

# AGRICULTURE AND WATER POLICIES: MAIN CHARACTERISTICS AND EVOLUTION FROM 2009 TO 2019<sup>1</sup>

## NEW ZEALAND

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 Secretariat<sup>2</sup> and additional official sources.

### A. Agriculture and Water Characteristics

- New Zealand mainly produces cereals, dairy, livestock and non-food crops. **Livestock** products represent 79% of the total agricultural production in 2018 (OECD, 2020c). Between 1994 and 2017, there has been a significant shift from sheep and beef farming into **dairy farming**, most notably in Canterbury, Otago, and Southland, as the national dairy herd increased by 70% during that period, while numbers of sheep and beef cattle declined (LAWA, 2020).
- Agriculture is a prime and increasing **consumer of freshwater**: it accounted for 62% of total water abstractions in 2010 (FAO, 2020). Between 2002 and 2017, there has been a near doubling of New Zealand's **irrigated agricultural land** area (OECD, 2020c). Groundwater-based irrigation is mostly concentrated in one region – Canterbury – while surface water irrigation is more evenly distributed across the country.
- The total amount of **nitrate leaching from livestock** increased between 2009 and 2017 (LAWA, 2020). The nitrogen balance increased between 2000 and 2018 from 37 to 64 kg/ha, whereas the phosphorus balance went down from 13 kg/ha to 10 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 62% of total water abstractions. Increase in irrigation area and demand in some regions.  Some illegal water abstraction, but not precisely estimated	Key pollutants from the agricultural sector are pathogens from farm animal excreta, sediments from erosion of hill land and along water courses, nutrients from animal urine and fertilisers	Droughts increasing in frequency and severity in some areas across the country

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

<sup>1</sup> 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.

<sup>2</sup> 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 2019<sup>3</sup>

### B.1. Cross-Cutting Agriculture and Water Policies & governance

**Table 2. Key agriculture and water policies and policy changes**

<p><b>Key Policies</b></p>	<p>The <b>1991 National Resource Management Act (RMA)</b> is the key legislation governing overall water management. The RMA requires water users to acquire a permit or consent (limited use right), except for water used for drinking and livestock. Water permits may contain a number of conditions (e.g. volumetric controls, land titles, location of use). No specific instructions are placed on individual farmers other than conditions imposed on each resource consent. Under the RMA, local authorities (i.e., regional and unitary councils) must issue policy statements and plans setting forth objectives and approaches for the management of the natural resources in their jurisdiction. Water user groups have autonomy to allocate water among themselves. Applications for resource consents under the Resource Management Act can be for a collective group (e.g. group of farmers) or for individuals.</p>
<p><b>Main Evolution from 2009 to 2019</b></p>	<ul style="list-style-type: none"> <li>▶ A <b>National Policy Statement for Freshwater Management (NPS-FM)</b> was introduced in 2011, and updated and replaced in 2014. The government amended the Statement in 2017 to improve its water management. The purpose of the National Policy Statement for Freshwater Management is to help guide decision-making on freshwater management under the Resource Management Act at national, regional and district levels. The 2017 amendment brought about: (1) the introduction of national targets for swimmable lakes and rivers, (2) increase of direction for Te Mana o te Wai (the integrated and holistic well-being of the water), (3) providing direction for monitoring macroinvertebrates, (4) managing nitrogen and phosphorus, and (5) requiring regional councils to improve water quality for human health<sup>45</sup>.</li> <li>▶ The Essential Freshwater work programme was established in 2018. Its aim is to restore and protect New Zealand's freshwater thanks to three main objectives: (1) to stop further degradation and loss, (2) to reverse past damage and promote restoration, (3) to address water allocation issues.</li> </ul>
<p><b>Consistency between Agriculture and Water Policies</b></p>	<p>The NPS-FM allowed New Zealand to improve the coherence of policies related to water and agriculture.</p>

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

<sup>4</sup> The water policies announced in May 2020. They are new National Environmental Standards for Freshwater, Resource Management (Stock Exclusion) Regulations, Resource Management (Measurement and Reporting of Water Takes) Amendment Regulations, and legislative amendments to the Resource Management Act 1991. They strengthen policies that have been in place since 2011 and will have significant impacts on the dairy and sheep and beef industries as they aim to limit pollution from the sectors. Key actions include binding limits on nitrate and suspended sediment concentrations in waterways, restricting major agricultural intensification; implementing stronger controls for feedlots and stockholding areas; reducing excessive nitrogen use through a cap on synthetic fertilisers; excluding stock from waterways; and ensuring intensive winter grazing of forage crops meet standards. The policies also aim to reduce soil loss by strictly managing activities such as earthworks and land clearance; maintaining existing ecosystems by protecting streams and wetlands from draining or development; and controlling activities that can affect sources of drinking water.

<sup>5</sup> A new amendment of the Statement was amended 2020, in order to ensure all aspects of ecosystem health are managed, to provide greater direction on how to set limits on resource use, and to provide better protection of wetlands and estuaries.

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

**Table 3. Key instruments for the management of water use**

<p><b>Quantified national future targets for the use of water resources in the agriculture sector</b></p> <ul style="list-style-type: none"> <li>▶ No specific planning targets.</li> <li>▶ Regional Councils set limits on water take, but there are currently no specific policies to encourage water use efficiency in the agricultural sector. However, in 2010, <u>Resource Management Regulations were introduced*</u></li> </ul>	<p><b>Metering, monitoring and reporting</b></p> <p><u>Resource Management Regulations 2010 impose the instalment of water meters</u></p>
<p><b>Quantity targets accounting for climate change</b></p> <p>No</p>	<p><b>Scarcity pricing</b></p> <p>No standard national level information in regards to water scarcity by region</p>
<p><b>Water entitlements</b></p> <p>Limited use right through resource permits (consents)</p>	<p><b>Enforcement mechanisms</b></p> <p>National Resource Management Act ensures enforcement of compliance to permits</p>
<p><b>Proportion of cost recovery</b></p> <p>100% of Operation and Maintenance and Capital Costs</p>	<p><b>Other policy instruments used to encourage water use efficiency</b></p> <ul style="list-style-type: none"> <li>▶ Farm advice and research</li> <li>▶ A Proposed National Environmental Standard for Ecological Flows and Water Levels (NES) is currently in development in order to apply minimum flows.</li> </ul>

Note: Underline indicates changes since 2009. \* These Regulations were amended in 2020 to introduce telemetered information.

## B.3. Policies to Control Agricultural Water Quality

There is no overarching requirement to collect environmental information at a national level, and as such there are no national-level water quality data collection tools. Regional Councils may use spatial tools within their own region, but this varies from one region to the next. Since 2009, there has been the development of the Land Air Water Aotearoa (LAWA), a partnership between New Zealand's 16 regional and unitary councils, the Cawthron Institute and the Ministry for the Environment. It presents data and information at the regional and catchment scale on river water quality, lake water quality, recreational water quality, and groundwater quality and water quantity.

**Table 4. Key instruments to improve water quality**

<p><b>National water quality data collection tools</b></p> <p>Only regional monitoring</p>	<p><b>Main policy instruments</b></p> <p><u>Regulatory instruments: National Policy Statement – Freshwater Management (NPS-FM) and Regional Policy Statements</u></p>
<p><b>Spatial tools (e.g. topological, geometric, or geographic data analysis) to target policies in specific areas</b></p> <p>No national-level spatial tools to target policies to particular areas</p>	<p><b>Enforcement measures</b></p> <p>Infringement offences and notices through the Resource Management Act</p>

Note: Underline indicates changes since 2009

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

**Table 5. Water risks and responses**

	Droughts	Floods
<b>Reported Trends</b>	More frequent droughts are expected to increase the demand for irrigation water by agriculture.	Recent flood events have resulted in substantial economic losses to farms. Probable increase in the frequency and severity of floods in the future.
<b>Key Policies</b>	The Community Irrigation Fund was established in 2007 and aims to prevent water shortages in agriculture. It provides half the costs for appropriate activities that limit risks from water shortages. The Sustainable Farming Fund provides support for feasibility studies of water storage for irrigation.	The Ministry of Environment Flood Risk Management Review was established in 2007 to examine three key topics: the role of government (at different jurisdictional levels) and communities in managing flood risks; funding of flood mitigation; and current flood risk management practices.
<b>Main Changes from 2009 to 2019</b>	The On-farm Adverse Events Recovery Framework, managed by Regional Councils, provides support for farm advisory services. They notably promote the use of mixed land use (forestry/agriculture), soil conservation practices that retain soil moisture.	The On-farm Adverse Events Recovery Framework promotes wetlands to reduce flood risks. A special recovery measure can be made available by decision of the central government. It provides financial assistance to damaged farms businesses and can reimburse a share of the costs for restoration measures, re-establishment of uninsurable pasture, crops and forestry, and initial clean-up and recovery.
<b>Factoring of Climate Change in Policies</b>	Not estimated. Water policy and climate change policy are becoming more inextricably linked, as climate change projections suggest an increase in the frequency and severity of droughts and floods in some areas.	

## Bibliography

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