



Inspiring Agriculture

Cumulative Impact of Government Policy on New Zealand Sheep and Beef Farms

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BakerAg NZ Ltd

Client Report

Cumulative Impact of Government Policies on New Zealand Sheep and Beef Farms

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EXECUTIVE SUMMARY

New Zealand's red meat sector plays a vital role in the country's economy. It is an important source of income and employment, contributing significantly to the country's gross domestic product and vibrant rural communities.

However, the sector faces a number of challenges given its aging farming population, challenges with succession, decline in value for wool products, and pressure to change land use among others. Some challenges stem from government legislation and policy initiatives, which can have both positive and negative impacts.

This report gives a high-level summary of the core policies which affect sheep and beef farming operations in New Zealand and outlines implications for farmers.

Over the past six years, **the New Zealand government has introduced more than 20 new regulations that directly affect agriculture**. These are in varying stages of adoption from consultation to being passed into law. The topics of these initiatives are largely centred around managing the impact that farms have on the natural environment with a focus on biodiversity, the freshwater health and greenhouse gas (GHG) emissions.

Most of these regulations have been developed in isolation, with little analysis of the economic impact of each rule, let alone the cumulative impact of them.

To provide a greater understanding of the cumulative impact of Government policies on sheep and beef farms, a case study approach was taken to measure the impacts these policies had on specific farms. Four farms were selected in partnership with Beef + Lamb New Zealand. These farms were chosen for their geographic location as well as difference in farm class types. They are located throughout New Zealand with two farms in the North Island and two in the South Island. Further insights on the positive and negative aspects of government initiatives were discussed with each of the case study farms, as well as potential impacts on the businesses, both from financial and personal perspectives.

The impacts of different policies to varying degrees on the farms studied is significant, both from a personal and financial perspective. While varied, the policies that are impacting on these farms are likely to be impacting on many other farms across the country. Farm 1 is a finishing farm that is primarily impacted by ongoing resource consenting requirements and tax on GHG emissions. Farm 2 is a large scale Wairarapa Hill Country farm which is primarily affected by stock exclusion regulations which would see a capital investment of more than \$1.25 million to comply. Farm 3 is a finishing farm in Southland that has not grazed dairy cattle over the National reference period of 2014-2019 for intensification of landuse. This sees the farm value pegged to non-dairy grazing levels, which represents a potential loss of \$2.9 million in land value. Farm 4 is a high-country station which is impacted significantly by local and regional council legislation preventing them from subdividing or diversifying land use. All four farmers voiced a number of frustrations about the regulations with rules either being seen as

unworkable, or the magnitude of legislation now making them reconsider their future in the industry.

One-off and ongoing costs to the farm businesses as a result of central and regional or local government rules are summarised in Table 4 and *Table 5* in section 4.3. Costs have been split into one-off and annual costs and further split into opportunity and real costs. Each farm is unique in the policies that impact it, similarly, the costs it incurs as a result. Farm 1 is faced with one-off costs of \$75,000 and annual costs of around \$88,000, all of which are real costs. Farm 2 is primarily impacted by opportunity costs around stock exclusion rules with one-off costs totalling \$1.26m. Annual real costs total around \$16,000. Farm 3 is primarily impacted by a potential loss in land value with a one-off opportunity cost of \$2.9m. Annual costs for Farm 3 total \$34,000 in opportunity costs and around \$11,000 in real costs. Farm 4 is primarily impacted by local and regional council rules that are tougher than national rules. The financial impact could be significant with a one-off opportunity cost of \$35m if sections cannot be subdivided and one-off real costs of \$255,000. Farm 4 faces an annual loss of income opportunity cost of around \$350,000 for limitations to landuse and real annual costs of around \$27,000.

Key recommendations as a result of this work are centred around reviewing the currently drafted legislation and **ensuring sufficient time and consultation is given to policies before they are implemented**. A number of policies include wording that is vague which adds to confusion and frustration for farmers. Some legislative instruments can be challenged but not all have that opportunity. Ensuring farmers have the opportunity to challenge a given regulatory change due to the possibility of significant impacts on their farming business should be part of the consultation process. It is also recommended that the Government undertake its own review of the cumulative economic impact of its environmental policies on farmers and ensure that policies are needed, fit-for-purpose and do not work against each other.

As it has become evident through each of these case studies, **the impacts on farms are unique and there are a number of unintended consequences as a result of poorly written or vague policies**. Many farmers are finding the pace of introduction of policies overwhelming, and coupled with updates to local and regional council rules and plans there is confusion around what is required to be compliant. Of those farmers interviewed, the majority found Freshwater Farm Plans had the potential to be a practical and welcome way to navigate these policies and ensure solutions are fit-for-purpose to individual farms and farmers but the plans needed to be practical, outcomes-based, and it was acknowledged farmers would require access to qualified advisors to support their uptake.

ABBREVIATIONS

Abbreviations used throughout this report:

Abbreviation	Description
CW	Carcass weight
DOC	Department of Conservation
ETS	Emissions Trading Scheme
FWFP	Freshwater Farm Plan
FWFPs	Freshwater Farm Plans
FMU	Freshwater Management Unit
GDP	Gross Domestic Product
GHG	Greenhouse gas
GIS	Geographic Information System
ha	Hectares
HWEN	He Waka Eke Noa
IWG	Intensive Winter Grazing
kgCO ₂ -e	Kilograms of Carbon Dioxide equivalents
kgCW	Kilograms Carcass Weight
LUC	Land use Classification
NES-DW	National Environment Standard Drinking Water
NES-F	National Environment Standards for Freshwater
NES-PF	National Environmental Standards Plantation Forestry
NPS-FM	National Policy Statement for Freshwater Management
NPS-HPL	National Policy Statement for Highly Productive Land
NPS-IB	National Policy Statement for Indigenous Biodiversity
N	Nitrogen
NZU	New Zealand Unit – emissions unit
RMA	Resource Management Act
SNA	Significant Natural Area
su	Stock unit(s)
SWRMP	Source Water Risk Management Plan

1. INTRODUCTION TO NEW ZEALAND'S RED MEAT SECTOR

New Zealand's red meat sector plays a vital role in the country's economy. It is an important source of income and employment, contributing significantly to the country's gross domestic product (GDP). The sector encompasses the production, processing, and export of beef and lamb products, which are highly regarded for their quality and food safety.

As at 2022, New Zealand's sheep and beef sector covered 8.8 million hectares (ha) across 23,403 farms and consisted of 25 million sheep and 4 million beef cattle spread evenly between the North and South Islands (Statistics New Zealand, 2022). New Zealand red meat farmers are amongst some of the most efficient in the world with an average lambing percentage of 130% and sale lamb and cattle carcass weights (CW) of 19 kg CW and 310 kg CW, respectively in 2022 (Beef + Lamb New Zealand, 2022).

New Zealand's sheep and beef sector is part of our cultural identity with 93% of farms run by owner-operators and their families. The sector employs 92,000 people each year; 36,000 through direct employment and 56,000 through indirect employment (Beef + Lamb New Zealand, 2022).

Red meat and co-product exports totaled \$11.48 billion with wool adding another \$452 million in 2022 (Beef + Lamb New Zealand, 2022). Key lamb markets are North Asia (China), North America, the European Union and Great Britain while North America and North Asia are major importers of our beef. Overall, on-farm production has improved over the past 10 years with net meat production per hectare lifting by 23% (Beef + Lamb New Zealand, 2022). Although wool adds export value to the sector, poor farm gate prices have driven many farmers to focus on meat rather than wool characteristics in their breeding programs.

Sheep and beef farms are home to significant biodiversity, with a contribution of 2.8 million hectares or 25% of the total native vegetation in New Zealand (Norton & Pannell, 2018). Since 1990, the area of forestry and native vegetation on-farm has increased while the area used for sheep and beef farming has declined. New Zealand sheep and cattle have some of the lowest carbon footprints in the world with sheep producing 6.01 kg CO₂-e per kg and cattle 8.97 kg CO₂-e per kg, which is 8.19 kg CO₂-e per kg and 5.13 kg CO₂-e per kg lower than world average studies (Beef + Lamb New Zealand, 2022). Nitrogen (N) use on sheep and beef farms is typically low at 17 kg N/ha/yr, compared to 30-40 kg N/ha/yr for other agricultural and horticultural land uses (Beef + Lamb New Zealand, 2022).

2. OVERVIEW OF NEW ZEALAND GOVERNMENT INITIATIVES

Over the past six years, the New Zealand government has introduced **more than 20 new regulations, laws and reforms that directly affect agriculture**. These are in varying stages of adoption from consultation to being passed into law. Many of the regulations, laws and reforms are supposed to come into effect in 2025. Some of the rules will require changes or updates to regional plans and planning processes which could lead to further new rules and consenting processes. Some reforms have undergone many iterations, for example, with the National Environment Standards for Freshwater 2020 (NES-F) having been amended four times since its inception. These initiatives are largely centred around biodiversity, water quality, and emission reductions. A summary by Beef + Lamb NZ of key dates and anticipated costs is presented in *Appendix A*.

2.1 Climate Change

New Zealand's Greenhouse Gas (GHG) emissions profile is unique for a developed country in that over half of our total GHG emissions can be attributed to livestock and agriculture (Ministry for Primary Industries, 2023). The key climate change law is the Climate Change Response Act which was amended in 2019 to include emissions reduction targets. Two key policy tools in regard to climate change are the Emissions Trading Scheme (ETS) and the proposed He Waka Eke Noa (HWEN) on-farm emissions pricing system.

Emissions Trading Scheme

Large scale afforestation, particularly by offshore investors has increased in scale and pace in recent years. This afforestation is primarily newly planted exotic forests that are being entered in the ETS which was introduced in 2008.

The ETS is the New Zealand Government's main tool for reducing GHG emissions in order to meet domestic and international climate change targets set by the Climate Change Response Act 2002 (Ministry for the Environment, 2023). In its simplest form the New Zealand Government gives emission units (NZUs) to GHG absorbers under the ETS while emitters are required to surrender NZUs to the Government each year (Environmental Protection Authority, 2023). The number of NZUs provided by Government to the market is limited and will decrease over time in line with New Zealand's emission reduction targets. Units are priced based on supply and demand, but the Government has set a collar and cap on the price as well as a cap on the number of units offered at auctions.

For a forest to be registered in the ETS it must meet the forest land definition which is outlined in *Appendix B*. Production (harvested timber) and permanent (planted for the sole purpose of producing carbon credits) pine forests can be entered in the ETS as well as native species and other woody and non-woody vegetation.

Afforestation and the ETS have provided significant opportunities for some farm businesses. This includes increased potential cashflow from planted forests and increasing land values in areas where forestry companies have sought land. Afforestation has also provided opportunities for farmers that are looking to exit the industry and those who are looking to plant areas of their farm as a vehicle for succession or development on remaining areas of the farm.

However, large scale afforestation, particularly carbon afforestation, has come at the expense of stable jobs and rural communities (Harrison & Bruce, 2019). This is because many carbon forests are never intended to be harvested and there are no conditions¹ on the management of this land into the future. Additionally, production forests do not provide as many stable jobs on an annual basis as sheep and beef farming (Harrison & Bruce, 2019). This is because of the irregular workstreams for planting, pruning, thinning and harvest and the often-transient nature of this work. In the latest Intergovernmental Panel on Climate Change (AR6) report released on 28 February 2022 (IPCC, 2022) the practice of planting large areas of monocultures (i.e., large scale *Pinus Radiata* afforestation) was placed among the worst practices for accelerating a loss of biodiversity, while maintaining or restoring natural species was placed among the best practices (IPCC, 2022).

Increases in sheep and beef farm sales to forestry have been accelerating from 7,000 ha converted to forestry in 2017 to 52,400 ha in 2021 (Orme & Associates Limited, 2022). Anecdotally, increased land prices coupled with rising input costs because of regulation and on-farm inflation are making it difficult to enter the farming industry as a landowner. Given that on-farm returns from carbon farming are currently well in excess of returns from red meat production, further regulation and increased operating costs may facilitate greater conversions from farmland to forestry and carbon farming.

He Waka Eke Noa - Pricing of Agricultural Emissions

The pricing of GHG emissions is a key policy mechanism used within New Zealand, and internationally, to encourage a reduction in emissions. Unlike other sectors within New Zealand, farmers and producers are not currently required to surrender NZUs for their (methane and nitrous oxide) emissions through the ETS.

In 2019, the Government proposed bringing agriculture into the ETS. This would have linked the price of methane and nitrous oxide to the carbon price. The key disadvantage to this is that regardless of the progress agriculture was making towards achieving emissions reduction targets the price of methane and nitrous oxide emissions would lift if the carbon price increased. As an alternative to this, the He Waka Eke Noa (HWEN) partnership was developed between industry, Māori and the Government.

The HWEN partnership was formed to develop an alternative emissions pricing framework that could be practical, reward positive change, and support emissions reductions while

¹ Afforestation of production forest is limited in some areas under the National Environmental Standards for Plantation Forestry (NES-PF).

maintaining or increasing sequestration (He Waka Eke Noa, 2023). The partnership recommended an approach that differentiates between the short- and long-lived emissions from ruminant animal production and that recognises the adoption of emission mitigating actions as well as the additional carbon stored in on-farm vegetation. The HWEN partnership presented their recommended settings to Government in mid-2022 and the Government consulted on their preferred approach at the end of 2022.

At the time of completing this report, the final pricing systems and settings were yet to be determined by Government. As it stands, the pricing of emissions will be set by the Government with limited industry input. Initial calculations were based on a maximum 11 c/kg for methane and \$4.25/t eCO₂ for long lived gasses (nitrous oxide and carbon dioxide) (He Waka Eke Noa, 2022). These values have been used for calculating emission costs in this report and are outlined in *Appendix B*.

Pricing agricultural emissions is perhaps one of the most impactful in terms of implications on-farm. The Government's own modelling indicated that a price on agricultural emissions could have significant implications for the financial viability of farmers, particularly sheep and beef farmers. At a price of 11 c/kg for methane and \$10.86/t eCO₂ on nitrous oxide the Government has estimated a potential 21% reduction in sheep and beef production as a result of the combination of a price on emissions and afforestation by 2030 (Ministry for the Environment, 2022).

Pricing agricultural emissions could yield improved market returns; however, it is unclear at this stage if consumers are willing to pay a premium.

2.2 Waterways and Biodiversity

The New Zealand Government has introduced a number of measures to protect waterways and biodiversity. Key initiatives include the National Policy Statement for Indigenous Biodiversity (NPS-IB), National Policy Statement for Freshwater Management 2020 (NPS-FM), National Environmental Standards for Freshwater (NES-F), stock exclusion regulations, Freshwater Farm Plans, water reporting regulations and the Three Waters reforms including amendments to human drinking water standards.

National Policy Statement for Indigenous Biodiversity

Proposals to protect current biodiversity and promote new biodiversity are wide ranging and a number of their impacts remain unknown. The key proposal; the National Policy Statement for Indigenous Biodiversity (NPS-IB) was still in draft form at the time of compiling this work but is now enacted. The NPS-IB aims to protect indigenous biodiversity including within mountain forests, regenerating bush, native scrub and grasslands (Ministry for the Environment, 2022).

It is intended that the NPS-IB enhances provisions in the Resource Management Act 1991 (RMA) for maintaining and protecting indigenous biodiversity. The Ministry for the Environment believes that the current provisions are not detailed enough which have allowed for misinterpretation, as well as limited application and monitoring by councils (Ministry for the Environment, 2022).

Key aspects of this proposal are to identify and manage Significant Natural Areas (SNAs) and ensure biodiversity is maintained so there is no reduction in: the size of native flora and fauna populations, natural habitats of indigenous species, function of ecosystems and habitats, protection of a full range of New Zealand's ecosystems, connectivity and buffering around ecosystems, resilience and adaptability of ecosystems (Ministry for the Environment, 2022).

Significant Natural Areas have been identified by a number of councils to date, but they have used different criteria and there are currently no rules attached to the SNA. The purpose of the NPS-IB is to standardise criteria for identification of SNAs and ensure uniformity among rules used to manage the adverse effects of new use in or around these areas, including development. District councils will be required to map all SNAs in their regions by a certain date. This is likely to lead to a whole new planning process.

For farmers, the implications are wide ranging. Where SNAs are identified on-farm, landowners will need to clearly demonstrate and prove existing landuses e.g., pasture renewal or scrub clearing, were occurring before the NPS-IB was implemented to be able to continue that activity on the land in the future. Farmers will not be able to intensify land use within an SNA, or land adjacent to an SNA, that could have an adverse effect on the SNA without permission via a resource consent.

The definition of an SNA in the current draft regulation is very broad and captures all biodiversity, and not just "significant" biodiversity. In some areas of New Zealand, such as the West Coast and Northland, the definition of a SNA could see 50% or more of a farm classified as a SNA potentially subjecting significant amounts of farmland to consenting processes. Those farmers that have taken steps to protect the biodiversity on their farms (though allowing regeneration or planting native flora on farm) over the last few decades will be the most affected as more land on their farm will be identified as an SNA. The potential that areas of native plantings could be classed as a SNA could disincentivise farmers from new plantings.

Changes to grazing within an SNA may be required by Councils if existing land use cannot be quantified. Land use options could be limited if highly mobile fauna e.g., New Zealand Falcon are present or use that area as part of their habitat.

The framing of many of these rules mean that biodiversity is more of liability than an asset on-farm. Anecdotally, some farmers have significant concerns about the value of their farm in the future if a large proportion of it is classified as an SNA.

National Policy Statement for Freshwater Management

Legislation and proposals around freshwater health, quality and protection are key areas of focus of recent Government policy and proposals. One key instrument that was introduced in 2020 and updated in 2023 is the National Policy Statement for Freshwater Management (NPS-FM). This instrument provides a structure and standards that regional councils must follow to review and update their existing freshwater management principles and rules. A key concept within the NPS-FM is Te Mana o te Wai which places a greater focus on freshwater health over freshwater quality.

The hierarchy of obligations in Te Mana o te Wai prioritises the health and wellbeing of water bodies above all else. Second to this comes the health and needs of people, such as drinking water, followed by the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

Water Use

Since freshwater health, not its use, is the top priority under the NPS-FM, stock water access and use may no longer be an automatic right for farmers. It may need to be a consented activity in some areas as the ecological value of the lakes/rivers/streams come first. Resource consents may be required by farmers in such areas.

Water Quality

The NPS-FM requires every regional council to develop long-term objectives for freshwater in partnership with Iwi and the wider community. Goals must be ambitious but reasonable, time bound, and can be set at a Fresh Water Management Unit (FMU) or catchment level (Ministry for the Environment, 2023). Baselines for different attributes including phosphorus, nitrogen, and sediment will be set. Any misalignment from these baselines is considered degradation and therefore needs to be addressed. Over the next few years Regional Councils are expected to update their regional plans to reflect these new baselines lines which is likely to lead to more new rules and consenting requirements.

Wetlands

A natural wetland is defined by the RMA as “*permanently or intermittently wet area, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions*” (Ministry for the Environment, 2022). Under the NPS-FM the definition is similar but focuses on natural inland wetlands. This focuses on wetlands that are not: in coastal areas; deliberately constructed; those that have developed around deliberately constructed water bodies; geothermal wetlands; or an area of pasture used for grazing and more than 50% exotic pasture species or is smaller than 500m² and is not a location or habitat for threatened species (Ministry for the Environment, 2022).

The key aspect of the NPS-FM that impacts farmers, outside of needing to identify wetlands on-farm, is from 5 January 2023 a consent would be required if wanting to undertake vegetation clearance, earthworks or land disturbance or discharges or water takes, use and damming and diversion that lead to wetland loss (Ministry for the Environment, 2022).

In the legislation grazing is not determined as vegetation clearance but mob stocking is (Ministry for the Environment, 2022). A mob-stocking definition was not given which makes it difficult to determine whether some winter rotations could be considered mob-stocking.

Where an activity may cause complete or partial drainage of a wetland it is either non-complying or prohibited (Ministry for the Environment, 2022).

For farmers, there is a significant amount of confusion as regional councils are required to map all natural wetlands by 2030 but farmers are required to exclude stock from natural wetlands by 2025. One key implication for farms is the large number of areas on farms,

particularly at the base of hills on hill country farms, that could be identified as wetlands. This may lead to large areas of land that was previously used for grazing being identified as a wetland with conditions associated with this. The full implications of this rule are not yet known but could place additional costs on farmers in the future for consenting and land use.

National Environmental Standards for Freshwater

Along with the NPS-FM, the National Environmental Standards for Freshwater (NES-F) were introduced in 2020. These standards outline permitted, discretionary and non-complying activities for key farming operations (Parliamentary Council Office, 2020). For sheep and beef farmers, some relevant key activities under new rules in the NES-F are intensification of landuse, intensive winter grazing, stockholding areas and the management of culverts. Most of these new rules will require farmers to obtain resource consents to undertake these activities.

Intensification of Land Use

Land use intensification opportunities are limited under the NES-F. The baseline for existing land use is 2 September 2020 (Parliamentary Council Office, 2020). This limits the ability to convert more than 10 hectares of: forestry to farmland, farmland to dairy farmland, or dairy farmland to irrigated dairy farmland. Further limitations are put on intensifying farmland for dairy support if the area was not used for dairy support within the reference period of 2014-2019. The area used for dairy support must not be greater than the maximum area used within the 2014-2019 reference period. These intensification provisions are temporary and do not apply once the applicable regional council has notified the freshwater policy statement for their region which is by 1 January 2025 at the latest.

On-farm implications are potentially significant with a number of farms limited to land-uses that were in effect on 2 September 2020, or during the 2014-2019 reference period for dairy support. A key impact is likely to be on land values as grandparenting has limited the development potential for a number of farms which in turn limits the future productivity and profitability of that land without applying for resource consent.

Intensive Winter Grazing

Under the NES-F, intensive winter grazing (IWG) is a permitted activity as long as IWG was carried out on-farm between 2014 and 2019, and the area is not larger than the greater of 50 ha or 10% of the farm area (Parliamentary Council Office, 2020). Further to this, the slope of the land grazed cannot be greater than 10 degrees, livestock must be kept at least 5 metres from the bed of any lake, river, or stream, all reasonable actions are to be taken to minimise pugging, and ground cover is re-established as soon as practicable after livestock have finished grazing the land.

For a number of farmers, these regulations will require resource consent if they choose to winter graze animals on slopes exceeding 10 degrees, intensively graze more stock than during the reference period, or graze on areas that are more than 10% of their farm area or 50 ha in total. Consent durations are dependent on Regional Council legislation but must conclude before 1 January 2031 (Ministry for the Environment, 2022).

An alternative pathway where permitted activity conditions are not met allows for the use of a Freshwater Farm Plan (FWFP) instead of a consent **provided** the plan certifier certifies that the effect is not greater than as if the permitted activity conditions had been met. Freshwater Farm Plans have just been introduced in some regions and were not available everywhere for the first year the IWG rule was in place, as such, many farmers required resource consents.

These implications directly impact potential annual profitability as well as potential land values as a result of the grandparenting.

Feedlots and Stockholding Areas

Under the NES-F, feedlots are defined as a stockholding area where cattle are kept for at least 80 days in any six-month period and are fed exclusively by hand or machine (Parliamentary Council Office, 2020). Feedlots are permitted if 90% or more of the cattle held in the feedlot are less than 4 months old, or weigh less than 120 kg (Parliamentary Council Office, 2020). If these conditions are not met, a feedlot is a discretionary activity if the base of the feedlot is sealed, it is located more than 50 m from a water body and effluent is collected, stored and disposed of in accordance with regional or district plans. If the feedlot does not comply with the above conditions a resource consent is required.

A stockholding area under the NES-F is defined as an area for holding cattle at a density that means pasture or other vegetative ground cover cannot be maintained (e.g. feed pads) but is not a stockyard or sacrifice paddock (Parliamentary Council Office, 2020). Stockholding areas are permitted for cattle less than four months of age or 120 kg. For older cattle, stockholding areas can be managed in accordance with the farm's certified FWFP so long as they have a sealed base, effluent is collected, stored and expelled per regional or district plans, and the stockholding area is located greater than 50m from a water body (Parliamentary Council Office, 2020).

Although feedlots are not common in New Zealand, stockholding areas are present on some sheep and beef farms. These have typically been used for beef cattle finishing or live export quarantine. Rules around stockholding areas in the NES-F have significant implications for such businesses.

Culverts

Placement of culverts is a permitted activity under the NES-F with one key condition being the diameter of the culvert used. In streams with a bed that is less than or equal to 3 metres in width the culvert must be 1.3 times the stream width. Streams with a bed width greater than 3 metres require a culvert 1.2 times the stream width plus 0.6 metres (Parliamentary Council Office, 2020). As such, culverts installed are likely far larger than those that would have been installed previously leading to increased costs.

Stock Exclusion

Stock exclusion regulations also came into force from 3 September 2020 (Ministry for the Environment, 2022). Stock are identified as: dairy, dairy support, beef cattle, pigs and deer (Ministry for the Environment, 2022), but not sheep. Fences must be a minimum of 3 m from

the bed of the waterway, unless there was a permanent fence in place on 3 September 2020 (Ministry for the Environment, 2022). A waterway is defined as specified wetlands, lakes and rivers with a formed base and >1 m wide (permanent or intermittently flowing) at any point within the land parcel. Smaller streams (<1 m wide), drains, water races, irrigation channel or ephemeral flow paths are not classified as waterways (Ministry for the Environment, 2022):

Stock exclusion regulations differ depending on the type of stock and the type of land. Dairy, dairy support animals and pigs must be excluded from waterways regardless of the slope (Ministry for the Environment, 2022). Beef cattle and deer must be excluded from all water bodies regardless of slope if they are being break fed or grazing annual forage crops or irrigated pasture (Ministry for the Environment, 2022). Otherwise, stock exclusion regulations only apply to beef cattle and deer on low slope land (Ministry for the Environment, 2022).

Low slope land is identified by an interactive map (Ministry for the Environment, 2022) ('the map') which shows a polygon layer of land below 500 m altitude with a local slope of less than or equal to five degrees on average. For areas between 5-10 degrees, a freshwater farm plan must detail how stock will be managed around, or excluded from, waterways on these slopes. Otherwise, from 1 July 2025 stock must be excluded from areas highlighted on this map (Ministry for the Environment, 2022). Although better than the initial map released in 2020, 'the map' still has a number of potential issues. Geographic information system (GIS) contour base layers are 0-3, 4-7 and 7-12 degree slopes while 'the map' has a 0-5 and 5-10 degree slope layers. Some land is therefore missed, and some included that should not be.

Stock exclusion has been a contentious issue for farmers, particularly hill country farmers. Many have a small area of flat land alongside streams in their hill country that is picked up as low slope on 'the map'. Fencing these areas off is often impractical because it may be a small flat area at the bottom of a gully or slope that could be a key accessway for the farm. Similarly, some areas identified as low slope may require large areas of land to be retired to effectively fence the area off which would result in a loss of grazing and significant fencing costs for the farmer.

There is currently no ability in the regulation for a farmer to appeal if the map is wrong and they would currently be compelled to do so. The Government has indicated a willingness to look at exemptions for farms that are flood prone or have very low stocking rates. As stock must be excluded by 2025 many farmers concerns are growing as fencing is expensive and the lack of clarity around these contentious areas has not been addressed properly by the Government.

Freshwater Farm Plans

Freshwater farm plans (FWFP) have a large impact across the industry as they will be required for every farm over 20 ha in arable or pastoral use, 5 ha or more in horticultural use or a combined mixed use of 20 ha or more (Ministry for the Environment, 2023). FWFPs are required under the RMA and they will encourage actions to reduce a farm's impact on freshwater (Ministry for the Environment, 2023). FWFPs will build on the work in farm environment plans. Farmers and growers are given flexibility to find the right solution for their

farm within the context of their catchment through FWFP (Ministry for the Environment, 2023) which is widely supported by farmers.

From mid-2023, FWFPs will be rolled out across the country. The first regions FWFPs will be rolled out to are Southland and Waikato. Pilot projects were run in 2022 Gisborne, Southland and Waikato to test the FWFP process (Ministry for the Environment, 2023).

Freshwater Farm Plans will be the preferred methodology for managing freshwater outcomes on farms. FWFPs will need to include a farm map identifying risks to the health of the freshwater ecosystem, a risk assessment across farm management activities, and a schedule of actions to manage or mitigate identified risks (Ministry for the Environment, 2023).

Farmers and growers see the benefits of being able to tailor solutions to their unique circumstances. However, there are concerns that there are not enough advisors with specialist skills to assist farmers in building their FWFP. Furthermore, all FWFPs must be certified and audited by a qualified certifier (Ministry for the Environment, 2023). As it stands, there are limited professionals that are capable of developing, certifying and auditing FWFPs.

Questions have been raised as to how FWFP might be developed in conjunction with existing farm plans to avoid duplication of data and documents. Similarly, it is unknown if the benefits outweigh the costs in unique circumstances such as large-scale extensive farms in low-risk catchments. A minimum farm size of 20 ha could result in many lifestyle properties being included that pose little-to-no environmental risk.

Water Reporting Regulations

From 3 September 2020, under the measurement and reporting of water takes amendment regulations (Ministry for the Environment, 2021), holders of consents who take more than 5 litres per second of water are required to measure their water use every 15 minutes, store their records, and electronically submit their records to their council every day. Given the lack of capability from the councils to support and implement many of these initiatives, it would be highly likely that they do not have the resource to store this insurmountable body of data, let alone be able to monitor and track it.

This legislation primarily impacts irrigators who now need to invest in water monitoring equipment to comply with this legislation.

Three Waters – Drinking Water

Under the National Environment Standard – Drinking Water (NES-DW) all drinking-water suppliers other than domestic self-suppliers must register with Taumata Arowai and prepare Source Water Risk Management Plans (SWRMP) to identify, manage and monitor risks to source water (Ministry for the Environment, 2022).

In a farm setting, this means safe, affordable and clean drinking water provisions must be made for all staff. This may mean UV treatment is required for tank or water take supplies. Similarly, application of fertiliser, agrichemicals and effluent may be limited around drinking water sources and drilling of bores around groundwater sources for drinking water may be limited (Ministry for the Environment, 2022).

Consultation on this policy concluded on 6 March 2022. This is yet to be passed into legislation.

2.3 Highly Productive Land

Highly productive land that is zoned rural or rural production and is Land Use Classification (LUC) 1,2 or 3 is protected under the National Policy Statement for Highly Productive Land (NPS-HPL) 2022 (Ministry for Primary Industries, 2022). Around 15% of New Zealand's land is classified as highly productive. The policy became operative on 17th October 2022 (Ministry for Primary Industries, 2022).

Under this legislation, subdivision for short-term income generation such as subdivisions for residential housing would be prohibited (Ministry for Primary Industries, 2022). The subdivision of blocks of land that can retain productive value i.e., sold to another farmer for agricultural use is not prohibited but it's future use needs to be provided for.

2.4 Regional and District Regulations

The regulations outlined above are national regulations, policies and proposals. The intention of the government is for these to form the minimum standards and each region and district then develops their own regulations and rules that go above and beyond the national standards where appropriate. Some regions already have such regulations in place. For example, Canterbury has tight rules around forestry due to the impact on groundwater reserves. Horizons, Waikato, Southland and Canterbury all have rules around baselines for nutrient losses, particularly N.

3. METHODOLOGY

To achieve a greater understanding of the impact of Government policies on sheep and beef farms a case study approach was taken. The aim was to understand the impacts these policies had on specific farms.

Four farms were identified by Beef + Lamb New Zealand to reflect the diversity of the sector. These farms were located throughout New Zealand with two farms in the North Island and two in the South Island.

Initially, a review of Government initiatives was undertaken. Both consultants who did the interviews completed this review together and discussed the details of each initiative so they had the same understanding of the initiative, its benefits, implications, possible applications on-farm and the potential opportunities and disadvantages to farming business'. This formed the review of policies presented in Section 2 as well as an outline of areas farmers were questioned about on-farm (see *Appendix C*). A specific set of questions was not followed for all farms as the authors understood that farms are unique and the impacts on those farms, and their owners are also unique.

Once the farmers were selected, our approach was to undertake farm visits and interview farmers using the framework set out in *Appendix C*. Given time constraints, not all farms could be visited by the same consultant. Farm 1 was visited first by both consultants involved in the interview process to ensure that both consultants were able to implement the same process on subsequent visits. Subsequent farm visits were split between the two consultants, with Farm 2 being visited by one consultant and Farms 3 and 4 by the other.

At the beginning of the interview an overview of the project was given. Interviews were not recorded but the farmers permission was secured to take notes including quotes based on the conversation. For the most part, qualitative data was extracted from uninitiated insights throughout the interview process rather than asking specific questions to determine how farmers were feeling as a result of Government initiatives.

Interviews were conducted over half a day which included around 2 h of questioning and 2 h of a farm inspection where themes from the interview were ground-truthed and expanded on. More time was available, but this was not required. This time on-farm allowed the authors to see areas affected by the initiatives and further understand the impact this would have on day-to-day farm operations.





Following interviews, a draft version of the farm's section was sent to the farmer to be reviewed and checked for accuracy. Feedback was incorporated into the final version of the report before being published.

4. CASE STUDY FARMS

4.1. Farm Overviews

The following gives a farm overview for each of the case study farms. *Table 1* summarises the key aspects of each farm business.

Table 1: High Level summary of the four case study farms – Farm policies, area and landuse, location, climate and soil types.

Farm 1	Farm 2	Farm 3	Farm 4
			
2,370 ha farm area 2,000 ha eff. 800 ha cropped p.a. 370 ha forestry Irrigated	3,300 ha farm area 1,750 ha eff. 451 ha manuka scrub 40 ha poplars 160 ha permanent pine 80 ha 3rd rotation pine	486 ha farm area 430 ha eff. 50 ha QEII bush 14 ha winter crop	3,600 ha farm area 500 ha cropped p.a. 500 ha irrigated
Lower North Island Finishing	Eastern Wairarapa Hill Country	Southland Finishing	Waitaki, North Otago High Country
12.9°C average temp 1,086 mm rainfall	10.8°C average temp 1000 mm rainfall	9.5°C average temp 1250 mm rainfall	8.2°C average temp 650 mm rainfall
Deep, poorly drained sands silts. Shallow well-drained sandy soils	Poorly drained silt loams over clay. Mudstone hill soils	Fertile lays and silt loam soils	Loams and gravelly loam soils

4.1.1. Farm 1

Farm 1 is an intensively farmed mixed cropping and finishing farm in the lower North Island. The key stock policy is trade lambs and finishing cattle. Dairy cows and heifers have been wintered or grazed on-farm, but this is less common now. Sheep and cattle breeding stock are grazed on poorer areas of the farm. Of the 2370 ha property, 370 ha is forested with *Pinus Radiata*, around half of which is registered in the ETS, and the remainder being pre-1990 forest. Cash crops vary from year-to-year and are a mix of seed crops and fodder crops for livestock enterprises.

The key policy impacting Farm 1 is the NES-F. Farm 1 is also affected by the NPS-IB, NPS-FM, ETS, He Waka Noa and FWFPs.

4.1.2. Farm 2

Farm 2 is an intergenerational family farm with the current operators being the fourth generation. The family have been consistent custodians of the land. It is a great example of a lower North Island hill country farm with significant biodiversity created by previous generations. Waterways are clear and there are significant areas of native bush remaining untouched over the property. Land varies from highly productive LUC 3 to untouched Class 8. Stock policies are sheep and beef breeding, finishing and trading stock when possible. The ewe flock achieve 126% lambing, and hoggets are not mated. All progeny are finished and winter trade lambs brought in. The cattle achieve 82% calf survival-to-sale, and Friesian bulls are purchased as yearlings and taken through to finishing direct to works. Annually, 100-120 ha is cropped (both summer and winter feeds), and an additional 10-40 ha is planted in cash crops depending on markets and seasons.

Of the Government policies the NES-F, particularly the stock exclusion rules, has the greatest impact on Farm 2. Other policies that impact the business but likely to a lesser extent are the NPS-FM, in regard to wetlands, the NES-F Intensification of land use, and NPS-HPL. The introduction of FWFPs will aid Farm 2 in regaining some control over their farm operations, however, they do not see this as a productive use of money or resources.

4.1.3. Farm 3

Farm 3 is a fourth-generation farm in Southland. It is a sheep breeding and cattle trading property, but the quality of the land and location means it could comfortably be used for dairy support. Stock policies consist of sheep breeding and cattle finishing. A high performing ewe flock lambs at 140% and are intensively managed at lambing with triplets either being mothered onto single ewes or hand-reared. Progeny are grown out as replacements or finished on-farm. Friesian bulls are purchased as yearlings, wintered on crop, typically fodder beet, and finished the following summer. Winter crops cover just over 3% of the effective farm area each year. Nitrogen is used strategically but is not typically part of the system.

Of the Government policies, the NES-FM will have the largest impact on Farm 3. This is due to the intensification of land use and Intensive Winter Grazing rules. One other policy that could impact Farm 3 is the NPS-IB, particularly in regard to SNAs around the 50 ha of QEII bush.

4.1.4. Farm 4

Farm 4 is a high-country station which has a mix of 500 ha irrigated flat land, 1,820 ha of undeveloped flat land and 1,280 ha of high country. Stock policies are comprised of sheep and cattle breeding and finishing and cash cropping. A flock of 3-3,500 merino ewes are mated and lambled in the high country before weaning when their offspring are finished or grown out on the irrigated country. A further 2,000 trade lambs are purchased and finished on-farm. The cow herd comprises of 150 stud Shorthorn cows. Heifers are retained as replacements or finished while bulls are finished or sold as stud bulls. Cropping consists of around 500 ha annually. This is comprised of irrigated cash crops and dryland forages which vary from year-to-year.

Farm 4 went through a tenure review process with the Crown and Department of Conservation (DOC). During the tenure review process a significant area of land was surrendered with the understanding that remaining land could be developed and improved. Over time it has become clear this will not be the case and the farm has been subject to many new rules which has limited production and potential profits for Farm 4.

Of the Government policies, the ETS will potentially have the largest impact on Farm 4. Other policies that impact the business to a lesser extent are the NES-F requirements around water reporting for irrigation, and FWFPs. As Farm 4 is a high-country station located in the Canterbury region it is potentially subject to more restrictive regulations from both Regional and District Councils.

4.2. Summary of Impacts of Government Initiatives On-Farm

4.2.1. Climate Change

4.2.1.1. Emissions Trading Scheme

Farm 1 has had some land in forestry since pre-1990 due to the low productivity of the sand soils. An additional 185 ha of forestry has been planted post-1990 to diversify the income streams for the business and mitigate the risk from emissions taxes. These plantations are set to be part of succession planning to ensure there is free capital if needed.

Because of the historical preservation of native bush and scrub on **Farm 2**, around 1,300 ha of the 3,300 ha title area is ineffective farmland, but **none** of it is eligible for the ETS as it is pre-1990 native forest. Erosion control poplar plantings total 40 ha which have been registered in the ETS and 160 ha of permanent pine forest was also planted and registered in the ETS. This decision was driven by finances as the land in permanent forestry is marginal land which resulted in annual net losses. All land that has been planted is Class 7 or 8, with some areas of Class 6 which have severe accessibility issues.

Farm 3 has 50 ha of native bush that was planted prior to 1990 and is also protected by QEII covenants so it is not eligible for the ETS. Of the remaining land that is not planted in forests or native bush there is only 8-10 ha that could be planted in forestry to be entered into the ETS as the remaining land is too productive.

Farm 4 does not have any forestry currently registered in the ETS. There are pockets of the farm with wilding pines that are becoming more of an issue. Some native plantings around waterways that have been retired could be eligible to be registered in the ETS, but they have not yet been mapped.

There is a 500-ha block of undeveloped flat land that is suitable to be planted in production forest for the ETS. Planting this is a challenge under the NES-PF and Environment Canterbury rules because of wilding pine issues in the McKenzie and Waiau districts and therefore restrictions on pine plantation in that region. Farm 4 applied for resource consent through their local Council for the change in land use and funding through the 1 Billion Trees Program (Te Uru Rakau, 2023) which is now closed. A resource consent was granted for 105 ha of *Pinus*

Atteuata; a non-spreading non-coning forest. The wilding pine infestation was so severe in places some of the land is already deemed to be a forest due to the ‘enclosed canopy’. Consent costs to-date total \$40-\$50,000. Further consents will be required if additional land is planted. Like many farmers, the owners of Farm 4 noted that “trees in the right places and the right tree is common sense” but “what’s happened up north [blanket planting farms], its hideous”.

Production forestry (including Carbon) in the first rotation has the potential to lift the profitability on this land by around \$700/ha/yr on average which would mean an additional \$350,000 profit each year on average for the first rotation of forest if the full 500 ha block could be planted.

A summary of the vegetation that is and is not eligible for the ETS for each farm is presented in *Table 2*.

Table 2: Summary of vegetation that is registered in the ETS and vegetation that is not eligible for the ETS.

	Farm 1		Farm 2		Farm 3		Farm 4	
	ETS (ha)	Not ETS (ha)	ETS (ha)	Not ETS (ha)	ETS (ha)	Not ETS (ha)	ETS (ha)	Not ETS (ha)
Exotic forest	185	185	160	80	0	0	0	0
Native forest/ bush	0	0	350	670	0	50	0	0
Erosion control plantings	0	0	40	0	0	0	0	0

4.2.1.2. He Waka Eke Noa- Pricing of Agricultural Emissions

To determine what potential tax could be imposed on each case study farm, either the Beef + Lamb NZ GHG emissions calculator (Beef + Lamb New Zealand, 2023), or in the case of Farm 2, an Overseer Nutrient Budget including GHG emissions, were completed. Emissions were priced at 11 c/kg for methane and \$4.25/t for long-lived gasses. These prices are based on modelled prices by the Government in October 2023. Since then there have been indications they could be lower although nothing has been confirmed.

As the eligibility of vegetation offsets has not been confirmed under HWEN, vegetation offsets have been calculated based on the Beef + Lamb NZ GHG calculator as at May 2023 (see *Appendix B*). It is noted these vegetation categories are different to those proposed under HWEN. The Beef + Lamb GHG calculator estimates the full sequestration rate for pre-1990 native vegetation, while indications from the Government is that only additional sequestration will be recognised which would be significantly lower, so the estimated sequestration payments could be lower. Any vegetation that is registered in the ETS has been excluded from these calculations. It should also be noted the pricing of sequestration is still

being worked through. With the absence of any better information, a 25% discount on the current Carbon price has been used. As at 5 July 2023 the Carbon price was \$37/NZU (My Native Forest, 2023). A price of \$27.75/t has been adopted for the sequestration calculations in these examples.

Farm 1's annual emissions were 9,773,200 kg of methane, 3,226 t CO₂-e of nitrous oxide, and 106 t CO₂-e of carbon dioxide. Emissions for Farm 1 are higher as it has a higher stocking rate than an average farm in its class. Vegetation offsets from 6.7 ha of shrubland were 34 t CO₂-e. **Farm 2's** annual emissions were 164,383 kg of methane, 1,016 t CO₂-e of nitrous oxide, and 28 t CO₂-e of carbon dioxide. Vegetation offsets from forestry and scrubland were 305 t CO₂-e. **Farm 3's** annual emissions were 73,662 kg of methane, 325 t CO₂-e of nitrous oxide, and 5 t CO₂-e of carbon dioxide. Vegetation offsets from the QEII bush were 1 t CO₂-e. **Farm 4's** annual emissions were 78,763 kg of methane, 496 t CO₂-e of nitrous oxide, and 32 t CO₂-e of carbon dioxide. Vegetation offsets from 62 ha of wilding pines, conifers and tree lanes and 80 ha of shrubland were 2,230 t CO₂-e.

Vegetation registered in the ETS has been excluded from the above calculations although Farms 1 and 2 generate income from the ETS that could be used to pay for their emissions taxes. These numbers are an indication only at this stage as the actual vegetation offset and pricing of sequestration has not yet been confirmed.

A summary of the annual tax liability, vegetation offsets and net tax for each farm is presented in *Table 3*.

Table 3: Summary of financial impacts of HWEN scheme for four case study farms.

Farm ID	Annual Tax Liability	Vegetation Offsets	Net Tax
Farm 1	\$57,163	\$944	\$56,219
Farm 2	\$22,519	\$8,464	\$14,055
Farm 3	\$9,505	\$28	\$9,477
Farm 4	\$10,908	\$61,883	\$0

4.2.2. Waterways and Biodiversity

4.2.2.1. National Policy Statement for Indigenous Biodiversity

This documents existing protected SNA on farms currently.

Farm 1 has one documented and protected SNA which is a 28-ha flax wetland that has been fenced off and protected for many generations. As legislation currently sits, the new biodiversity legislation will not have an impact on the farm, unless the Regional Council decides to require a decrease in grazing intensity surrounding the SNA.

Farm 2 currently has a wetland which is 2 ha and located close to the road. This is part of ongoing data collection with the Regional Council. The nature of the farm with its significant

areas of native bush and scrub is that there are likely to be many other similar locations over the farm; they just have not been identified yet.

If more areas of the farm were to be identified as a SNA, then the farmer believes this could be either a liability or beneficial - depending on the level of support provided in looking after and protecting the areas. Pest control is a big cost to the business, which if part of a regular program, can keep deer and possum numbers under control, which has a positive impact on bird and plant life. If no support for the SNA's is provided then this would be a substantial financial burden to the business, and likely would not happen to the extent required.

Farm 3 is likely to be impacted by the NPS-IB as the 50 ha of QEII bush is considered a SNA given its age and native fauna that it provides habitat for. The bush is home to New Zealand Falcon's among other protected native species. Biodiversity studies have previously been completed on the bush but because of unintended outcomes and the risk of limitations being placed on farm operations any further studies have been declined. At one stage it was proposed that animals would be unable to be intensively grazed within 100 m of a SNA in the Southland region. This would impact grazing on up to one third of Farm 3's area given the size and shape of the SNA.

Depending on the person assessing the property, anywhere from 30 to 50% of **Farm 4** could be considered as having native biodiversity. Some areas of the farm are also considered outstanding natural landscapes which further limit farming and development opportunities on-farm.

One of the farmers key frustrations is that during the tenure review process a significant run of land was 'given back' with the promise that the remaining land could be developed in the future. Since the tenure review process was completed, the 500 ha of irrigation was installed. Irrigation water is provided from the Benmore Irrigation Scheme. In the irrigation design and build process it was determined that the scheme's consented 4,000 ha of border dyke irrigation used the equivalent water of 7,000 ha of centre pivot irrigation. At the time, centre pivots were installed and there was the understanding that at a later date a further 3,000 ha could be installed. When the time came to extend the irrigated area on the Benmore irrigation scheme a consent was required. The shareholders spent a total of \$1m before the consent was denied. This has stifled development on Farm 4 where the development was initially outlined as being able to occur. A 1,600-ha block of flat land was marked for development if the irrigation consent extension was granted. Along with the irrigation, further fencing and improved pasture species and cash crops were planned. When the consent was denied, this development was also abandoned as investing in development without water would not yield sufficient returns in the harsh climate of Farm 4. Further frustrations stem from the irrigation development consent being turned down because the area identified for development is now continually threatened with worsening wilding pine tree issues stemming from trees seeding from the adjacent riverbed owned by Land Information New Zealand (LINZ). The wilding tree issue is a huge problem. While MPI has initiated the start on wilding eradication, the problem is vast and with the extensive seed source, new trees are establishing behind those controlling the existing trees.

4.2.2.2. *National Policy Statement for Freshwater Management*

Farm 1 is impacted in three ways by the NPS-FM. Firstly, through water-use regulations for the nine irrigation bores throughout the farm. Secondly, the water quality regulations dictate that this farm is an intensive farm located within a priority catchment, therefore is required to hold an intensive land use consent and meet N leaching and phosphorous loss targets over a 20-year timeframe. Finally, there is one identified and managed wetland on-farm, but another 15-20 ha of land may fall under the definition of a wetland due to the proportion of native reed and rush bushes in the area. This area is grazed from time-to-time so would have a negative impact on the business if it was identified as a wetland.

Farm 2 could be negatively impacted on their Martinborough block by the hierarchy of obligations for freshwater as the water is taken from a groundwater bore. The area is understood to be overallocated for water takes. This water take supplies two houses as well as the stock water. If this water take was to be reduced or removed the property would potentially lose stock water and then drinking water.

Further to this, Farm 2 has a number of areas which are borderline as to whether they meet the definition of a wetland, as outlined in the NPS-FM, 2022. The critical factors, whether 50% or more of the plant species are introduced pasture species, or if there are any critically endangered species present, mean that Farm 2 is unsure how much of their farmland meets this definition, and therefore what practical steps can be taken to improve pasture, vs draining wetlands, or having to fence off and protect them from cattle. There is one wetland area that has been identified and fenced off and is part of a regular monitoring program with the Regional Council. However, other potential wetlands are creating anxiety for the farmer as in some instances the Regional Council are not committing to providing any clarification, and the onus currently falls on the farmer to decide what actions can be taken. For every wetland that meet the wetland definition, and requires stock exclusion, there is on average 400 m of fencing required. If no other work (i.e., groundwork or planting) is required then the fencing alone would cost in the order of \$10,000 per 1 ha wetland.

Farm 3 has two identified wetlands that under the current regulations do not need to be fenced off as they are only grazed by sheep and are in blocks with slope in excess of 15 degrees. Farm 3 has an extensive reticulated water system that is primarily supplied from the Waiau River. It is unlikely this water supply will be impacted by the NPS-FM. Water quality baselines are unlikely to have an adverse effect on Farm 3 as the baseline health of the Waiau catchment is generally good.

Farm 4 is not impacted by the NPS-FM water-use regulations as the irrigation water is supplied by the Benmore Irrigation Scheme rather than bores. Similarly, water quality regulations are unlikely to impact Farm 4 significantly as baseline water quality within their catchment is believed to be of good quality. Wetlands are not an issue for Farm 4. Areas that are irrigated or intensively grazed and have streams running through them have been fenced off and in many cases planted as well.

4.2.2.3. National Environmental Standards for Freshwater

Farm 1 is primarily impacted by the NES-F through the feedlot/stock holding areas rules. Farm 1 has been utilising 30 ha for intensive cattle finishing. This area does not have a sealed base or any collection of effluent. As such they are non-compliant and require a resource consent to be able to continue this activity.

Farm 1 has partnered with other local farmers, as well as Massey University, to invest \$30,000 of their own money into research totalling \$160,000 to measure the water quality in the surface drains, medium ground water, and deep ground water to understand the effect on water quality of their stock holding areas. Farm 1 is planning on using this research to support the application for a resource consent to continue using these areas. The cost of the consent is estimated to approach \$30,000. Without this research it is unlikely that Farm 1 would be granted such a consent. As it is, there is no guarantee off successful outcomes.

Stock exclusion regulations in particular have a significant impact on **Farm 2** as they are currently written. There are a number of waterways through the farm, including drains, wetlands and rivers. Farm 2 has several areas identified as low slope in the 2022 stock exclusion map. Some of these are accurate and an additional 7 km of fencing will be required to fence these waterways and drains to exclude cattle. At a cost of \$25/m for a conventional batten fence this will cost approximately \$175,000.

In addition, there are areas which have been identified as low slope that the farmer would contest if they were able to as they were measured as being 19-30 degrees within the 'low slope' area. These areas are irregularly grazed, with very low stocking rates.



Figure 1: Low slope map and corresponding photo of location on farm. Area highlighted in blue (left photo) has been identified as low slope, but as per photo on right, it is not a 'low slope' but rather a steep gully with sheer sides and meandering waterway at the bottom.

As seen in **Figure 1**, the area highlighted in blue that is identified as "low slope" is not low slope (right hand photo), rather a steep gully with some sheer sides and a meandering waterway at the bottom. The area is densely vegetated with native bush and scrub with some

pasture in open areas. This area is irregularly grazed at low stocking rates grazed but is more critically used as the only access point to the back of the farm.

The stock are walked up the riverbed and out to the front half of the farm. This 'stock crossing' is not used more than twice a month on average over the year but at times of the year this may be twice in a week or more as stock are moved around farm. The legislation states that *"beef cattle on low slope must cross a lake or wide river by using a dedicated bridge or culvert unless they-do not cross the same lake or wide river more than twice in ANY month"* (clause 14, b, ii). As such this 'stock crossing' is not compliant, and a bridge or culvert is required to be used for any stock crossings. The 1 km stretch of river that has been identified as low slope would require 10 bridges to allow the stock to be shifted from the back half of the farm to the front half. The building of the bridges would be impractical, if not impossible, as getting machinery access would be challenging, and would likely result in more damage and degradation of waterways than the current use as a stock crossing. At a minimum of \$100,000/ bridge (at least \$1M for all 10 bridges), this activity would be cost prohibitive to achieve.

If this area was instead to be fully retired and fenced off, and another access point for stock between the front and back of the farm were to be found then this would require 3.5 km of fencing, and the total productive area lost is 42 ha. At a cost of \$25/m this would cost an additional \$87,500 in fencing, plus stock access through other means e.g., bulldozing a new track etc.

What is more difficult for the farm to digest than anything else regarding this legislation is that there is no allowance for negotiation or to prove that the identified area is not actually low slope. There is no provision to appeal the rules, leaving the farmer no choice but to become non-compliant.

As well as the stock exclusion rules, Farm 2 is potentially negatively impacted by the intensification of land use and intensive winter grazing rules. Dairy cattle were not grazed within the 2014-2019 reference period which limits future profitability unless a consent costing around \$10,000 is granted. Similarly, cropping could be limited in the future as some paddocks that were previously cropped have areas with greater than 10 degrees slope.

Two key areas of the NES-FM that impact **Farm 3** are intensification of land use and intensive winter grazing rules. Intensification of land use rules limit the future stock policies Farm 3 could utilise. During the National and adopted Southland reference period of 1 July 2014 to 30 June 2019, dairy cattle (cows or heifers) were not grazed on-farm, and there were no female dairy animals on-farm on 2 September 2020. This limits the potential to graze dairy animals until 1 January 2025 unless a consent is granted. If the Regional Council imposes a similar rule, which is uncertain but likely, grazing dairy cattle will be limited without a consent. Consents will likely cost in the vicinity of \$10,000 for a 5-year period in Southland. The chance of consents being granted is unknown. Ideally, dairy cows would be wintered on Farm 3 in lieu of bulls in some seasons. Without a consent this change in policy is not permitted and Farm 3's potential EFS is limited by around \$70/ha or \$30,000 each year. In response to future

landuses being limited by past land use the farmer said “*grandparenting is crazy [they’ve] hamstrung us for being too proactive*”.

Intensive winter grazing regulations have a potentially significant impact on Farm 3, not because of the regulations and changes Farm 3 would need to make to its operations, but because of the limitations of future land use, and subsequent impact on land value if Farm 3’s owners were ever to decide to sell. As outlined in the stock policy, Farm 3 has historically all grass wintered ewes and only grows a maximum of 14 ha of winter crop; just 3.25% of the effective area. Many Southland farms reach the cap of area that can be cropped under the NES-F and crop 10% of their effective area or 50 ha each year. Like limitations around intensification of land use, increasing the area used for winter grazing would require a consent. Again, this is likely to cost \$10,000 with no guarantee of the consent being granted. It is likely that the key impact on Farm 3 for having a low baseline for the area winter cropped is a negative impact on land value if the farm was to be sold. Data extracted from Core Logic shows comparable Southland properties that are able to be used for dairy are valued at an average of \$30,961/ha including improvements. Pastoral Land which includes dairy support and sheep and beef properties had an average value of \$22,687/ha. Pastoral Land can be further analysed into higher value dairy support land with an average value of \$29,453/ha. As Farm 3 is good quality land that could be used for dairy support, valuers believe the farm value is around the pastoral average of \$22,687/ha. For Farm 3, this could mean a potential loss in value of up to \$2.9 million or \$6,765/ha because they did not graze dairy or dairy support animals during the reference period.

Farm 4 is primarily impacted by the NES-F through water use and water availability. As there is only one dwelling on-farm the drinking water reforms do not impact Farm 4. Changes to legislation around monitoring water use do however impact Farm 4 with their irrigation activities. Farm 4 needed to install stream level monitoring equipment at \$10,000 as well as telemetry to measure and report water use at a cost of \$10,000. Stock water is a key consideration for Farm 4. Given the importance of clean drinking water for their animals they regularly clean out troughs in the summer. Stock water is either provided as part of a local scheme or from the creek running through the flats. Any limits to stock drinking water from the stream under the NPS-FM would have a significant impact on Farm 4.

4.2.2.4. *Freshwater Farm Plans*

Although farmers generally support the adoption of FWFP’s they noted a current lack of advisors to assist in creating fit-for-purpose FWFPs that outline effective management strategies and mitigations around key risks.

Farm 1 will be required to complete a FWFP within the next five years. The farm is an active participant in local catchment groups and so believes that working at a catchment level will be beneficial and hopes that catchment groups aid in developing FWFPs for their members. When FWFPs are implemented, this is likely to cost Farm 1 \$10,000-\$20,000 to set up plus on-going update, re-certification and audit costs which are estimated at \$5,000 every 3-5 years.

Farm 2 will be required to complete a FWFP within the next five years. The farm has no problem with having a farm plan in time if it is workable and achieves the desired outcomes. However, having to pay \$10,000 to \$20,000 to gain a plan, and then on-going costs for re-certification and auditing is not something that the farmer believes is a productive use of money.

Being in Southland, **Farm 3** is one of the first regions in the country that Freshwater Farm Plans (FWFPs) are being rolled out. Farm 3 already has a farm plan but it needs to be updated to ensure it includes all of the sections required of the FWFPs. This is likely to come at a cost of \$10,000-\$20,000 as well as a significant investment of time by the owners. These plans will also come with on-going costs of around \$5,000 every three to five years depending on audit and recertification requirements.

Farm 4 requires a FWFP within the next five years they are seen as a proactive and productive way forward from Farmer 4's perspective. *"Farm plans are a really important tool. They need to be live and fit-for-purpose"*. Although costly to set up and likely to come with ongoing costs, farmer 4 believes FWFPs will give farmers opportunity to have input into the future of their farm. Once signed off it is hoped that the farm plan becomes a reference document and removes ongoing consenting costs.

4.2.3. National Policy Statement for Highly Productive Land

Farm 1 has a significant proportion of their land classed as highly productive under the NPS-HPL, with areas of LUC 1-3. This will impact on ability for subdivision going forward. However, Farm 1 has no plans for the subdivision of this land.

The NPS-HPL has minimal effect on **Farm 2** in the immediate future. While they do have some LUC 3 land, given their location and distance from central locations, there was not much opportunity for subdivisions.

However, on the Martinborough lease block, the NPS-HPL could impact on future options for the property. It is LUC 3 land is rural zoned and located on the outskirts of Martinborough township. The property is held in trust by the farmers wife's family, "who have no plan to subdivide the property". However, realistically with future generations, ideas and needs change and the NPS-HPL will restrict the options available to them.

Farm 3 is comprised of predominantly flat fertile land. As a result, around 130 ha has been classified as LUC 1-3. Under the NPS-HPL, this land could not be subdivided and sold for non-productive uses e.g., lifestyle blocks or subdivision. Although this is not a concern to the current custodians of the land this could again limit the land value for future owners.

There are only small areas of LUC 1-3 land on **Farm 4**. These areas are not targeted for subdivision at this stage. There is however, around 700 ha of land that fronts canals and lakes that would ideally be subdivided. Consents have been lodged to subdivide 300 ha into fifteen 20ha lifestyle blocks. Although the NPS – HPL does not impact these areas local and regional council rules could still stifle development. At a potential sale price of \$1m each this legislation

could mean a potential total subdivision \$35m of subdivision for Farm 4. Consenting costs to date have cost \$50,000.

4.2.4. Resource Consenting

Regional Councils have differing levels of interaction and control over the farmers within the regions. **Farm 1's** region has been proactive in trying to manage the negative externalities of farming practises. As such, Farm 1 holds resource consents for nine bores (both irrigation and stock water), irrigation consent, a consent to apply organic waste to land (poultry effluent) and a land disturbance consent. The average annual cost of these consents (application fee, time/ consulting etc) is approx. \$30,000 annually to allow Farm 1 to continue to farm.

This annual cost, and the ease of new applications/consent renewals are becoming more and more challenging due to the introduction of Iwi oversight into the resource consent process. Historically, the process of consenting required a submission from the farmer to Regional Council, who assessed it and either granted it or not. Now the farmer has to undertake Iwi engagement and get approval from all local Iwi groups prior to the Regional Council being willing to grant or decline a consent application. This process at times can be streamlined, but can equally be challenging, as in some areas (including Farm 1's location) there are many Iwi groups, some of whom are more engaged and willing to perform this job than others. This can create delays and hold ups in the consenting process, which only increases the cost and stress on farmers as they wait to find out if they can continue existing farming practises.

Resource consenting is not an issue for **Farms 2 and 3** currently, but requirements could change in the future as councils implement planning requirements under the NPS-FM. **Farm 4**, being situated in the Environment Canterbury Region, has a number of consents already in place, primarily for irrigation. Annual compliance and consenting costs for Farm 4 are already \$25,000 to \$30,000 between irrigation consents, updates to farm plans, telemetry costs, audits and monitoring fees. Farm 4 has also invested \$50,000 in forestry consents, \$50,000 in subdivision consents and contributed to the \$1m of Benmore Irrigation scheme consent costs that were denied. Legislation and changes to development rules following the tenure review has left Farm 4 with around 1,600 ha of land that has revenue limited by around \$2,200/ha, assuming a 60% cost structure. This equates to an annual profit reduction of \$1.408m.

As highlighted by the consenting process and costs to date for Farm 1 and Farm 4 these costs can be significant, and don't always guarantee a more profitable or desirable outcome on-farm.

4.3. Financial Impacts On-Farm

Financial impacts on each farm have been separated into opportunity and real costs. This distinction has been based on how the rules and regulations are currently written and assuming there is no opportunity for appeal. Costs, where appropriate, have also been split into annual and on-going costs. Costs are outlined in *Table 4* and *Table 5*.

While the impact will vary across farm, most sheep and beef farms across the country are impacted by many of the new rules. These case studies give a good sense of the multiple layers of impact (direct financial or land value) that are coming for many farms. Because most of the rules are one-sized fits all, any farm, regardless of its intensity or impact, is affected by the various rules. Most of these farms are low input and low impact. The cumulative impact of the environmental rules is significant and is making most of them reassess their future in the industry.

Farm 1 is a good example of the significant impacts that some policies have on individual businesses. Not all farms will be affected by these same policies, but for those farms affected it can make a dramatic difference to the bottom line, with no easy alternate income streams available.

Farm 2 is a good example of the failings of some of the legislation, specifically stock exclusion, and how rigid the rules are despite significant impracticalities for those farmers trying to be compliant. Furthermore, it is questionable as to whether there would be any benefit that can be seen from meeting regulations, as currently farming practises are showing good stewardship of the land as is.

Farm 3 is a perfect example of a business that has done the right thing for the environment for a long time and are now being penalised because of a grandparenting system that enables high emitters to continue at high levels but severely restricts low emitters.

The impact of policies on **Farm 4** has already been significant. Given the challenges the farmers have faced between having the Benmore Irrigation scheme consent denied, the challenges in applying for afforestation consents and subdivision consents, the farmers have mounting frustrations. Further to this the owners of Farm 4 said *“farming, especially high-country farming is at a crossroads”*

4.3.1. Potential Future Financial Impacts On-Farm

Depending on the outcomes of testing to determine nutrient baselines and biodiversity, the NPS may lead to more rules and further requirements for consents in the future. Similarly, as regional and local councils develop and update their legislation increased consenting requirements and other costs may follow for each case study farm.

Table 4: Summary of one-off opportunity and real costs of central and local Government policies, proposals and initiatives on case study farms. Local government costs are denoted by an * alongside the cost.

	Farm 1		Farm 2		Farm 3		Farm 4	
	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs
Resource Consents		\$60,000 ¹						\$220,000* ²
Land value impact					\$2,900,000 ³		\$35,000,000* ⁴	
Water Monitoring								\$20,000
Stock Exclusion			\$1,262,500 ⁵					
Freshwater Farm Plan		\$15,000		\$15,000		\$15,000		\$15,000
Total	\$0	\$75,000	\$1,262,500	\$15,000	\$2,900,000	\$15,000	\$35,000,000	\$255,000

¹ Farm 1 costs are made up of \$30,000 for a stockholding area consent and \$30,000 for research to support this consent application. See section 4.2.2.3 for further information.

² Farm 4 costs are made up of \$45,000 for the pine tree consent application, \$50,000 in subdivision consents and a 12.5% share of the \$1m failed Benmore Irrigation consent application. All of these costs are regional or local council costs.

³ Potential devaluation in land from impacts of the intensive winter grazing rules under the National Environment Standards -Freshwater Management – see section 4.2.2.3 for explanation.

⁴ Potential loss of future development income due to local council rules around the subdivision of 700 ha of lake and canal front land – see page 31 for explanation.

⁵ Includes \$175,000 for fencing on low slope land, \$1m for 10x bridges, and \$87,500 of potential fencing if bridges need to be installed – see page 28 and 29 for explanation.

Table 5: Summary of annual opportunity and real costs of central and local Government policies, proposals and initiatives on case study farms. Local government costs are denoted by an * alongside the cost.

	Farm 1		Farm 2		Farm 3		Farm 4	
	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs	Opportunity Costs	Real Costs
GHG Tax (HWEN)		\$56,219		\$14,055		\$9,477		\$0
Consenting Costs		\$30,000*			\$4,000 ⁶			\$25,000*
FWFP updates & audits ⁷		\$1,667		\$1,667		\$1,667		\$1,667
Loss of Income					\$30,000		\$350,000* ⁸	
Total		\$87,886		\$15,722	\$34,000	\$11,144	\$350,000	\$26,667

⁶ Farm 3's consenting costs are a potential cost if the owners choose to graze dairy cattle or increase winter crop areas split over the 5-year period consents would be granted for.

⁷ Fresh water farm plan updates and audits assumed to cost \$5,000 every 3 years, this cost has been averaged to show what the annual cost would be.

⁸ Loss of Income is due to afforestation consents potentially being denied. This is primarily driven by regional council rules not central government.

4.4. Personal Impacts of Govt. Policy and Proposals

Farm 1, like many of their peers, are finding it challenging to keep up to date with legislation. There is so much of it, and it is all coming at once, with a lack of clarity or ease of understanding as to how it will affect each individual farm.

"It is huge. So much that farmers are having to deal with in a short period.... Farmers lose more sleep over government policy than they do over farming".

"So many new policies and it is not black and white. [The policies] confusing to understand and find out about. Different understandings from different papers, Regional Council interpretations, Iwi groups and advisors."

One member of the farming business is spending up to 70% of their time "outside of the farm business" just to work on industry good work around legislation, industry and local groups, and advocating on behalf of farmers.

"Farming is no longer about growing, harvesting and selling pasture. It is dotting i's and crossing t's to prove that you are a good custodian".

Overall, frustration with overwhelming numbers of regulations, the lack of clarity and understanding of those regulations, and the difficulty to just continue farming as you have done historically was a common thread throughout the conversation. Farm 1 is currently a good custodian of the land and continue to look after the land as the family has done for generations. However, they are frustrated with constantly having to prove that they are doing the right thing in order to continue farming.

"Farmers are now guilty until you prove you are innocent- which is much harder and more expensive to achieve".

Like many of their peers, the owners of **Farm 2** have found the magnitude of and changes in regulations to be difficult. They are struggling to keep up with the legislation and admit that they are at risk of just burying their heads in the sand.

"Avalanche of regulations coming our way".

"If they keep piling it on... people just won't do it as they get overwhelmed by it all."

The lack of clarity around the regulations, and what they all actually mean for farmers is providing additional challenges.

"...not going to choose to get up to speed until the rules are set because they might change the rules on you- so a waste of time".

"...so many unknowns- how do you prepare [for the future of your business] when you don't know what you are dealing with".

The language used to describe farming, and the lack of support from the government, regional councils and communities is also starting to tell on the farmers.

"There is just nothing positive".

"Creates anxiety".

Overall, the frustration over the number of regulations, lack of clarity and the impracticalities of the legislation coming through was a common theme throughout the conversation. Farm 2's owners want to remain good custodians of the farm, and to do the best for the farm and environment, but are feeling like they have no choice but to become non-compliant in some areas as they see no realistic way to achieve what is being asked of them.

Like many of their peers the owners of **Farm 3** have found the magnitude and pace of changes in regulations to be difficult. This has caused the farmers to reassess their future in the industry with the admission that they don't know if they will still be farming in 10 years. Regulations have also changed how they interact with key stakeholders.

"We're careful what we say to people now. We don't want to give them a stick to whack us with."

"There's a constant nagging away of the regulations. That's the last thing I should be thinking of at night."

Regulations and the pace of change that they have experienced has led them to re-consider their succession plans for their children.

"How do you make succession plans if you don't know what the rules are going to be...I don't know if we'd be pushing for them [their children] to be farmers"

Overall, the frustration over the magnitude and pace of policy change was a common theme throughout the conversation. Farm 3's owners and their family before them have made decisions to protect the environment and farm in a sustainable manner so they are able to pass the farm onto future generations. However, in recent times the changes to policy have

stalled development which has negatively impacted their view of the agriculture industry as a viable career path and industry long-term.

As **Farm 4** is located in the Canterbury region there has been a longer period of legislation adoption than some other regions. In some ways this appeared to be simpler for Farm 4 as there was not the confusion around what was local or regional and national policy. Conversely, having a longer period of regulations has been difficult, particularly when Farm 4 has been trying to develop land following tenure review. Farm 4 noted *“E Can [Environment Canterbury] were the guinea pig for a lot of these environmental rules”*. Farm 4’s key frustrations lie in any development being stifled and the amount of doubling up that is required. The following quotes highlight some of these concerns.

“You can see how frustrating it is from our part” in regard to development being stopped following tenure review.

It’s a different game that we’re living in today than when we came here in 2003-04”

“The system is still half broken”.

“It’s hard to put an absolute ring around the compliance stuff, it’s constant”.

Freshwater farm plans are seen as a proactive and productive way forward from Farmer 4’s perspective. *“Farm plans are a really important tool. They need to be live and fit for purpose”*. Although costly to set up and likely to come with ongoing costs, Farmer 4 believes FFPs will give farmers opportunity to have input into the future of their farm. Once signed off it is hoped that the farm plan becomes a reference document and removes ongoing consenting costs.

5. RECOMMENDATIONS

- It is clear that a lot of new regulation is coming at farmers, with significant cumulative economic impacts.
- The Government needs to undertake their own detailed analysis of this cumulative economic impact, rather than the current siloed approach.
- Once this is done, they should re-assess each of the regulations and undertake a cost/environmental benefit assessment across different farm types and impacts to see whether some of the rules need to be adjusted rather than one-sized fits all.
- Consideration should also be given to the impacts on production of the proposed rules and whether this means that all of the rules are needed. For example, the Government is proposing a price on emissions. If the economic analysis indicates that agricultural production/stock numbers will be falling as a result of some of the other rules, this needs to be factored into the need for a price on emissions. A more holistic view is needed of policy.
- In terms of afforestation, more in-depth modelling is needed to understand the impacts, both economic and social, of large-scale afforestation on regional communities and wider New Zealand. As it stands, a disproportionate area has been planted in some regions, and a large area of permanent forest has been planted which has negative longer-term impacts on New Zealand as a whole.
- Understand both the consumer, and global trading country partners, appetite around market premiums and willingness to pay for a product that has a lower carbon footprint. Once this is understood, a logical next step is to understand how farmers then tell their story (on the global stage) about how they are delivering on lower GHG emissions and what hard evidence they can provide the consumer on this.

6. CONCLUSIONS

New Zealand farmers have faced a plethora of legislative proposals and changes since 2017. These have been wide-ranging and of the four properties interviewed, impacts were significant for each for different reasons.

Farm 1 is primarily impacted by He Waka Eke Noa and ongoing resource consenting costs. Farm 1 is somewhat fortunate that it was intensively farmed through the National Reference period of 2014-2019 therefore future land use is not limited by this legislation. Like many of their peers, Farmer 1 has found the volume and pace of legislation, policies and proposals to be somewhat overwhelming.

Farm 2, being an extensive property, is more limited in land use opportunities due to the nature of the property. This does not minimise the impact of Government policies, proposals and programmes on the farm though. Farm 2 is primarily affected by the NES-F, specifically the stock exclusion and low slope regulations. Combined, the impacts of these two clauses could cost Farm 2 \$1.26 million. Farmer 2 has found the volume and number of iterations of policy so overwhelming they have begun to ignore them as long as possible to avoid wasting their time. Even though there is a likely financial impact on Farm 2 the personal impact has been significant as well.

Farm 3 is a great example of a farm that has been farmed with future generations at the forefront of decision making for a number of years. This has led to Farm 3 being farmed more conservatively than its neighbours which under the NES-F which could potentially peg its land value to the tune of \$2.9 million. Legislation, policies and proposals have had a significant personal impact on the owners of Farm 3. One area of concern is around the potential changes to their farm business if further rules are introduced to protect SNAs under the NPS-IB which could impact up to one third of their farm area given the shape and size of QEII bush on-farm. Such a large number of policies and proposals has led Farm 3 to reconsider their future as farmers which is a view shared by many other farmers.

Key legislation limiting development on Farm 4 is the NES-PF, the NES-IB and NES-F. This is particularly frustrating for the owners of Farm 4 having undergone tenure review and the associated understanding that their remaining land could be further developed. Limitations of local, regional and government policy could see Farm 4 unable to subdivide around 700 ha of otherwise unproductive land which could be worth up to \$35 million as lifestyle blocks. Like many other farmers, the number of policies and pace of change has been frustrating for the owners of Farm 4.

The impacts on each of the farms are unique and there are a number of unintended consequences as a result of poorly written or vague policy. For most farmers that were interviewed FWFPs were seen as potentially being a practical and welcome way to navigate these policies and ensure solutions are fit for purpose to individual farms and farmers.

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8. APPENDICES

Appendix A – Key Policy Dates, Potential Costs

Date	Regulation / policy	Approx Cost (Ballpark & variable)	Key changes sought
2020			
September 2020 Freshwater	National Environmental Standard for Freshwater Management (NES-F) took effect with many new regulations effecting farming and potentially requiring consents including relating to stockholding areas, intensive winter grazing, nitrogen use, land intensification, and activities near wetlands. Key issues and dates under the NES-F are included separately below.	Various depending on consenting requirements. Key likely costs included separately below.	
September 2020 Freshwater	<p>Stockholding Area consents needed for stockholding areas (such as feed pads, wintering pads, and calving pads) that;</p> <ul style="list-style-type: none"> - do not meet permitted activity conditions including a sealed base, effluent system, and distance from waterway OR - do not have a certified freshwater farm plan certifying effects are no greater than if the permitted activity conditions were met. <p>NOTING: that the Freshwater farm plan pathway regulations are not</p>	\$10,000 - \$15,000 if consent required.	Finalise and make available FWFP pathway.

	yet finalised so this pathway is not yet available.		
2023			
01 May 2023 Freshwater	<p>Intensive Winter Grazing consents for activities that:</p> <ul style="list-style-type: none"> - do not meet permitted activity conditions such as slope, distance from waterways, exclusion of critical source areas, and maximum area OR - do not have a certified freshwater farm plan certifying effects are no greater than if the permitted activity conditions were met. <p>NOTING: that the Freshwater farm plan pathway regulations are not yet finalised so this pathway is not yet available.</p>	\$10,000 - \$15,000 for consent. Many farmers will need consent under this regulation.	<p>Finalise and make available FWFP pathway.</p> <p>Amend slope rule to 15°</p>
2023 onwards Freshwater	<p>Freshwater farm plan regulations commence rollout from mid-2023. The first regions for roll out in 2023 are:</p> <ul style="list-style-type: none"> - Southland - Gisborne (now delayed due to Cyclone Gabrielle) - Waikato 	<p>\$10,000 - \$20,000 for initial plan set up and certification (depending on consultant use). Ongoing costs of approx. \$5000 every 3-5 years depending on audit and recertification requirements.</p> <p>Note: these costs do not include any on the ground actions to be</p>	<p>Ensure FWFPs are practical, straightforward to prepare, useful for the farmer and integrate well with existing farm planning.</p>

		taken – i.e. planning/paperwork costs only.	
01 July 2023 Freshwater	Stock Exclusion <ul style="list-style-type: none"> - Dairy cattle and pigs on any terrain excluded from waterways (lakes and ‘wide’ rivers) - Beef cattle and deer intensively grazing on any terrain excluded from waterways (lakes and ‘wide’ rivers) - All cattle, deer and pigs excluded from wetlands 		Amend the low slope map which is the current mechanism for determining whether the stock exclusion regulations apply to a given piece of land. Replace with more general rule allowing for regional and situational variance.
01 July 2023 Freshwater	Nitrogen consents <ul style="list-style-type: none"> - Operating at or below the nitrogen cap: phased reduction consent / non-complying activity consent. 	\$10,000 - \$20,000 if consent required. Unlikely large consenting requirement in sheep & beef sector under this rule.	
31 December 2023 Freshwater	Otago Regional Council to notify as per NPS-FM (noting ORC have applied for a 6-month extension)		
2024			
03 September 2024 Freshwater	Irrigation <ul style="list-style-type: none"> - Water take measurement every 15 minutes is required for takes of 10 litres per second or more 	Cost unknown. Will depend on infrastructure and whether this needs to be upgraded to meet rule.	

<p>31 December 2024 Freshwater</p>	<p>Regional Councils (except Otago Regional Council) are expected to have notified plans as per the NPS-FM.</p>	<p>No direct cost to individual farms for the planning process.</p> <p>However new rules may result as a result of this process (particularly due to the new limits on water quality in the NPS-FM) that require further consents by farmers. This process could take years and will mean a lot of uncertainty for farmers during this period about what they are able to do, like the current water regional council planning processes.</p> <p>Farmers may engage in the planning process which could cost if they engage experts etc.</p>	
2025			
<p>2025 Productive land</p>	<p>National Policy Statement for Highly Productive Land (NPS-HPL)</p> <ul style="list-style-type: none"> - Regional Councils have until 2025 to review and change their regional plans to give effect to the NPS-HPL. 		

01 July 2025 Freshwater	Stock Exclusion - Beef cattle and deer must be excluded from access to waterways based on low slope map.	Fencing and bridging/culverting costs will vary by farm. Costs will be significant (hundreds of thousands) and out of proportion with any benefit in some situations. Note that B+LNZ in general agree with stock exclusion from waterways, however, seek sensible rules that provide variance for areas/situations where cost is significant for negligible environmental benefit.	Amend the low slope map which is the current mechanism for determining whether the stock exclusion regulations apply to a given piece of land. Replace with more general rule allowing for regional and situational variance.
17 October 2025 Productive land	National Policy Statement for Highly Productive Land (NPS-HPL) - Regional Councils must by now have notified HPL in proposed regional policy statements.		
2026			
03 September 2025 Freshwater	Irrigation - Water take measurement every 15 mins is required for takes of 5 litres per second or more.	Cost unknown. Will depend on infrastructure and whether this needs to be upgraded to meet rule.	
Ongoing or Pending Decision			
From 2023	Submissions, hearings and regulation setting through regional Freshwater Plans.	No direct cost to individual farms for planning process, although	

Freshwater		rules may result that require consents. Farmers may engage in the planning process which could cost if they engage experts etc.	
2023 Biodiversity	<p>National Policy Statement for Indigenous Biodiversity expected to be gazetted:</p> <ul style="list-style-type: none"> - Council processes required to identify, map and set policies and rules around Significant Natural Areas will commence 	<p>There are likely to be costs to farmers where a potential SNA is identified on their land as they may need to enter planning process and engage experts to present case (possibly tens of thousands of dollars).</p> <p>In some regions like the West Coast and Northland, significant tracts of the farm are likely to be identified as an SNA. On average about 30% of sheep and beef farmers have native biodiversity on them.</p> <p>Resulting rules may require on the ground costs (i.e., fencing), lost opportunity costs from new restrictions or consenting costs for previously permitted activities.</p>	<p>Make sure the settings in the NPSIB are right, particularly the SNA criteria to ensure it captures the most significant biodiversity, not virtually all native vegetation.</p>

<p>2023</p> <p>RMA reform</p>	<p>First tranches of RMA reform expected to be gazetted:</p> <ul style="list-style-type: none"> - Natural and Built Environment Act - Spatial Planning Act <p>Full roll out and transition to the new system will take around 7-10 years</p>	<p>Costs unknown – will be dependent on planning processes and new plans developed, but could leave to years of uncertainty.</p>	<p>Take the time to work with sector groups and get the new system right, so that it is an improvement on the current system.</p>
<p>1 January 2025</p> <p>Agricultural emissions</p>	<p>Agricultural Emissions Pricing commences (pending decisions to come).</p>	<p>Costs dependent on final emissions system and pricing, however, depending on the cost the impact on sheep and beef farmers (particularly extensive farmers) could be significant.</p> <p>MPI modelling in late 2022 indicated that the combined impact of a price on agricultural emissions and the sale of sheep and beef farms into forestry as a result of the ETS price could lead to a 20% reduction in sheep and beef production.</p>	<p>Make sure sequestration is recognised.</p> <p>Fair pricing and system across sectors.</p>

Appendix B – Climate Change Policy Supporting Information

Forest Land Definition

Forest Land Definition as set out by the Ministry for Primary Industries (2022). To be eligible to be entered in the ETS a forest must:

- Have been planted post 1989.
- cover at least 1 hectare in area.
- contain species that can reach at least 5 metres in height when mature in that location.
- have (or be expected to reach) crown cover of more than 30% in each hectare.
- be at least (or expected to reach) 30 metres wide on average.

Emissions Calculation

The proposed method for calculating farm emissions and costs is (Beef + Lamb NZ, 2022):

$A + B - I - C = \$$ where:

A is the cost of the CH₄

B is the cost of the long lived gasses (N₂O and CO₂)

I is the incentive discount for approved activities that reduce emissions (limited on S&B farms)

C is the value of on-farm sequestration.

Vegetation offsets

Figure 2 is a summary of the vegetation offsets used in the B+LNZ GHG emissions calculator. It is stressed that these vegetation categories are not the same as those proposed under HWEN, rather an indication of vegetation that exists on-farm. These categories will not necessarily be eligible for payments under HWEN.

Figure 2: Summary of vegetation offsets from the B+LNZ GHG emissions calculator (Beef + Lamb New Zealand, 2023)

VEGETATION (EXOTIC AND INDIGENOUS)

Enter the total area of woody vegetation on your farm over 0.25ha. 'Forest' is able to reach a mature height of at least 5 metres. 'Shrubland' is the woody vegetation under 5 metres.

These vegetation types are indicative only – they are provided to give an idea of the extent of sequestration happening on farm. They do not reflect eligibility for sequestration credits under the proposed and evolving agricultural emissions pricing system (through He Waka Eke Noa) or the Emissions Trading Scheme (ETS). B+LNZ will provide updates on eligibility when available.

	Area at open (ha)	Harvested this year (ha)
Exotic forest (28 years or younger)	0.0 ha	0.0 ha
Indigenous forest - regenerating natural forest (less than 100 years old)	0.0 ha	
Indigenous forest - established natural forest (more than 100 years old)	0.0 ha	0.0 ha
Shrubland (less than 30 years old)	0.0 ha	
Shrubland (more than 30 years old)	0.0 ha	0.0 ha

Appendix C – Outline of Interview Process

<u>Emissions Trading Scheme</u>
<ul style="list-style-type: none"> – Is there any land that is pre 1990 forest? – Is there any land that is registered in the ETS? – Is there any land that will be planted?
<u>He Waka Eke Noa - Pricing of Agricultural emissions</u>
<ul style="list-style-type: none"> – Have you completed a B+LNZ or other GHG emissions calculator? If so get access, if not, gather information to complete B+LNZ calculator for 2021-22 (N fertiliser use and lime, opening and closing stock numbers, sales and purchases, grazing movements - numbers and dates of animals, farm area, GST number, vegetation on-farm) – Has the farmer calculated their emissions ‘tax’? Will this have any impact on their farm practices
<u>NPSIB</u>
<ul style="list-style-type: none"> – Areas identified as SNA’s? – Areas that could potentially be identified as SNA’s – Areas of other biodiversity e.g. outstanding natural landscapes etc? – Areas native animals e.g. NZ Falcon may use as flight paths?
<u>NPS-FM</u>
<ul style="list-style-type: none"> – Potential of stock water use to be limited under Te Mana O te Wai? – Regional targets for water quality? – Wetlands identified on-farm? Current stock exclusion status – Areas that ‘should’ be identified as wetlands
<u>NES-F</u>
<ul style="list-style-type: none"> – Need any new culverts?
<u>Intensification of Landuse</u>
<ul style="list-style-type: none"> – Land use on 2nd September 2020? – Stock grazed on-farm from 2014-2019? – Desire to intensify land use from the above levels? If so, how much and why? – Consents required or on-hand?
<u>Intensive Winter Grazing</u>
<ul style="list-style-type: none"> – Any IWG between 2014-2019? – Area winter grazed? – Slope of paddocks grazed? – Consents required or on-hand?
<u>Feedlots</u>
<ul style="list-style-type: none"> – Any feedlots on-farm? If so, what stock are grazed in them? – If there are feedlots, are they >50m from a water source, is base sealed, is effluent disposed of in accordance with regional or district plans? – If any of the above not met, are there consents?
<u>Stock Exclusion</u>
<ul style="list-style-type: none"> – Areas identified as low-slope that shouldn’t be? – If so, what needs to be done to meet rules? Is it practical? If not, why not? – Fencing off waterways – what is done and what needs to be done?

<u>Freshwater Farm Plans</u>
<ul style="list-style-type: none"> - Active FWFP? - Thoughts about FWFPs
<u>Water Reporting Regulations</u>
<ul style="list-style-type: none"> - Consents over 5l/s? If so is there telemetry?
<u>Three Waters – Drinking water</u>
<ul style="list-style-type: none"> - Number of houses on-farm. - If 3 or more – UV treatment in-place? Annual costs? - Farm practices near water source?
<u>Highly Productive Land</u>
<ul style="list-style-type: none"> - Any LUC 1-3 land on-farm? If not known find maps of farm. - Plans for subdivision?
<u>Personal impacts and feelings relating to the Govt. Initiatives</u>
<ul style="list-style-type: none"> -