

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

UNITED KINGDOM

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

- The United Kingdom's agriculture mainly produces milk, cereals, cattle and poultry (Eurostat, 2019).
- Agriculture represented 14% of total water abstractions in 2016 (FAO, 2020).
- Diffuse agricultural pollution, notably from nitrates, remains an issue in parts of the UK: it affects 20% of surface water bodies and it is the most significant pressure for groundwater bodies. In particular, nutrient pollution represents the most significant impact on all surface water, with 34% of surface water bodies being affected. The nitrogen balance decreased between 2000 and 2017 from 107 to 86 kg/ha and the phosphorus balance went down from 10 kg/ha to 6 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 14% of total water abstractions	Key pollutants from the agricultural sector are nutrients (nitrogen and phosphorus), sediments, faecal contaminants, chemicals (including pesticides) and Antimicrobial Resistance	Increasing frequency of drought and flooding events

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: FAO (2020), OECD (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 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 Resources Act 1991 set out the functions of the national water regulator (the Environment Agency) and introduced water quality classifications and objectives. The Environment Agency has management control at the level of river basins. Responsibility for water regulation and policy implementation is devolved to England, Wales, Scotland and Northern Ireland.</p>
<p>Main Evolution from 2009 to 2019</p>	<ul style="list-style-type: none"> ▶ The UK has implemented new legislation in England to decrease diffuse pollution from agriculture through the 2018 Reduction and Prevention of Agricultural Diffuse Pollution Regulations. They are designed to complement the UK's implementation of the WFD and the Nitrates Directive. The new rules apply to all agricultural land in England and cover the application and storage of fertilisers and the management of soil and livestock. ▶ New Authorisations legislation in 2017 brings in regulation of small flow and other forms of irrigation into the abstraction licencing system. ▶ The Environment Agency has been investigating and changing permanent water abstraction licences that have caused environmental damage, reduced biodiversity and ecosystem resilience. Through Restoring Sustainable Abstraction (RSA), over two thirds of the original programme presented unsustainable abstractions. ▶ From 2018 to 2021, the Environment Agency is leading a programme of 10 Priority Catchments for Water Resources. The Agency encourages stakeholders in these catchments to work collaboratively to develop new solutions to improve water access and address sustainability issues using approaches such as rapid trading, high flow abstraction and making flow information available online for abstractors.
<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.

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 sector⁴</p> <p>No specific targets, but the Environment Agency 2009 Water for People and the Environment⁵ considers that the agricultural demand for water is expected to increase, e.g. due to predicted effects of climate change. It includes promoting small scale reservoirs, water efficiency and rainwater harvesting</p>	<p>Metering, monitoring and reporting</p> <ul style="list-style-type: none"> ▶ Metering: Yes, abstraction > 20m³/d needs an abstraction licence and such licences normally contain conditions requiring abstraction to be metered - other forms of measurement or assessment may be specified where metering is not possible. Some water transfer activities do not require abstraction to be measured or assessed as the volume of water taken is physically constrained to authorised volumes by abstraction equipment / infrastructure. ▶ Monitoring: Yes ▶ Reporting: Yes, if the abstraction limit on the licence is above 100m³/day ▶ The Environment Agency conducts analysis of water use and projections over 25 years
<p>Quantity targets accounting for climate change</p> <p>No</p>	<p>Scarcity pricing</p> <p>No</p>
<p>Water entitlements</p> <ul style="list-style-type: none"> ▶ Water abstraction licences are issued for quantities above 20m³/day for both surface and groundwater ▶ Licence is usually for 12 years and carry environmental conditions. The Environment Agency considers the impact the licence has on other users and the environment ▶ A consent from the Environment Agency is required for groundwater before pumping licence is granted. 	<p>Enforcement measures</p> <ul style="list-style-type: none"> ▶ Regulatory Enforcement and Sanctions Act (RES) 2008, <u>Statutory Instruments for Civil Sanctions in April 2010</u> ▶ <u>The Environment Agency makes use of the new enforcement powers (Civil Sanctions) from January 2011: A variety of sanctions outside of the criminal law is available but criminal sanctions (prosecution and formal cautions) are still available to use</u>
<p>Proportion of cost recovery for surface water</p> <ul style="list-style-type: none"> ▶ 100% of Operation and Maintenance ▶ 100% of Capital costs ▶ Abstraction charges are calculated by the Environment Agency scheme of abstraction charges. It allows the Agency to recover all its costs of managing and regulating water abstractions through annual "subsistence" charges. The charges are calculated based on the quantities of water authorised to be abstracted by a licence. <p>*This applies to England only</p>	<p>Other policy instruments used to encourage water use efficiency</p> <ul style="list-style-type: none"> ▶ Subsidies, Farm advice and research ▶ Support for adoption of water efficient technologies is provided to encourage energy saving in the use of technologies

Note: Underline indicates changes since 2009

⁴ [The Environment Agency National Framework](#) planning document published in March 2020 revises future agriculture demand. Additionally, the Framework seeks to: Understand and articulate national and regional water needs, Outline the contributions expected from each regional group consistently across government and regulators (regional groups are multi sector organisations which look to set out the regional contribution to the overall strategic need and look for optimal water resource solutions at a regional level), Address barriers to collaboration, Both the National Framework and regional groups will include agriculture and agricultural needs/demands. It also includes Implementation of No Deterioration in catchments where farming is a significant component, capping licensed agriculture abstraction, Environment Agency's unused and underused licences project to return catchments to a sustainable position.

⁵ Strategy for England and Wales, [Water for People and the Environment](#)

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"> ▶ Chemical and ecological monitoring by Environment Agency ▶ <u>Remote sensing to inform local targeting of mitigation measures</u> ▶ Decision Support Tools (e.g. <u>FARMSCOOPER</u>⁶) ▶ Water quality models (e.g. <u>European HYPE model</u>⁷) ▶ Sediment Finger Printing⁸ ▶ Catchment Sensitive Farming (CSF) Reporter: national database recording farmer engagement and advice delivery for Catchment Sensitive Farming 	<p>Main policy instruments</p> <ul style="list-style-type: none"> ▶ <i>Regulatory:</i> Farming Rules for Water⁹. <u>New rules were introduced in April 2018 to help protect water quality by standardising good farm practices. The rules require farmers to keep soil on the land; match nutrients to crop and soil needs, and keep livestock fertilisers and manures out of the water</u> ▶ <i>Economic:</i> Countryside Productivity Scheme (grants for equipment and other technologies) and Agri-environment payments through the Countryside Stewardship scheme ▶ <i>Information:</i> Free 1-2-1 farm advice provided by the Catchment Sensitive Farming (CSF) programme on water and air pollution and options for mitigating it. Available in 45% of England most at risk of water pollution. ▶ <i>Other:</i> 25 Year Environment Plan
<p>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas</p> <ul style="list-style-type: none"> ▶ Operation catchment analysis (<u>FARMSCOOPER</u>) ▶ <u>Geographic Information System (GIS) spatial targeting used for Countryside Stewardship</u> ▶ <u>National scale targeting of incentive and advice schemes to geographic areas with water quality issues and where mitigation measures can address them most cost-effectively</u>¹⁰ ▶ <u>Farm scale targeting using remote sensing data tools (e.g. ALERT</u>¹¹) 	<p>Enforcement measures</p> <p>Inspection of water services (advice-led) and farm holdings by Environment Officers</p>

Note: Underline indicates changes since 2009

⁶ <https://www.adas.uk/Service/farmscopper>

⁷ <https://www.smhi.se/en/research/research-departments/hydrology/hype-1.7994>

⁸ <https://repository.rothamsted.ac.uk/item/84787/tracing-catchment-fine-sediment-sources-using-the-new-sift-sediment-fingerprinting-tool-open-source-software>

⁹ <https://www.gov.uk/government/news/new-farming-rules-for-water>

¹⁰ <https://magic.defra.gov.uk/Help/cs-magic-interactive-map-guidance.pdf>

¹¹ <https://www.arcgis.com/apps/MapJournal/index.html?appid=c6cef6cc642a48838d38e722ea8ccfee>

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

Table 5. Water risks and responses

	Droughts	Floods
Reported Trends	Records over 200 years reveal an increasing frequency of drought events into the future.	No long-term evidence of changes in flood events, but climate change projections suggest the frequency and severity of flood events could increase, while flood risks might also increase because of changes in the use of farmland, and in the management of flood defence and drainage systems.
	Climate change is the biggest risk we face – the most recent climate change predictions confirm we will experience wetter winters and drier summers, with an increased likelihood of more intense rainfall leading to flooding. We can already see the impact of a changing climate, with increased flooding over the past decade, and summer heatwaves.	
Key Policies	<p>The Rural Payments Agency (RPA) provides rounds of grant support for water resources including reservoirs and water efficiency equipment.</p> <p>Water abstraction charges for farmers are higher for abstractions that occur during the drier summer months. Regulations exist to ban irrigation in times of drought.</p> <p>The Environment Agency Drought Plans (mandatory and regularly updated) are not specific to agriculture, but agriculture is considered one among other competing water users in times of drought.</p>	<p>There are no specific policies that address flood risk reduction in agriculture, but agri-environmental schemes can help reduce risks as a secondary objective (e.g. wetland conservation), and farmers benefit from national flood risk reduction management.</p> <p>Agricultural land will benefit from protection where defences are put in place – between 2015-2021 circa 285,000 ha of good agricultural land will be better protected helping avoid £1.5bn of direct damage.</p>
Main Changes from 2009 to 2019	The Environment Agency has applied a flexible abstraction approach ¹² since the summer of 2018 during prolonged dry weather and drought events. This includes refilling of winter storage reservoirs outside of the licensing period when environmental conditions allow.	Some indirect actions will contribute toward flood risk management of agricultural land, e.g. natural flood management measures, agri-environment schemes, internal drainage districts and internal drainage boards.
Factoring of Climate Change in Policies	Not estimated: The Environment Agency's 2009 WR Strategy shows the impact of climate change on water availability. The new Environment Agency's Water Resources Planning Framework factors in the likely increase demand for irrigation due to expected higher temperatures and drier summers.	

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: United Kingdom*, https://ec.europa.eu/environment/eir/pdf/report_uk_en.pdf.
- FAO [Food and Agriculture Organisation of the United Nations] (2020), FAO Aquastat. Retrieved from: <http://www.fao.org/aquastat/en/> (accessed 25 August 2020).
- OECD (2019), OECD Survey on Monitoring Progress in Agricultural Water Management.
- OECD (2020a), "Nutrient balance" (indicator), <https://doi.org/10.1787/82add6a9-en> (accessed 25 August 2020).
- OECD (2020b), "Freshwater abstractions", <https://stats.oecd.org> (accessed 25 August 2020).

¹² [flexible abstraction](#)