

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

GREECE

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

- Greece's agriculture mainly produces fruit, vegetables, olive oil, industrial crops (such as oilseeds) and cereals (Eurostat, 2019).
- Over the period 2011-2018, agriculture represented 82% of Greece's total freshwater withdrawals, the highest rate in the OECD (Eurostat, 2020). 36% of the agricultural area was irrigated (OECD, 2013). Around 40% of the total irrigation demand originates from groundwater (OECD, 2009). Agriculture is a large contributor of groundwater stress (OECD, 2015); intensive groundwater use has caused water levels to fall dramatically in some rural areas and illegal abstractions are a serious phenomenon (OECD, 2009).
- The nitrogen balance decreased between 2000 and 2018 from 82 to 59 kg/ha, and the phosphorus balance went down from 5 kg/ha to 0 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 82% of total water abstractions	Key pollutants from the agricultural sector are pesticides and fertilisers	In addition to severe droughts, Greece has been affected by floods in recent years

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: OECD (2009, 2013, 2015, 2019).

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 See more, 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 Ministry of Environment and Energy is responsible for the implementation of the WFD and the coordination of authorities working on the aquatic environment. The Ministry of Rural Development and Food (MRDF) is a co-authority as far as irrigation water management is concerned. To implement the WFD, 13 Regional Water Directorates were created as well as a specialised Central Water Agency, a governmental authority under Ministry for the Environment, Physical Planning and Public Works (YPEHODE), in charge of definition and oversight of national water policy. In collaboration with the 13 Regional Water Authorities, the Ministry of Environment and Energy formulates and upon approval by the National Council for Water, implements the River Basin Management Plans (RBMPs).</p> <p>Greece updated its water management framework by adopting a new Water Law in 2003 and measures and procedures for integrated water resource management in 2007. The new legislation is based on the EU WFD, with its emphasis on ecological functions of water, river basin management approach, economic evaluation and full-cost pricing of water services.</p>
<p>Main Evolution from 2009 to 2019</p>	<ul style="list-style-type: none"> ▶ Since 2012, the Ministry of Environment and Energy has established a national water monitoring network for the assessment of the status of surface water and groundwater, in order to obtain a comprehensive overview of water status within each river basin district. ▶ The mechanism for monitoring water services at the national level has been operational since 2018. ▶ In 2017, a new regulatory framework was issued regarding the general rules for cost evaluation and pricing of water services as well as the method and procedures for recovering the cost of water services in its various uses (JMD 135275/2017). ▶ The first River RBMPs of the country's 14 River Basin Districts (RBDs) were finalised between April 2013 and September 2015 and the Second RBMPs were adopted in 2017. The RBMPs set out the measures required to protect the aquatic environment and safeguard the efficient and sustainable water use. Most of the measures are related to agriculture and irrigation.
<p>Consistency between Agriculture and Water Policies</p>	<p>The sustainable use of irrigation water is closely related to the administrative structure of the providers of irrigation water (Land Reclamation Organisations; LRO) such as the supervision of LRO by Regional Authorities, the structure of boarding councils, and the reshaping of the means of collecting debts⁴.</p> <p>Farmers are incentivised to use water rationally as environmental costs are first instituted. The pricing of these costs (environmental tax) is used to restore water bodies to a "good" status in order to ensure productivity and sustainability for future generations.</p>

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

⁴ According to article 46 of Law 4456/2017 (GG 24/A) and article 66 of Law 4546/2018 (GG 101/A) Ministry of Rural Development and Food.

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>Yes: <u>New obligations were introduced within the framework of the Rural Development Programme (RDP) 2014-2020:</u></p> <ul style="list-style-type: none"> ▶ Increase of irrigation areas in water bodies of less than good status is not allowed ▶ water savings of at least 10% should be achieved for water bodies of good status ▶ Water management and water efficiency target indexes have been set 	<p>Metering, monitoring and reporting</p> <p><u>Within the framework of the RDP 2014-2020, there is a new obligation to install hydrometers in all new investments</u></p> <p><u>A National Register of Water Abstraction Points was established in 2014⁵</u></p> <p><u>The Ministry of Environment and Energy has established a national water monitoring network to assess the status of surface water and ground water for each river basin district⁶. The obtained data and information are stored in electronic systems, including the National Data Bank of Hydrological and Meteorological Information</u></p> <p><u>January 2019: The information system for the annual collection of operational and financial information of water supply service providers</u></p>
<p>Quantity targets accounting for climate change</p> <p>Yes</p>	<p>Scarcity pricing</p> <p>Yes: water pricing is differentiated by region</p> <p><u>In May 2017, a new regulatory framework “Approval of general rules for costing use of water services. Methodology of cost recovery of water services in its various uses”, ⁷ was issued. It provides general rules for the costing and pricing of water services and introducing the environmental and water resource cost.</u></p>
<p>Water entitlements</p> <p>Irrigation constitutes a water use that requires issuing a license⁸.</p> <p>Use rights and licences are granted to individual farmers or water suppliers</p>	<p>Enforcement measures</p> <ol style="list-style-type: none"> 1. Joint Ministerial Decision (JMD)146896/2014 "Licensing and Implementation of Water Development Projects" - OGG 2878/B/2014 (as amended). 2. Within the framework of the RDP 2014-2020, there is a new obligation to obtain a water licence for every water investment (private or public infrastructure) 3. The licensing of water use has been included in the obligations of Cross Compliance in the context of the Common Agricultural Policy 2014-2020 (Implementation of Cross Compliance under the application of Regulation (EC) No 1306/2013 of the European Parliament and Council (MD 1791/74062/02.07.2015).
<p>Proportion of cost recovery for surface water</p> <p>The average cost recovery rate of water providers for agricultural uses is 57% at the national level for both surface water and groundwater abstractions</p>	<p>Other policy instruments used to encourage water use efficiency</p> <ul style="list-style-type: none"> ▶ Subsidies ▶ Water supply cost recovery ▶ Farm advice and research ▶ Tax: <u>Since 2019, all farmers (private or public networks) are obliged to pay the environmental tax in case of water bodies with lower than good status</u> ▶ <u>The RDP finances actions oriented towards water efficiency such as Investments on water saving and the Irrigation infrastructures.</u>

Note: Underline indicates changes since 2009

⁵ JMD 145026/10.01.2014

⁶ JMD 140384 GG 2017/B/9.9.11

⁷ JMD 135275/2017 (OGG 1751/B/22-5-2017)

⁸ Joint Ministerial Decision (JMD) 146896/2014 "Licensing and Implementation of Water Development Projects" - OGG 2878/B/2014 (as amended).

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"> ▶ 2012: <u>The Ministry of Environment and Energy has established a national water monitoring network for the assessment of the status of surface water and ground water to obtain a coherent and comprehensive water status within each river basin district</u>⁹ ▶ 2014: <u>National Register of Water Abstraction Points</u>¹⁰ ▶ Based on the RDP2007-2013, the MRDF launched special monitoring programs of irrigation water in areas with intense farming. <u>In the areas of Macedonia, Thrace and Thessaly the program was concluded with data for 2012-2013 while in 2017 the program of monitoring chemical quality of irrigation water in water basins of Sterea Ellada was also launched.</u> 	<p>Main policy instruments</p> <ul style="list-style-type: none"> ▶ <u>Regulatory: RBMPs, National Action Plan for the Sustainable use of Pesticides,¹¹ Action Programmes for Nitrate Vulnerable Zones¹²</u> (The current Action programme covers 30 NVZs of the country, as opposed to the 7 NVZs designated until 2009.), Code of Good Agricultural Practice for the protection of waters against nitrate pollution of agricultural origin¹³, <u>Implementation of Cross Compliance</u> under the application of Regulation (EC) No 1306/2013 of the European Parliament and Council (MD 1791/74062/02.07.2015). ▶ <u>Economic: RDP 2014-2020 (Reduction of water pollution from agriculture)</u> finances measures or actions with the highest financial allocation to water quality management, are the action Reduction of water pollution from agriculture of measure 10 “Agroenvironmental and climate payments” and “Organic farming”.
<p>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas</p> <ul style="list-style-type: none"> ▶ Yes: <u>The actions of measure 10 (Agro-environmental and climate payments) of RDP 2014-2020, which are oriented towards water quality, target water systems with less than good quality, through the implementation of relative selection criteria</u> ▶ Digital geographic data (Land Parcel Identification System - LPIS) in combination with digital maps produced for the RBMPs are used for the identification of land parcels that fulfil the criteria 	<p>Enforcement measures</p> <ul style="list-style-type: none"> ▶ <u>Basic and supplementary measures of the 2nd RBMPs</u>

Note: Underline indicates changes since 2009

⁹ JMD 140384 GG 2017/B/9.9.11

¹⁰ JMD 145026/10.01.2014

¹¹ Law 4036/2012

¹² In conformity with the Directive 91/676/EEC

¹³ In conformity with the Directive 91/676/EEC.

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

Table 5. Water risks and responses

	Droughts	Floods
Risks	The decrease in rainfall is leading to the growing incidence and severity of droughts.	Recent flood events have been reported.
Key Policies	<p>Farmers can be supported to reduce drought risks within farm improvement plans.</p> <p>Drought and flood relief support can be provided with limits¹⁴</p>	<p>There are specific measures, “Rehabilitation of agricultural holdings damaged due to natural disasters” within the Flood Risk Management Plans (FRMPs) for all the RBDs that focus on agriculture</p> <ul style="list-style-type: none"> ▶ Land Use Management Plans in the Catchments of Torrents, ▶ Restructuring of cultivations in flooded areas, ▶ Restoration and Upgrade of drainage systems in flat cultivation areas, ▶ Flood protection infrastructure, ▶ Development of Early Warning Systems, ▶ Upgrading of Emergency Plans, ▶ Legislative action for the maintenance of torrents and rivers. <p>Drought and flood relief support can be provided with limits</p>
Main Changes from 2009 to 2019	“Strategic plans for the response to water scarcity and drought” are being developed for specific RBDs according to the RBMPs for the implementation of the WFD.	-
Factoring of Climate Change in Policies	Not estimated.	

Bibliography

- Eurostat (2019), *Agriculture, forestry and fishery statistics: 2019 edition*, Publications Office of the European Union, Luxembourg, <https://doi.org/10.2785/743056>.
- Eurostat (2020), Annual freshwater abstraction by source and sector, https://ec.europa.eu/eurostat/databrowser/view/ENV_WAT_ABS (Last data update: 05/11/2020).
- European Commission (2019), *The EU Environmental Implementation Review 2019 Country Report: Greece*, https://ec.europa.eu/environment/eir/pdf/report_el_en.pdf.
- OECD (2009), *OECD Environmental Performance Reviews: Greece 2009*, OECD Publishing, Paris, www.oecd.org/env/countryreviews/greece.
- OECD (2015), *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 7 August 2020).
- OECD (2020b), “Freshwater abstractions”, <https://stats.oecd.org> (accessed 7 August 2020).

¹⁴ According to Community Guidelines for State Aid in the Agriculture and Forestry Sector 2014-2020 (2014/C 204/01).