

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

DENMARK

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

- Denmark's agriculture mainly produces pigs, milk, animal products and cereals (Eurostat, 2019).
- Agriculture accounted for 39% of total water abstractions in 2018 (Statistics Denmark, 2020). Irrigation is solely dependent on groundwater resources; agriculture represented 60% of groundwater withdrawal in 2010 (OECD, 2015).
- Agricultural activities are the main cause for Danish land-based nitrogen load to coastal waters: 98% of coastal water bodies and 30% of lake water bodies are affected by diffuse pollution from agriculture (European Commission, 2019). The nitrogen balance went down from 132 kg/ha in 2000 to 80 kg/ha in 2015, and the phosphorus balance decreased from 13 kg/ha to 7 kg/ha during the same period (OECD, 2020).

Table 1. Main challenges related to water in agriculture

Water use ++	Water pollution +++	Water-related risks ++
Agriculture represents 39% of total water abstractions, and it is a significant user of groundwater resources	Key pollutants from the agricultural sector are nutrients (nitrates and phosphorus) in surface water and legacy (and authorised) pesticides (and their metabolites) and nitrates in groundwater	Denmark experienced an important drought in 2018

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

Key Policies	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).
Main Evolution from 2009 to 2019	<ul style="list-style-type: none"> ▶ The 2015 Food and Agriculture Package introduced a policy change known as “targeted regulation”. Until 2017, Denmark applied the same rules to all farmers by implementing the Nitrates Action Programme throughout the country. Since 2017, this regulatory base has been supplemented by a targeted catch crops programme and targeted regulation since 2019. The package now provides for targeted regulation of agricultural practices, based on the risk of pollution of coastal waters. ▶ A national map of retention of nitrogen from land to sea has been improved to support the targeted nitrogen regulation.
Consistency between Agriculture and Water Policies	<p>Consistency is ensured by targeted regulation, including catchment-specific possibility (or obligation, in case of insufficient uptake by the respective farmers) to establish field-based measures such as additional catch crops (or alternatives) and the incentive to establish “collective measures”, such as wetlands, afforestation etc.</p> <p>Location and dimension of efforts in targeted regulation derive from the River Basin Management Plans (RBMPs).</p>

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

Table 3. Key instruments for the management of water use

Quantified national future targets for the use of water resources in the agriculture sector No	Metering, monitoring and reporting Metering: Yes Monitoring: Yes Reporting: Yes
Quantity targets accounting for climate change <i>Unspecified</i>	Scarcity pricing No
Water entitlements Private property rights	Enforcement measures <i>Unspecified</i>
Proportion of cost recovery for surface water 100% for both Operation and Maintenance and Capital Costs	Other policy instruments used to encourage water use efficiency Green tax on water to encourage more efficient groundwater use in general

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

B.3. Policies to Control Agricultural Water Quality

A Food and Agriculture Package adopted in 2015 put in place “targeted regulation” of agricultural practices reflecting the risk of nitrate pollution of coastal waters. The aim was to focus nitrate reduction efforts on watersheds flowing into coastal waters threatened with eutrophication.

Table 4. Key instruments to improve water quality

<p>National water quality data collection tools</p> <ul style="list-style-type: none"> ▶ Marine waters are monitored for the relevant water quality elements and for the content in nutrients ▶ The transport of nutrients from land (point sources and diffuse sources) is monitored ▶ <u>As part of the Food and Agriculture Package from 2015, new monitoring stations of the transport of nutrient especially in rivers and streams have been established to improve the knowledge of the diffuse loss of nitrogen from land to sea</u> 	<p>Main policy instruments</p> <ul style="list-style-type: none"> ▶ <i>Regulatory:</i> <u>Targeted regulation (catch crop & alternatives) and collective measures (e.g. constructed wetlands, afforestation, setting aside of carbon rich soils)</u> ▶ <i>Economic:</i> Compensation of farmers with EU Rural Development funds ▶ <i>Information:</i> Catchment consultants were hired in order to help identify suitable locations for the establishment of collective measures like (constructed) wetlands. Cooperation with farmers organisation in order to facilitate collective measures
<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>Since 2016, based on the reduction needs according to the RBMPs, targets for reduction needs from agricultural activities are set at water catchment level</u> ▶ Maps have been developed indicating suitable areas for the establishment of wetlands etc. 	<p>Enforcement measures</p> <ul style="list-style-type: none"> ▶ The regulation includes the Act on agricultural use of fertiliser and nutrient-reducing measures (Fertiliser Act), the Act on environmental approval of commercial livestock and the Act on commercial livestock and use of fertiliser ▶ Farm nitrogen quota: The vast majority of Danish farmers are obliged to register in the Danish Register of Fertiliser and can hence only apply nitrogen fertiliser up to the fertiliser quota calculated for the farm for each plan period. If farmers fertilise in excess of the quota, they are sanctioned

Note: Underline indicates changes since 2009

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

Table 5. Water risks and responses

	Droughts	Floods
Reported Trends	Denmark experienced a drought in 2018 which triggered an awareness of potential climate change.	No evidence of an increased frequency of floods, but it is expected to increase due to climate change.
Key Policies	Financing of land consolidation concerning agricultural interests.	Field drainage may help mitigate against expected climate change impacts.
Main Changes from 2009 to 2019	<p>Charges on production have been relaxed in 2019 due to the drought in 2018. The state has financed charges in 2019.</p> <p>Revision of rules and regulation concerning water abstraction by agriculture making a quicker permit possible in future drought situations.</p> <p>An expert panel will be set up to analyse the economic situation of the agriculture sector in Denmark.</p>	-
Factoring of Climate Change in Policies	2-3/5: The municipalities handle municipal planning, water management and climate change adaptation, in which climate change and water resources are taken into account. Since 2018, rules and regulations concerning water abstraction by agriculture were changed.	

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: Denmark*, https://ec.europa.eu/environment/eir/pdf/report_dk_en.pdf.
- FAO [Food and Agriculture Organisation of the United Nations] (2020), *FAO Aquastat*. Retrieved from: <http://www.fao.org/aquastat/en/> (accessed 3 August 2020).
- OECD (2019a), *OECD Environmental Performance Reviews: Denmark 2019*, OECD Environmental Performance Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/1eeec492-en>.
- OECD (2019b), *OECD Survey on Monitoring Progress in Agricultural Water Management*.
- OECD (2020), "Nutrient balance" (indicator), <https://doi.org/10.1787/82add6a9-en> (accessed 3 August 2020).
- Statistics Denmark (2020), *Water and Waste Water*. Retrieved from: <https://www.dst.dk/en/Statistik/emner/geografi-miljoe-og-energi/groent-nationalregnskab/vand-og-spildevand> (accessed 3 August 2020).