

AGRICULTURE AND WATER POLICIES: MAIN CHARACTERISTICS AND EVOLUTION FROM 2009 TO 2019¹

SPAIN

This country profile reviews recent changes in agriculture and water policies. The content of the profile is based on a survey conducted in 2019 by the OECD Secretariat² and additional official sources.

A. Agriculture and Water Characteristics

- Spain's agriculture mainly produces fruit and vegetables, pig meat, cereals, olive oil and wine (Eurostat, 2019; Ministry of Agriculture, Fisheries and Food, 2021).
- The agricultural sector is the largest consumer of water; it accounted for 65% of total water abstractions in 2016 (FAO, 2020). Groundwater represented less than 30% of Spain's irrigation (OECD, 2015b). Some regions, such as the Upper Guadiana basin, experienced intensive, sometimes illegal, groundwater extraction for agriculture, which contributes to the degradation of ecosystems (OECD, 2015a).
- Diffuse agricultural pollution affects 34% of surface water bodies and 56% of groundwater bodies (European Commission, 2019). The mean nitrogen balance between 2000 and 2015 was around 34 kg/ha, with values between 25.1 kg/ha and 38.7 kg/ha (Ministry of Agriculture, Fisheries and Food, 2018), whereas the phosphorus balance went down from 5 kg/ha to 4 kg/ha during the same period (OECD, 2020a).

Table 1. Main challenges related to water in agriculture

Water use +++	Water pollution ++	Water-related risks +++
Agricultural water abstractions represent 65% of total water abstractions	Key pollutants from the agricultural sector are nitrates, pesticides, and pharmaceutical compounds used in livestock and fish farming	Flooding is a recurrent problem in several regions of Spain. Two-thirds of the country has a semi-arid climate and being affected by recurring droughts – relevant problem for the agricultural sector

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: European Commission (2019), FAO (2020), OECD (2015a, 2019, 2020).

¹ This document, as well as any data included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

² For more details, Gruère, G., M. Shigemitsu and S. Crawford (2020), "Agriculture and water policy changes: Stocktaking and alignment with OECD and G20 recommendations", *OECD Food, Agriculture and Fisheries Papers*, No. 144, OECD Publishing, Paris, <http://dx.doi.org/10.1787/f35e64af-en>.

B. Key Agriculture and Water Policies & Main Evolution from 2009 to 2019³

B.1. Cross-Cutting Agriculture and Water Policies & Governance

Table 2. Key agriculture and water policies and policy changes

<p>Key Policies</p>	<p>The existing EU legislation imposes a protective framework with standards for all water bodies in EU countries and addresses specific pollution sources, including agricultural pollution. The three main directives involved are the Water Framework Directive (WFD) (2000/60/EC) (on water resources management), the Nitrates Directive (91/676/EEC) and the Floods Directive (2007/60/EC).</p> <p>The Water Law is the legal framework for water management in Spain. Legal amendments to the Water Law introduced in 2004 and 2005 transposed the requirements of the WFD and launched the development of River Basin Management Plans (RBMPs) in each of the 25 river basin districts. The 2004 Plan “AGUA” (Actions for the Management and Use of Water) adjusted the approach to water management adopted by the 2001 Spanish National Hydrological Plan (NHP). This plan was designed primarily to cover upfront investment costs and a portion of operational and maintenance costs. Spain also implemented a National Irrigation Modernisation Plan between 2002 and 2008.</p> <p>The responsibilities for water resources planning and management in river basins located within one region lie in regional government. River basins which run through several regions are managed by river basin bodies under the authority of the national government.</p>
<p>Main Evolution from 2009 to 2019</p>	<ul style="list-style-type: none"> ▶ Modernization of irrigation infrastructures: The Spanish Government has promoted the modernisation of irrigation infrastructures to continue the main task of the previous National Irrigation Plan that finished in 2008. ▶ Innovation: The existing SIAR tool (Agroclimatic Information System for Irrigation, developed in 1998) was improved. Its purpose is to foster water optimisation in irrigation, water and energy efficiency and to combat the effects of droughts⁴.
<p>Consistency between Agriculture and Water Policies</p>	<p><i>Unspecified</i></p>

³ Agriculture and water policies are defined here as all policies that affect the interaction between agriculture production and water.

⁴ <http://eportal.mapama.gob.es/websiar/Inicio.aspx>

B.2. Policies to Manage Agricultural Water Use (Quantity)

Table 3. Key instruments for the management of water use

<p>Quantified national future targets for the use of water resources in the agriculture sector</p> <p><u>A new plan is currently being drafted which defines the actions for irrigation policy in the coming years. It includes modernisation of 800,000 hectares of irrigation for a more efficient use of water</u></p>	<p>Metering, monitoring and reporting</p> <p><i>Unspecified</i></p>
<p>Quantity targets accounting for climate change</p> <p><i>Unspecified</i></p>	<p>Scarcity pricing</p> <p>Water pricing has general rules defined by the Water Law, but the application is particularised by the exploitation system. Each River Basin District (RBD) is divided into several exploitation systems (ranging from 10 to 16 by RBD)</p>
<p>Water entitlements</p> <ul style="list-style-type: none"> ▶ Entitlements and use rights are issued by the competent authority (normally river basin bodies or the national government in certain cases) ▶ Water rights are attached to land ownership. Water rights cannot be traded, but can be transferred under certain conditions, with the approval of the competent authority 	<p>Enforcement measures</p> <p><i>Unspecified</i></p>
<p>Proportion of cost recovery for surface water</p> <ul style="list-style-type: none"> ▶ Total cost recovery: 62% ▶ Financial costs (Operation and Maintenance + Capital costs): 49% 	<p>Other policy instruments used to encourage water use efficiency</p> <ul style="list-style-type: none"> ▶ Water supply cost recovery, Farm advice and research ▶ Support for upgrading irrigation infrastructure, and increasing water storage capacity. During the execution of the infrastructures, the government provides 50% of the total cost of the modernisation of irrigation infrastructure and the rest is paid by the irrigating community. From year 26 to 50 of the infrastructure use, the irrigation community returns the government support in 25 interest-free instalments. <u>The modernisation could also be financed by the Spanish National Rural Development Programme (RDP) 2014-2020</u>

Note: Underline indicates changes since 2009

B.3. Policies to Control Agricultural Water Quality

Table 4. Key instruments to improve water quality

<p>National water quality data collection tools</p> <ul style="list-style-type: none"> ▶ Monitoring network of surface water status (ecological and chemical), groundwater status (chemical and quantitative) and protected areas 	<p>Main policy instruments</p> <ul style="list-style-type: none"> ▶ Regulatory: <u>2015 Decree⁵ assess the status of water bodies and Environment Quality Standards (EQS)</u> ▶ Economic: <u>Public procurement and development of the monitoring network (surface water: ecological and chemical), groundwater: chemical and quantitative) since 2018</u> ▶ Information: National Spanish data base for water quality (NABIA)
<p>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas</p> <p>No</p>	<p>Enforcement measures</p> <p><i>Unspecified</i></p>

Note: Underline indicates changes since 2009

⁵ Royal Decree 817/2015, 11th September

B.4. Policies to Manage Climate-Induced Water Risks

Table 5. Water risks and responses

	Droughts	Floods
Reported Trends	Increase in the number and severity of drought events.	An increase in the frequency of damages has been observed in river basins where snowmelt is a significant component of the flow regime. There have been pluvial floods almost every year during the past decade in the Mediterranean basins, although their impact on agriculture was limited.
Key Policies	Support for upgrading irrigation infrastructure, and increasing water storage capacity. Development of a system of water scarcity indicators in the River Basin Drought Plans.	Development of an early flood warning information system and mapping flood risk zones. Support for a network of ponds to store water from storms and other civil works preventing flood risks nationally, including for agriculture.
Main Changes from 2009 to 2019	Increase in irrigation efficiency.	Flood Risk Management Plans implement the EU Floods Directive and were approved in 2016. These plans include measures to reduce risks for agriculture such as river restoration projects, Natural Water Retention Measures and green infrastructures, promotion of insurance policies through the National Agency for Agricultural Insurance (ENESA) and handbooks on flood risk adaptation.
Factoring of Climate Change in Policies	3-4/5: The impacts of climate change and water policy requirements are analysed in the RBMPs and in the national water plan.	

Bibliography

- Eurostat (2019), *Agriculture, forestry and fishery statistics: 2019 edition*, Publications Office of the European Union, Luxembourg, <https://doi.org/10.2785/743056>.
- European Commission (2019), *The EU Environmental Implementation Review 2019 Country Report: Spain*, https://ec.europa.eu/environment/eir/pdf/report_es_en.pdf.
- FAO [Food and Agriculture Organisation of the United Nations] (2020), FAO Aquastat. Retrieved from: <http://www.fao.org/aquastat/en/> (accessed 24 August 2020).
- Ministry of Agriculture, Fisheries and Food (2018), *BALANCE DEL NITRÓGENO EN LA AGRICULTURA ESPAÑOLA 2016*, https://www.mapa.gob.es/es/agricultura/temas/medios-de-produccion/bn2016_metodologia-resultados_tcm30-507806.pdf
- Ministry of Agriculture, Fisheries and Food (2021), "Cuentas Económicas de la Agricultura (Renta Agraria: Macromagnitudes Agrarias)", <https://www.mapa.gob.es/es/estadistica/temas/estadisticas-agrarias/economia/cuentas-economicas-agricultura/>. (accessed 28 February 2021)
- OECD (2015a), *OECD Environmental Performance Reviews: Spain 2015*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264226883-en>.
- OECD (2015b), *Drying Wells, Rising Stakes: Towards Sustainable Agricultural Groundwater Use*, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264238701-en>.
- OECD (2019), *OECD Survey on Monitoring Progress in Agricultural Water Management*.
- OECD (2020a), "Nutrient balance" (indicator), <https://doi.org/10.1787/82add6a9-en> (accessed 24 August 2020).
- OECD (2020b), "Freshwater abstractions", <https://stats.oecd.org> (accessed 24 August 2020).