

Productivity, changes and resilience in New Zealand grassland agriculture over the last three decades

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Additional File 1: Table A1.

Table A1 Policies and legislation that may affect New Zealand grasslands.

Legislation/Policy	Area of impact
Emission Trading Scheme	The New Zealand Emissions Trading Scheme (NZ ETS) is a Government tool for meeting domestic and international climate change targets. The scheme aims to encourage people to reduce greenhouse gas emissions. The NZ ETS puts a price on greenhouse gas emissions. It creates a financial incentive for landowners to earn money by planting forests that absorb carbon dioxide as the trees grow.
He Waka Eke Noa	Climate change focus on mitigation. Implemented through a MfE, MPI, primary sector and Maori partnership. Legislated under Zero Carbon Amendment Act to be implemented by 2025. Focussed on methods for estimating emissions on-farm, developing and implementing farm plans and devising an alternative pricing scheme for agriculture.
Adaptation Risk Assessment/Adaptation plans national	Climate change focus on adaptation risk assessment and plans legislated through Zero Carbon Act. Working through MfE and the Climate Change Commission. The primary sector will be affected by climate change and will need to adapt including pastures.
Adverse events policy	Policies to address issues due to adverse events e.g., drought, floods, fire, biosecurity through MPI. Includes addressing feed shortages, pasture recovery requirements.
MPI forestry erosion programs	<i>Erosion Control Funding Programme</i> MPI provides funding through the Erosion Control Funding Programme (ECFP) to Gisborne district landholders and community groups to help reduce wide-scale erosion problems. <i>Hill Country Erosion Programme for councils</i> The Hill Country Erosion Fund (HCE) helps protect erosion-prone hill country. It provides leadership and targeted support to regional councils and unitary authorities.
Zero Carbon Act	Four factors set a new domestic greenhouse gas emissions reduction target for New Zealand to: - reduce net emissions of all GHGs (except biogenic methane) to zero by 2050. - reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030 - establish a system of emissions budgets to act as stepping-stones towards the long-term target. - require the Government to develop and implement policies for climate change adaptation and mitigation. - establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals.
Water Reforms policy	Policies to address the water quality elements of nitrate, phosphate, <i>E. coli</i> , and sediment. Manufactured nitrogen fertiliser limit of 190 kg/ha

	only on grazed pasture (not crops), slope class, etc. Objectives are to limit effects of wintering. The following factsheets have been developed to provide an overview of the Essential Freshwater policies and regulations that came into force on 3 September 2020. Essential Freshwater overview - <i>Te Mana o te Wai</i> - <i>Wetlands</i> - <i>Rivers</i> - <i>Fish passage</i> - <i>Agricultural intensification</i> - <i>Intensive winter grazing</i> - <i>Stockholding and feedlots</i> - <i>Stock exclusion</i> .
National Policy Statement on highly productive land	Seeks to address impact of urban spread onto highly productive (HP) soils. Affects district planning. Not legislated yet. The area affected is hard to estimate, particularly as some aspects of the policy are still being developed. The starting point is Land Use Capability Class 1-3 land, which encompasses 3,831,000 ha. The true figure will be smaller due to factors such as: <ul style="list-style-type: none"> - Councils must map 'large and cohesive' areas which may preclude some smaller isolated bits of LUC1-3 from being considered HP. - Land disqualified as HP due to a range of long term or permanent constraints.
The National Environmental Standards for Plantation Forestry (NES-PF)	Provides nationally consistent regulations to manage the environmental effects of forestry. National Environmental Standards (NES) are regulations made under the Resource Management Act 1991 (RMA) and: <ul style="list-style-type: none"> - set out technical standards, methods or requirements relating to matters under the RMA - provide consistent rules across the country by setting planning requirements for certain specified activities.
Government regulation regarding registration of environmental mitigation technologies	Seeks to address regulation of environmental mitigation products through the Agricultural Compounds and Veterinary Medicines Act (ACVM) and is currently being considered. Seeks to ensure that claimed environmental migration technologies meet specified regulatory standards.
The Environmental Reporting Act	The Environmental Reporting Act has implemented a system of reporting of data on environmental domains: climate, air, water, land and their associated indicators as well as an overview report on a regular cycle. These reports highlight the impacts of sectors on the environment and any associated change. They also provide valuable insights into trends that can be linked to any policies implemented on grasslands including land-use change and impacts on contaminants on water and land.
Draft National Policy Statement for Indigenous Biodiversity	The proposed National Policy Statement for Indigenous Biodiversity (NPSIB) sets out the objectives and policies to identify, protect, manage and restore indigenous biodiversity under the Resource Management Act 1991 (RMA). The consultation closed in March 2020. Still to be presented to Parliament.
Review of the Resource Management System	<i>New Directions for Resource Management in New Zealand</i> is the most significant, broad-ranging and inclusive review to take place within the system since the Resource Management Act (RMA) came into force in 1991. They recommended two major new pieces of interrelated legislation: the repeal of the Resource Management Act 1991 (RMA) and its replacement with new legislation. They have suggested that it be named the Natural and Built Environments Act (NBEA). This would have a substantially different approach but would incorporate some of the key principles of the RMA that remain appropriate - new legislation which is called the Strategic Planning Act. The next step in the reform process will be a consultation to develop government policy and the form of future legislation.
Science and Innovation Investments	'Fit for a Better World' seeks to boost primary sector economic potential.

	Food and Beverage Industry Transformation Plan (in development) Forestry and Wood processing Industry Transformation Plan (in development) Agritech Industry Transformation Plan (in implementation phase) Future Pathways green paper seeking input for reform of the science system.
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