

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>.

SPAIN

Overview and highlights

In Spain, there are territories with water resource abundance and others with scarcity, where it is necessary to make a substantial effort to distribute water appropriately. Water resources allocation for different water uses in Spain is carried out via river basin management plans (RBMPs), elaborated by River Basin Organisations. Climate change, economic development and environmental improvement have driven recent on-going water reforms. In 2007, the RBMPs were amended in order to allow water law to become more operational in accordance with the EU Water Framework Directive. Reforms include changes to the organisation of the water supply and sanitation sector as well as legislative changes to finance climate change adaptation projects related to water.

Key characteristics of the prevailing allocation system in Spain include:

- Surface and ground waters are publicly owned. However, before 1985, groundwater could be privately owned;
- High hydrological variability and irregularity of the hydrological regime in space and time;
- Environmental flow regimes are established in the Water Act and set out in River Basin Management Plans;
- Water entitlements are linked to property rights with some exceptions (e.g. entitlements that may be transferred and irrigators' communities);
- Water markets in place, facilitated by entitlement transfer contracts and entitlement exchange centres;
- There are pre-defined priority water uses in RBMPs for each river basin, which consider the protection and conservation of water resources and the environment;
- Public administrations determine the adequate mechanisms to charge the costs of water management to users, according to the cost recovery principle;
- Water withdrawals are monitored by the River Basin Organisations (Water Commissariats).

Legal and institutional setting for water allocation

| Institution | Scale | Main Responsibilities |
|--|--------------------------------|---|
| National government | National | Exclusive competence regarding legislation, co-ordination and licensing of resources and hydrological uses when water runs through more than one Autonomous Region. |
| Autonomous Regions | Provincial/ State/ Regional | Assume competences on projects, construction and utilisation of hydrological exploitations, channels and irrigation systems of interest for the Autonomous Region and mineral and thermal waters. |
| River Basin Organisations (RBO)/ Ministry of Agriculture, Food and Environment | Basin | Elaboration of the river basin management plans (RBMPs), implementation and revised of the plans, and administration and control of the public water domain; granting water use rights through licences; and, the development, construction and use of the hydraulic works developed with the RBO's own funds, and those provided by the State. According to Water Act, river basins exceeding the territorial scope of one Autonomous Region, are under the authority of the Ministry of Agriculture, Food and Environment. |
| <p>Legal context for water allocation: Statutory law. Specially, the Water Act was completed with the approval of Act 10/2001, 5 July 2001 of the National Hydrological Plan¹, modified by Act 11/2005 22 June 2005.</p> <p>Legal definition of ownership of water resources: Surface and ground waters are publicly owned.²</p> | | |

Tracking water scarcity

A mapping exercise has been done to identify areas where scarcity of surface and ground water are becoming a problem: Tracking of key hydrological variables (rainfall, evapotranspiration, aquifer recharge and surface, groundwater and total runoff) is provided on a monthly basis and maps are available on the website of the Ministry of Agriculture, Food and Environment (<http://www.magrama.es>).

¹ The Plan has the fundamental objective to set the measures to co-ordinate the river basin management plans and resolve any questions that cannot be solved at basin scale, such as water transfers between river basin districts or water resources allocation in shared aquifers.

² Since the approval of the Water Act of 1985, all waters are public and the exclusive rights to water use are obtained through legal disposition or administrative license. Prior to this, groundwater could be privately owned. Owners of these waters can continue with this regime, declaring their existence to the River Basin Authority, or move to a public regime. Private waters will not enjoy the administrative protection of public waters.

Allocation Regime Example: Licensing System of Water Use Rights in Spain

Physical features of the water resource

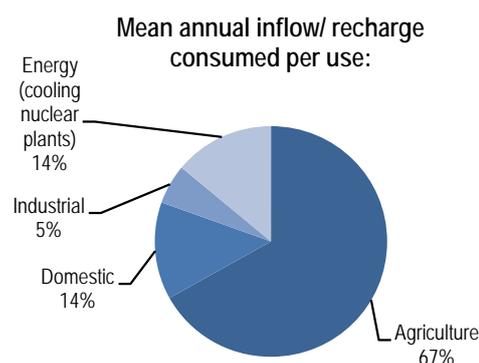
Water resources in Spain present a high hydrological irregularity and diversity. Their hydrological variability and the irregularity of their hydrological regime in space and time generate significant challenges for water management.

The areas with the highest water abundance per surface unit the North and Galicia, with values higher than 700 mm/year. In the rest of the country, the so-called "dry Spain", water availability does not exceed 250 mm/year. The lowest water availability in Spain occurs in the Segura basin, where it does not reach 50 mm/year (around 20 times less than in Galicia and 5 times lower than the national average).

As a result of climate variability together with the basin characteristics, the total average annual runoff in Spain follows a spatial behaviour pattern similar to the rainfall, although with higher variability. The total runoff (direct surface runoff plus underground runoff) is estimated at around 220 mm/year, equalling some 111 000 Hm³/year, with a great spatial variability going from areas where runoff oscillates between 1 and 150 mm/year (southeast of Spain and central areas) to other areas where it is over 1 500 mm/year, in northern basins and mountainous areas of some basins (MMA, 2000).

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

There is **significant non-consumptive use** in hydropower.



Defining the available resource pool

Are limits defined on consumptive use? Yes.

- There is a limit to the proportion of available water that can be abstracted. This limit is defined by the requirements to achieve good status of all waters in River Basin Management Plans (RBMP) established by the Spanish Hydrological Planning Instruction in co-operation with regional authorities (Federal States). The plan is a statutory instrument that must be followed.

Are environmental flows clearly defined? Yes.

- The Spanish Water Act establishes the environmental river flows as those sufficient to maintain at least fish life that would or could live under natural conditions and its riverbank vegetation. The Hydrological Planning Regulation develops the basic criteria for determining the environmental flows and the Hydrological Planning Technical Instruction describes the methods to be applied to determine the flow regimes, including determination of seasonal minimum flow patterns, maximum flow rates, or flood flow discharges. The environmental flow regime, as established in the Water Act, is set in the River Basin Management Plans.

What is the status of resource pool? Over-allocated or over-used in several areas. In the Segura district there are cases of over-allocation of water resources as well as over-use of aquifers. In the Jucar district (Vinalopo area) there are also cases of over-use of resources and, in some cases, there are more entitlements than resources, so over-allocation also exists. Also, in the headwaters of the Guadiana basin there are similar problems that are currently being addressed.

Where there is over-allocation of resources, the measures being taken are focused on trying to reduce uses and providing external resources (as in the Segura and Vinalopo cases) in order to meet the current demands.

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

- River Basin Organisations are responsible for estimating water demand in the elaboration of river basin management plans. In the plans currently being approved in Spain, the present and forecasted demands for trend scenarios in the years 2015, 2021 and 2027 have been estimated, taking into account the water planning horizons established by the Water Framework Directive. These water demand estimations have been adjusted for the demands corresponding to the current situation with real available data on extractions and consumptions in the most significant demand units in each one of the districts. Future water demand is estimated taking into account the evolution of determining factors in water use, such as population, irrigation surface, industry evolution, climate, etc.

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) | ✓ | The Hydrological Planning Regulation considers non-consumptive demand for water that goes back to the hydrological environment without a significant alteration of its quality. The water used by hydropower plants, and water diverted from its course for aquaculture or navigation and nautical activities are considered non-consumptive demands. |
| Base flow requirements | ✓ | Article 42 of the Water Act establishes that the contents of the hydrological plans must include water resources allocation and reserve for current and future water uses and demands, as well as for the conservation and recuperation of the natural environment. In international agreements, such as the Albufeira agreement improving cooperation in water issues between Portugal and Spain and to encourage the sustainable use of shared watercourses. Recently, in 2008 the agreement was modified in order to extend the minimum annual flow regime for international rivers to a minimum seasonal and weekly flow regime in accordance with the EU's Water Framework Directive principles. |
| Return flows (how much water should be returned to the resource pool, after use) | ✓ | The holders of administrative water licences and all those that by any title have a right to their exclusive use are obliged to install and maintain the corresponding measuring systems, to guarantee precise information on the amount of water actually consumed, and, if applicable, returned water flow. |
| Inter-annual and inter-seasonal variability | ✓ | The Hydrological Planning Regulation states that the hydrological plan will establish the available resources allocation and reserve for foreseeable demands, taking into account inter-annual and inter-seasonal variability. It also specifies which demands will not be met by the available resources in the river basin district. |
| Connectivity with other water bodies | ✓ | The National Hydrological Plan co-ordinates the RBMPs and aims to resolve any issues that cannot be solved at basin scale, such as water transfers between river basin districts or water resources allocation in shared aquifers. |
| Climate change | ✓ | The possible impact of climate change on natural water resources is taken into account in the estimation of water balances in RBMPs. |

Entitlements to use water

| Definition of entitlements | Characteristics of entitlements |
|---|--|
| <p>Are entitlements legally defined? Yes. The Water Act establishes the general principles to grant water entitlements and the economic and financial arrangements for the general interest projects, whereas river basin management plans set specific regulations in each river basin district for water entitlement licensing and on the exemptions to the cost recovery principle.</p> <p>Are private entitlements defined? Yes. There are both individual and collective entitlements. Collective entitlements might be granted to Water Users associations or Irrigators Communities, for instance.</p> <p>Nature of entitlement: Defined as the purpose that water may be used for and the maximum volume that can be taken. Entitlements are not unbundled from property titles; ownership of the land must be proven. Also, there has to be compatibility with the established RBMP with regards to required uses and entitlements.</p> <p>Period granted for: No more than 75 years.</p> <p>Return flow obligations: Specified on a case by case basis, to ensure minimum environmental flows.</p> | <p>If the entitlement is not used in a given period, it can expire. The Public Water Domain Regulation states that water entitlements might expire if any of the essential conditions or established deadlines are not complied with. A water entitlement may also expire if there is an interruption of use during three consecutive years.</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. In order to increase the flexibility of the licensing system, certain market instruments are in place, namely entitlement transfer contracts ("water market") and entitlement exchange centres ("water bank"). These instruments can reallocate resources for new uses and they can mitigate the negative effects of drought situations, which are very common in Spain.</p> |

Type of users not required to hold a water entitlement to abstract water: Communal uses, such as the surface water uses for drinking, bathing and other domestic uses, as well as drinking water for livestock, as long as this does not produce an alteration in the water quality or flow, or a deviation of the water from its natural flow. Moreover, there are special communal uses (navigation and flotation, establishment of crossing boats and their berths, etc.) which require a previous responsible declaration. The following two situations constitute an exception to the afore-mentioned general rule:

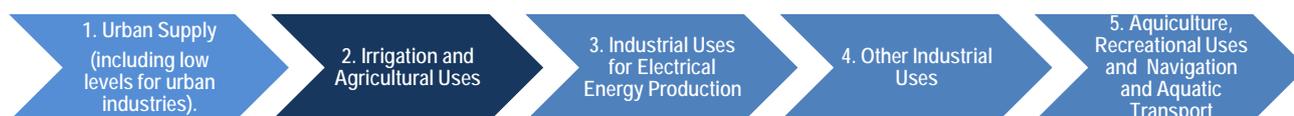
- a) The owner of an estate may use running or stagnant rainwater within the estate; and
- b) Spring water originating within an estate can be used, as well as groundwater, when the total yearly volume is not higher than 7 000 m³, even though an authorisation might be needed if the aquifers have been declared overexploited or in risk of overexploitation.

Measures to address adverse impacts of an increase in these uses include: Ensure compatibility with hydrological planning (compatibility reports with the river basin management plan), and, consider multiple sectorial visions (reports from other administrations), amongst which there are questions as important as environmental requirements.

Requirements to obtain a new entitlement or to increase the size of an existing entitlement: conditional on public consultation and assessment of third party impacts.

Pre-defined priority classes

The Water Act states that the order of preference for water use will be established in the river basin management plan (RBMP) of the corresponding river basin, bearing in mind the needs for the protection and conservation of water resources and their environment. If the plan does not define the order of preference, the following will be applied:



Abstraction charges

In Spain, the costs are paid in the sense that the necessary works in order to meet water needs are charged to the users requesting such works. The two pricing instruments are the Regulation Fee and the Utilisation Tariff. In the case of groundwater, there is no abstraction charge as no hydraulic works are necessary in order to abstract the water.

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: The maximum volume allocated is established by the Withdrawal Commission depending, amongst other factors, on climatic conditions. The Withdrawal Commission meets three times a year, normally coinciding with the beginning, middle and end of the irrigation period.

Definition of “exceptional” circumstances: In order to establish balances and carry out the water allocations in the RBMPs, average values of the extraordinary resources are used. These values are derived from the value ranges fixed in the Special Droughts Plan. In practice, during a drought situation, the Permanent Committee for Drought Management takes these value ranges as a reference. Thus, they make decisions on restrictions, extraordinary resources mobilisation, implementation of different measures, etc. The Special Droughts Plan is elaborated with the consensus and approval of the District Water Council, where stakeholders participate.

Monitoring and enforcement

Responsible authority: River Basin Organisations (Water Commissariats).

Types of withdrawals monitored: Agriculture, Domestic, Industrial, and Environmental.

Monitoring mechanisms:

- Agricultural uses met with groundwater are measured or estimated by direct measuring or by remote sensing in areas of the district with intensive groundwater exploitation, such as, respectively, Vinalopó-Alacantí and Mancha Oriental.
- As for domestic use, the source of water is mostly groundwater, followed by surface water. Currently there is direct measuring in large towns, whether they are supplied by surface water or groundwater. As in the case of agricultural use, the surface use is obtained from gauging data, and the subterranean one from meters in wells.

Sanctions: Sanctions are applied depending on the type of infringement. There are "Very serious", "serious", "less serious" and "minor".

Conflict resolution mechanisms? Yes, Contentious Administrative Appeals might be filed before the competent authority or body.