

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

JAPAN

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

- Japan's agriculture mainly produces rice, cereals, dairy, livestock, fruit and vegetables. The share of livestock production is increasing overtime: in 2018, livestock accounted for 35% of the total agricultural production, increasing from 2000 (25%), whereas the share of crops in agriculture has decreased (from 72% in 2000 to 64% in 2018) (OECD, 2020c).
- Agriculture accounted for 68% of total water abstractions in 2018, 94% of which was used for paddy field irrigation. Irrigated lands represent 54% of Japan's agriculture area (OECD, 2020c).
- Japan's nutrient surpluses (nitrogen and phosphorus) are among the highest in OECD countries (OECD, 2020c). The nitrogen balance increased between 2000 and 2017 from 171 kg/ha to 180 kg/ha, whereas the phosphorus balance went down from 72 kg/ha to 57 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 68% of total water abstractions but paddy fields retain rainfall | Key pollutants from the agricultural sector are nitrogen and phosphorus | A series of large-scale natural disasters, including typhoons and heavy rains has been causing significant damages to the agricultural sector |

Note: +: Minor issue; ++: Problematic issue; +++: Major issue. Source: OECD (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 | <p>The 1964 River Act is the overarching legislation that covers all aspects of river administration, such as water control (including flood control and damage mitigation) and water use (permits etc.). The Act introduces a classification of rivers. Class I rivers are under the management of national government and Class II rivers are under the management of prefectures.</p> <p>Water quality in Japan is managed by the 1970 Water Pollution Prevention Act. The Act aims to prevent pollution in public water areas and to regulate drainage from factories and water penetration. In 1996, the Water Pollution Control Law was amended, incorporating measures to clean up groundwater pollution, and in 1997, Environmental Quality Standards (EQS) were established for groundwater pollution.</p> |
| Main Evolution from 2009 to 2019 | No main changes were made, but development of a system for appropriate irrigation water distribution ('basin water circulation model') using Information and Communication Technologies has been carried out by the National Agricultural and Food Research Organization (NARO) |
| Consistency between Agriculture and Water Policies | Agriculture, water governance, land, biodiversity and energy policies in agriculture are coordinated through the Basic Plan for Food, Agriculture and Rural Areas (the 10-year national agricultural policy plan). |

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

There has been no important changes in policies affecting agricultural water use since 2009.

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>No specific planning targets</p> | <p>Metering, monitoring and reporting</p> <ul style="list-style-type: none"> ▶ Metering: Yes for licenced use ▶ Monitoring: Yes for licenced use ▶ Reporting: Yes for licenced use ▶ Monitoring of precipitation and agricultural demand volume at each intake point in the reference year |
| <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 rights for surface water are categorised into customary water right and statutory water right, which are given licenses based on the River Act. The rights are granted by river administrator, the national or local government. ▶ Water rights for groundwater are not clearly allocated. Owners who have facilities like water pumps manage the water resource. Some local governments regulate groundwater use by ordinance ▶ River administrator permits water rights and volume of water for each agricultural area based on monitoring data, with renewal of rights assessed every 10 years | <p>Enforcement measures</p> <p><i>Unspecified</i></p> |
| <p>Proportion of cost recovery for surface water</p> <ul style="list-style-type: none"> ▶ Operation and Maintenance :100% ▶ Capital Costs: Unspecified % ▶ About 1% of 6000 Land Improvement Districts use volumetric charges | <p>Other policy instruments used to encourage water use efficiency</p> <p>Subsidies, water supply cost recovery, farm advice and research</p> |

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

Since 2009, there have been no new quantitative targets or objectives developed.

Table 4. Key instruments to improve water quality

| | |
|---|--|
| <p>National water quality data collection tools</p> <p>The national government collects the monitored data of public waters and groundwater based on an Ordinance of the Ministry of the Environment</p> | <p>Main policy instruments</p> <p>Water Pollution Prevention Act and Ordinances about water quality</p> |
| <p>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas</p> <p>No national-level spatial tools to target policies to particular areas</p> | <p>Enforcement measures</p> <p><i>Unspecified</i></p> |

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

Table 5. Water risks and responses

| | Droughts | Floods |
|--|---|--|
| Reported Trends | Damage from drought has not been reported in recent years, but regional droughts are present. | Heavy rainfall events (100 mm-over 200 mm per day) have been increasing significantly in the last surveyed 118 years. Data shows extreme rainfall (over 200mm a day) has increased by 60% between 1989 and 2018 compared with the early 20 th century (1901-1930). |
| Key Policies | No key policy instrument is specifically dedicated to droughts. The management systems used in paddy rice fields play an important role in maintaining water flows in dry periods, such as water circulation in paddy fields. | Flood hazard maps to indicate areas of potential damage in the event of floods damaging agricultural water retaining facilities. The management of paddy rice fields play an important role in flood risk reduction, especially through the water retaining capacity of paddy fields. |
| Main Changes from 2009 to 2019 | - | - |
| Factoring of Climate Change in Policies | 5/5: Climate change is taken into consideration in agriculture and water policies pertaining to risks; for instance, research is being conducted on climate change impacts on agriculture from pests and disease. | |

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