate unused water entitlements to others. The process of allocation is ongoing.¹

Key characteristics of the prevailing allocation regime in Limarí River Basin include:

- The Limarí River Basin is located in the Coquimbo Region. It has an area of 11,000km² which is an arid zone with annual average precipitation is 120mm;
- The ground water and surface water are publicly owned;
- Water resources are considered neither over-allocated nor over-used;
- Agriculture is the major type of water use (85-90% of mean annual inflow/recharge);
- Water entitlements are unbundled from property titles;
- If an entitlement is not used in a given period, it will remain in place for the period it is issued for;
- Entitlements are legally defined and given in perpetuity; private entitlements are granted at both the individual and collective level;
- Before a new entitlement can be granted, an assessment of third party impacts, an environmental impact assessment (EIA) and existing user(s) forgoing use are required;
- Allocation trading is allowed, while there are restrictions and rules on transactions; The General Directorate of Water (DGA) is authorized to manage water trading;
- There are no abstraction charges;
- There are established priority classes. But, if water is needed for public purpose, the President of the Republic can reallocate entitlements after paying the price of the water entitlements that have been expropriated.

Key characteristics of the prevailing allocation regime in Maipo's River First Section, Santiago de Chile, include:

- The coexistence of several water uses including agricultural, health services, hydropower and industrial;
- The flow rate is managed to some extent, as water systems are partially regulated;
- Environmental flows, as well as freshwater and terrestrial biodiversity needs are taken into consideration in defining the available resource pool;
- Water entitlements may be traded freely in the market or collected and stocked;
- Water entitlements are unbundled from property titles, granted in perpetuity. They can also function as a financial instruments (e.g. as collateral for mortgages);
- There are no abstraction charges.

¹ For more information, <http://www.leychile.cl/Navegar?idNorma=5605>.

Legal and institutional setting for water allocation

Institution	Scale	Main Responsibilities
General Direction for Water (Dirección General de Aguas, DGA)	National	Plan the development of water resources in natural sources, in order to make recommendations for their use. Establish water use rights. Investigate and measure water resources. Maintain and operate the national hydrometric service, provide and publish the information. Exercise the work of police and surveillance of water in natural channels for public use. Prevent any building, modification or destruction works without authorization. Supervise the operation of Water Users Organizations.
Surveillance Boards and Associates of Canal Users (Juntas de Vigilancia y Asociaciones de Canalistas)	Private bodies	Water allocation in regard to water rights (rivers and channels).
Directorate of Hydraulic Works (Dirección de Obras Hidráulicas (DOH))	National	In some big reservoirs.

Legal context for water allocation: Roman/ Statutory Law, as set out in the National Code of Water from 1981.
Legal definition of ownership of water resources: Ground water and surface water are publicly owned.

Tracking water scarcity

A mapping exercise has been undertaken for surface and ground water to identify areas where scarcity is becoming a problem².

Allocation Regime Example: Limarí River Basin

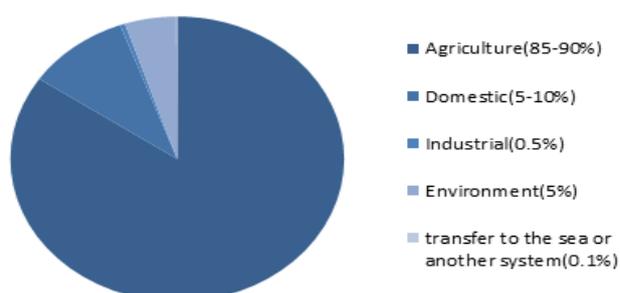
Physical features of the water resource

The Limarí river basin area spans 11,000km². It is located in an arid zone, with an annual average precipitation of 120mm. There are 3 large reservoirs, which are privately managed.

The **flow rate is managed or controlled** to some extent, as water systems are partially regulated.

There is **some non-consumptive use** for hydro power (0.5%).

Mean annual inflow/recharge consumed per use



² For more information, see: www.dga.cl. Yearly, the DGA (Dirección General de Aguas) forecasts water availability in Chile for the next irrigation period. Also, the DGA has the authority to formally establish the criteria to define periods of water scarcity. Maps of restricted and prohibited water use zones are available.

Defining the available resource pool

Are limits defined on consumptive use? Yes.

- There is a limit in the volume of water that can be abstracted and there is a limit to the proportion of water that can be abstracted. These are linked to an agreement between private users based on the "model of allocation from 1976", prepared by DOH and private organisations. The agreement is statutory instrument that must be followed.

Are environmental-flows clearly defined? No.

- Neither requirements for freshwater biodiversity nor terrestrial biodiversity are taken into account.

Are there arrangements to deal with impacts of climate change? Yes.

- Installation of monitoring system.

What is the status of resource pool? Neither over-allocated nor over-used.

Factors taken into account in the definition of the available resource pool

Factor	Taken into account?	If taken into account, how?
Non-consumptive uses (e.g. navigation, hydroelectricity)	✓	In cases where there are storage capacity
Base flow requirements	✓	Only for maintaining the operation of consumptive permanent rights
Return flows (how much water should be returned to the resource pool, after use)	✓	Based on historical data
Inter-annual and inter-seasonal variability	✓	To inform storage volume in reservoirs
Connectivity with other water bodies		
Climate change	Not yet in a regular way	Discussions are beginning on how to take into account climate change.

Entitlements to use water

Definition of entitlements	Characteristics of entitlements
<p>Are entitlements legally defined? Yes.</p> <p>Are private entitlements defined? Yes, defined as owned by individual, company, institution representing water users, or indigenous persons. The process for allocating water among individual users within a group of users is based on legal mechanism.</p> <p>Nature of entitlement: Defined as maximum volume that may be taken in a given period and proportion of any water allocated to a defined resource pool. Entitlements are unbundled from property titles.</p> <p>Period granted for: In perpetuity.</p> <p>Return flow obligations: Yes, only for non-consumptive water rights.</p>	<p>If the entitlement is not used in a given period, it remains in place for the period it is issued for.</p> <p>Are entitlements differentiated based on the level of security of supply (or risk of shortage)? Yes. Differentiated based on characteristics of the entitlement, which consider the level of security of supply: permanent without restrictions, temporary with restrictions, consumptive and non-consumptive, continuous, or discontinuous.</p> <p>Is there a possibility to trade, lease or transfer entitlements? Yes. There are restrictions and rules on transactions between owners of water rights. The DGA is authorised to manage these transactions.</p> <p>Can entitlements function as a financial instrument? Yes.</p>

Type of users not required to hold a water entitlement to abstract water: Domestic users and uses for mining purpose.

Requirements to obtain a new entitlement or to increase the size of an existing entitlement: Assessment of third party impacts, environmental impact assessment (EIA) and existing user(s) forgoing use.

Predefined priority classes : Not established, but if water is needed for public purpose, the President of the Republic can reallocate entitlements after paying the price of the water entitlements that have been expropriated.

Abstraction charges

There are no abstractions charges.

Dealing with exceptional circumstances

Distinction between the allocation regimes used in “normal” and extreme/severe water shortage times? Yes.

How is the amount of water made available for allocation adjusted: In reservoirs, it depends on the level of water storage, water rights and operational rules. In rivers without reservoirs, it depends on the flow of stream and water rights.

Definition of “exceptional” circumstances: Use of different allocation regimes (“turnos”) in rivers and channels.

Legal bodies declaring the onset of “exceptional” circumstances: Surveillance Associations (“Juntas de vigilancia”) can declare different regime of allocation (“turnos”). DGA can designate zones approaching water shortage (“zona de escases hidrica”).

Monitoring and enforcement

Responsible authority: There are many authorities depending on the type of water usage (DGA, Agriculture Ministry, Environmental Assessment Agency, Sanitary Superintendent, Environmental Assessment Agency, Army).

Types of withdrawals monitored: Agriculture, domestic, industrial, energy production, environment, transfer to the sea or another system, uses for national security purposes.

Monitoring mechanisms: Metering.

Sanctions: following a legal process and fees may apply, except in the case of water uses for national security purposes.

Conflict resolution mechanisms? Yes, DGA, Organisations and entitlements holders are involved in allocation of water and change of intake point to resolve conflicts.

Allocation Regime Example: Maipo River (first section, Santiago de Chile)

Physical features of the water resource

The Maipo River is naturally divided into three sections. The first section is characterized by being a stable river in general, with high levels of flow, a lagoon located in its high part with a regulation capacity of 220 million cubic meters. The section is managed by a Supervisory Board and several uses coexist including agricultural, health, hydropower and industrial.

The **flow rate is managed or controlled** to some extent, as water systems are partially regulated.

There is **some non-consumptive use** for hydro power.

Defining the available resource pool

Are limits defined on consumptive use? Yes.

- There is a limit in the volume of water and to the proportion of water that can be abstracted, linked to a guiding document, prepared by the General Direction for Water.

Are environmental-flows clearly defined? Yes.

- The Water Code establishes that each water use granted must respect a minimum ecological flow of 20% of the mean annual flow of the river. In practice, 20% is fixed to each monthly right which may not exceed 20% annually (Article 129 - bis 1, Water Code). Other flows considering freshwater and terrestrial biodiversity are taken into consideration under the National Environmental Law.

Are there arrangements to deal with impacts of climate change? Yes.

- Water entitlements are not subject to a specific use. They can be used in agriculture, mining, health services, etc. They may be traded freely in the market. Various technologies may be used to improve the efficiency of water use.

What is the status of resource pool? Over-allocated and over-used.

- Measures to address these issues include in surface water, the application of apportionment. To this end, creating user organizations is encouraged, which have the function of distributing water. In the case of groundwater, encouraging the formation of user organizations so that they can regulate extractions to more sustainable volumes.
- New techniques are being promoted in search of new sources of water. Desalination and artificial recharge appear as priorities and applicable solutions.

Factors taken into account in the definition of the available resource pool

Factor	Taken into account?	If taken into account, how?
Non-consumptive uses (e.g. navigation, hydroelectricity)	✓	Under Water Code, granting non-consumptive water rights.
Base flow requirements	✓	In environmental flows.
Return flows (how much water should be returned to the resource pool, after use)	✓	In non-consumptive water rights.
Inter-annual and inter-seasonal variability	✓	Rights establish volumes per unit of time, which must be apportioned among all holders if any less water resources are available.
Connectivity with other water bodies	✓	Under Water Code allowed whenever third rights are not affected.
Climate change	Not yet in a regular way	In ongoing studies, such as National Water Resources Balance.

Entitlements to use water

Definition of entitlements	Characteristics of entitlements
<p>Are entitlements legally defined? Yes.</p> <p>Are private entitlements defined? Yes, defined as owned by individuals (to an individual person) or collective (to a group of people/ organization/ city). On the latter, assigned to an institution representing water users (e.g. WUAs) or community-based arrangements, through a bargaining process that allocates water among individual users with the group of users.</p> <p>Nature of entitlement: Defined as maximum volume that may be taken in a nominated period. Entitlements are unbundled from property titles.</p> <p>Period granted for: In perpetuity.</p> <p>Return flow obligations: n/a.</p>	<p>If the entitlement is not used in a given period, it remains in place for the period it is issued for.</p> <p>Are entitlements differentiated based on the level of security of supply (or risk of shortage)? No.</p> <p>Is there a possibility to trade, lease or transfer entitlements? Yes.</p> <p>Are allocations (the amount that can be taken at any point in time) managed separately from entitlements? Yes.</p> <p>Is allocation trading allowed? Yes, function of market demand and supply of water. No previous authorization is required from any authority.</p> <p>Can entitlements function as a financial instrument? Yes, as a mortgage to get a credit loan.</p>
<p>Type of users not required to hold a water entitlement to abstract water: Drinking and domestic use, water found in mining operations, stream flows that originate and end within a given property, non-navigable lakes located within a given property, and customary uses.</p> <p>Requirements to obtain a new entitlement or to increase the size of an existing entitlement: an assessment of third party impacts is required.</p> <p>Pre-defined priority classes: Not established.</p>	

Abstraction charges

There are no abstractions charges.

Dealing with exceptional circumstances

Distinction between the allocation regimes used in "normal" and extreme/severe water shortage times? Yes.

How is the amount of water made available for allocation adjusted: Depending on the availability of the flow, rights are apportioned.

Definition of "exceptional" circumstances: In times of water shortage, which must be declared by the General Direction for Water, withdrawals may be exceptionally authorized from certain points within 6 months. Powers from the Supervisory River Boards may be suspended to redistribute flows in order to mitigate the effects of droughts.

Legal bodies declaring the onset of “exceptional” circumstances: The General Direction for Water in conjunction with the Minister of Public Works, acting on behalf of the President of the Republic. Surface rights can be restricted to secure other supplies such as drinking water. Stakeholders are not involved in the definition of these circumstances.

Monitoring and enforcement

Responsible authority: General Direction for Water.

Types of withdrawals monitored: Agriculture, domestic, industrial, energy production and environment.

Monitoring mechanisms: n/a

Sanctions: Is the same General Direction for Water that redistributes in the same rivers.

Conflict resolution mechanisms? Yes. The General Direction for Water intervenes in administrative and judiciary actions.