

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

ISRAEL

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

- Israel's agriculture produces significant volumes of fruit and vegetables (more than 3.5 million tons in 2019), cereals and legumes (about 214 thousand tons in 2019) and beef and sheep (almost 180 thousand tons in 2019) (Central Bureau of Statistics, 2020). Between 2000 and 2018, the share of livestock in the total agricultural production decreased from 45% to 41% (OECD, 2020c).
- Between 2000 and 2018, agriculture's share of freshwater abstractions has halved (decreasing from 64% to 35% of total water abstractions), largely due to changes in water management, especially the use of treated wastewater (recycled water) for irrigation (OECD, 2020c).
- In the meantime, nutrient surpluses have grown significantly: the nitrogen balance has increased between 2000 and 2018 from 189 to 236 kg/ha, reaching a level seven times above the OECD average, whereas the phosphorus balance has gone up from 66 kg/ha to 69 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 32% of total water abstractions. The agricultural sector is the largest water consumer but it relies on treated wastewater alongside with freshwater	Key pollutants from the agricultural sector are nitrogen, salinity (chloride, sodium), and pharmaceuticals (mainly antibiotics)	Israel experienced almost seven consecutive years of drought between 2003/04 and 2010/11, and a five-year long drought between 2013 and 2018

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: OECD (2011, 2019, 2020c).

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 Governmental Authority for Water and Sewage (Water Authority ⁴) was established in 2007 to concentrate Israel's water governance within a single administrative body. The Water Authority has overall responsibility for the water; it is responsible for the management, allocation and control of the country's water resources, from water abstraction to sewage treatment. Precisely, roles include regulating the production, supply and consumption of water; designing and implementing water supply schemes, preventing water pollution, and regulating water pricing. The Water Authority is an independent regulatory organ set by Water Law 1959 subject to Government Policy. The Water Authority Council is an interagency body chaired by the Director General of the Water Authority composed of high-level representatives of the Ministry of Environmental Protection (MoEP), the Ministry of the Interior (Mol), the Ministry of Finance, the Ministry of Agriculture and Rural Development (MARD), the Ministry of Energy ⁴ and 2 representatives from the public.
Main Evolution from 2009 to 2019	<ul style="list-style-type: none"> ▶ Changes in the water sources: minimal abstraction from the Sea of Galilee (for operational needs of the national water carrier); Reliance on desalination; Improving the use of recycled water. ▶ "Amendment 27 to the Water Law 1959"- Reforming the agricultural water pricing system into two flat rates to all the agricultural consumers (a "regular rate" and a reduced agricultural water price for producers located in areas lacking alternative water sources).
Consistency between Agriculture and Water Policies	There has been a gradual transition of agriculture to use recycled water for crop production. Boron treatments are used in all desalination plants so that agricultural production based on the mix of fresh water, including desalination, will not be affected.

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>Ongoing process: The Ministry of Agriculture is working on a long-term plan estimating water needs of the agricultural sector until 2050, based on scenarios of the development of water demand.</p>	<p>Metering, monitoring and reporting</p> <ul style="list-style-type: none"> ▶ All water consumption is metered and charged ▶ Distance water measurement on private water facilities and real-time reporting by the distance measurement system
<p>Quantity targets accounting for climate change</p> <p>Yes</p>	<p>Scarcity pricing</p> <ul style="list-style-type: none"> ▶ Yes: Difference between regular price for most of the country and a reduced agricultural price for producers located in areas lacking alternative water sources ▶ In the event of a drought, cuts can be made in the water quotas for agriculture both in the national system and in disconnected areas
<p>Water entitlements</p> <ul style="list-style-type: none"> ▶ Water is allocated to farmers by the state through quota ▶ Most of private suppliers are farmers/farmers' cooperatives 	<p>Enforcement measures</p> <p><u>Inspectors of the Water Authority are given permits to investigate the violations of the water law and to sanction</u></p>
<p>Proportion of cost recovery for surface water</p> <ul style="list-style-type: none"> ▶ The calculation of the cost of freshwater for agriculture is not separated into surface water, groundwater and desalinated water, but rather an all types of freshwater. However the production cost for each supplier is calculated and reduced from the uniform tariff. ▶ A special committee that deals with tariffs in the agricultural sector has been appointed by the Water Authority, and a report is expected to be published 	<p>Other policy instruments used to encourage water use efficiency</p> <ul style="list-style-type: none"> ▶ Public extension service ▶ Public Research and Development within MARD ▶ Support for investment in water infrastructure (within the Water Agreement) are given upon leakage reduction (diminution of up to 4%).

Note: Underline indicates changes since 2009

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

⁴ From May 2020, the Ministry of Water Resources

B.3. Policies to Control Agricultural Water Quality

Since 2010, new quality standards for effluents have been imposed through 37 quality parameters in order to be able to use treated wastewater for unlimited irrigation.

Table 4. Key instruments to improve water quality

<p>National water quality data collection tools <i>Unspecified</i></p>	<p>Main policy instruments</p> <ul style="list-style-type: none"> ▶ <u>Regulatory: Quality standards for effluents for agricultural irrigation</u> ▶ <u>Economic: Additional tariff on the polluting plants to improve the quality of the sewage and thus the quality of the effluents used for irrigation</u> ▶ <u>Information: Monthly report by the wastewater treatment plant on the quality of effluents</u> including reports to the farmers who consume the treated effluents.
<p>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas <i>Unspecified</i></p>	<p>Enforcement measures</p> <ul style="list-style-type: none"> ▶ By Ministry of Environmental Protection and Ministry of Health

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	While droughts are recurrent in the country, there is no solid evidence yet to determine that there is any change in their incidence or severity.	-
Key Policies	There are two support mechanisms for compensating farmers against drought damages: (1) Differential (by region) government participation in funding the income insurance plan for rain-fed edible wheat (in arid regions the government finances the premium up to 80% of the full premium) (2) Budgetary payment to growers, based on the Property Tax and Compensation Fund Regulations, when the government announces a drought year.	The government pays compensation in accordance with the Natural Disaster Law for agricultural infrastructures (land, access roads, etc.) that have been damaged by floods caused by an exceptional climatic event. The crop insurance plans provide protection against flood damage. These plans are subsidised by the government at the rate of 80% against natural disasters and 35% against natural damages in agriculture.
Main Changes from 2009 to 2019	The droughts between 2013 and 2018 was exceptional. It was concentrated in the northern part of the country, the area using local water resources and not connected to the National Water Carrier.	
Factoring of Climate Change in Policies	Not estimated. A 20% reduction in natural water replenishment (mainly in the north of the country) by 2050 is foreseen.	

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