

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

SWEDEN

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

- Sweden's agriculture mainly produces milk, forage plants, cereals, cattle and pigs (Eurostat, 2019).
- Agriculture represented 3% of total water abstractions in 2015 (FAO, 2020).
- The 2012-2015 report on the Nitrates Directive confirmed overall low nitrates concentrations in ground and surface waters (European Commission, 2019). The nitrogen balance decreased from 51 to 35 kg/ha between 2000 and 2017 but remains higher than the OECD average, and the phosphorus balance went down from 2 kg/ha to 1 kg/ha during the same period (OECD, 2020).

Table 1. Main challenges related to water in agriculture

Water use +	Water pollution ++	Water-related risks ++
Sweden has abundant water resources. Agricultural water abstractions represent 3% of total water abstractions	Key pollutants from the agricultural sector are nitrogen, phosphorus, and plant protection products	The severe drought almost halved the total harvested production of cereals in 2018; higher frequency of floods during the summer season in some water courses

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: Eurostat (2019), FAO (2020), OECD (2014, 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

Key Policies	<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 Environmental Code provides policy framework for water management and regulates the impact of agriculture on water habitats. The Swedish Rural Development Programme (RDP) includes subsidy measures for reduced nutrient leaching.</p> <p>In 2004, as part of the implementation of the WFD, Sweden was divided into five water districts based on the natural boundaries of watersheds. Each district has a regional water authority with a water delegation, an expert body that elaborates river basin management plans and water quality standards. Five County Administrative Boards (CABs) have been appointed as water authorities. They establish, assess, classify and monitor water bodies, as well as issue environmental quality standards within their administrative regions.</p> <p>The Swedish Agency for Marine and Water Management (SwAM) was established in 2011: It provides guidance to the regional water administration, and reports to the European Commission.</p>
Main Evolution from 2009 to 2019	<ul style="list-style-type: none"> ▶ Implementation of integrated pest management according to the directive for the sustainable use of pesticides in 2009⁴.
Consistency between Agriculture and Water Policies	<p>Implementation of integrated pest management and adoption of a National Food Strategy that provides guidance on the balance between water and agricultural objectives.</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: Sometimes Monitoring: No Reporting: No
Quantity targets accounting for climate change No	Scarcity pricing <i>Unspecified</i>
Water entitlements Entitlements for water used in agriculture are mostly owned by individual farmers or, in some cases, by associations for irrigation, which in turn, are owned by farmers. A small share comes from municipal water plants Land ownership is not required for water abstraction, but right of access is necessary from landowner or enforced by Environmental Court	Enforcement measures <i>Unspecified</i> (Quantitative regulations exist)
Proportion of cost recovery for surface water <ul style="list-style-type: none"> ▶ 100% of Operation and Maintenance ▶ 100% of Capital Costs 	Other policy instruments used to encourage water use efficiency <ul style="list-style-type: none"> ▶ Water supply cost recovery ▶ Farm advice and research ▶ Support for irrigation ponds when they provide environmental amenities

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

⁴ 2009/128/EG

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 (e.g. phosphorus, nitrogen, plant protection chemicals, aquatic fauna) ▶ Modelling (e.g. nitrogen and phosphorus losses from Swedish agriculture) ▶ National databases ▶ Surveys (e.g. on fertiliser and manure management in Swedish agriculture) 	<p>Main policy instruments</p> <p>Within the EU WFD, targets are set regarding good ecological status in the aquatic environment, and the the river basin management plans 2016-2021 specifies actions that are needed to reach those targets. Also, the Swedish environmental quality objectives describe the state in the environment that the environmental actions should result in. In addition, the Baltic Sea Action Plan sets quantitative targets for Swedish nutrient input reductions to the Baltic Sea.</p> <ul style="list-style-type: none"> ▶ Regulatory: Rules and regulations regarding handling (application, storage etc.) of fertiliser, manure and plant protection products ▶ Economic: <u>Support for agricultural measures aiming to improve water quality within the RDP 2014-20</u>, support for local measures for improving the marine environment, with reduced eutrophication as a top priority ▶ Information: Farm advisory services and information campaigns. "Focus on Nutrients" offers farmers knowledge and tools to implement cost-effective 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"> ▶ <u>Nitrate Vulnerable Zones are defined within the EU Nitrates Directive. There are stricter rules related to nutrient management for agriculture in these areas, and farmers in these areas can apply for financial support for specific environmental measures</u> ▶ <u>Development of a soil texture map with relatively high spatial resolution which enabled the creation of modelling tools that are used in water management</u> 	<p>Enforcement measures</p> <ul style="list-style-type: none"> ▶ Supervision of implementation and guidance for supervisors ▶ Sanctions if rules and regulations are not followed

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	Between 2015 and 2019, Sweden has experienced a prolonged period of drought.	A higher frequency of floods during the summer season has been observed in some water courses. Flooding has a greater impact on agriculture due to greater damage on crops and less capacity in ditches, channels and watercourses.
Key Policies	Farm advisory service, Research and Development	Much of the flood protection infrastructure (e.g. dykes) was constructed at the beginning of the 20th century. Support for wetlands, primarily for reducing nutrient pollution, also has a flood protection value.
Main Changes from 2009 to 2019	Due to recent droughts, investments in water irrigation ponds and interest in water conservation measures has increased.	Development of farm advisory services.
Factoring of Climate Change in Policies	2/5: Water resources and climate change have been highlighted in a number of official reports and government bills (e.g. Drinking Water Inquiry and Swedish Food Strategy). The heightened recurrence of dry years has led to a greater consideration of climate change.	

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