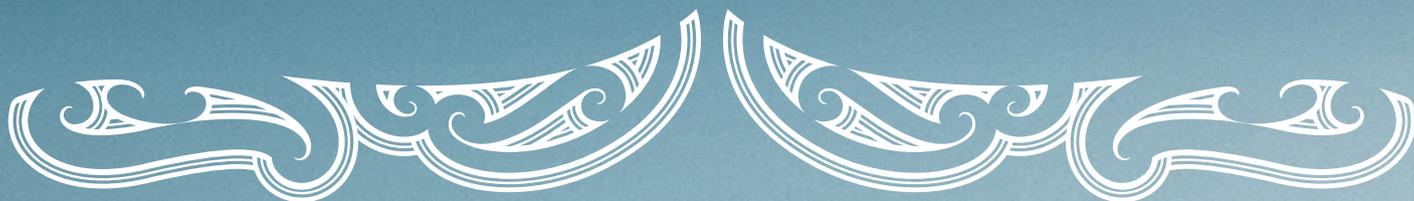




Whenua Māori in primary production

Economic contribution and productive potential

October 2025



He Taurikura Māori
Māori Partnerships & Investment
Ministry for Primary Industries

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Authors: Hillmarè Schulze, Connor McIndoe, Hugh Dixon, Satrio Wiradika, and Simon Hunt

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Foreword

I am pleased to present *Whenua Māori in Primary Production: Economic Contribution and Productive Potential*. The report was commissioned by the Ministry for Primary Industries (MPI) to give an overview of current primary production on whenua Māori and its future growth potential.

Aotearoa New Zealand has more than 1.4 million hectares of whenua Māori used for primary production. Its contribution to the economy is significant. About 33,000 people are employed on farms and forests on whenua Māori.

Major opportunities lie in boosting economic productivity from whenua Māori. The report has found that unlocking this potential could increase GDP by almost \$2 billion annually and create thousands of new jobs.

MPI has a strong track record of supporting Māori primary sector developments and has a dedicated Māori Partnerships and Investment team. In 2022, we launched the plan *Rautaki mō te Taurikura - Embracing change for prosperity*, developed in partnership with Ngā Pouwhiro Taimatua, the Māori Primary Sector Forum.

This plan is backed by tangible on-the-ground support to grow Māori agribusinesses and jobs in the primary sector. The plan helps shape MPI's work and investment and contributes to the Government's goal of doubling the value of exports by 2034.

We would like to thank Business and Economic Research Limited (BERL) and Ariki Creative for preparing this report, along with our partner agencies and organisations for their support. Above all, we would like to acknowledge the owners of whenua Māori who retain and manage this intergenerational asset as a taonga tuku iho.

I'm proud of the work our team in Māori Partnerships and Investment does to support the sector and their commitment to its success.

Manaaki whenua, manaaki tangata, haere whakamua

Tēnā koutou katoa



Glenn Webber,

Deputy Director-General, He Taurikura Māori
Māori Partnerships and Investment

Executive summary

Whenua Māori (Māori-owned land in collective ownership) is a central component of Te Ōhanga Māori (the Māori economy). This report presents the current and potential use and economic contribution of whenua Māori, identifying opportunities for improved utilisation to further grow Te Ōhanga Māori and the Aotearoa New Zealand economy.

Key findings:

- Over one million hectares of Māori freehold land and 360,000 hectares of land held by Post-Settlement Governance Entities (PSGEs) are in primary production, largely concentrated in forestry, store livestock, and stock finishing. This makes a total of over 1.4 million hectares of whenua Māori in primary production.
- Approximately 462,000 hectares of Māori freehold land and 134,000 hectares of land held by PSGEs in primary production is currently performing at 90 percent or above the regional benchmark for its land use.
- Approximately 604,000 hectares of Māori freehold land and 229,000 hectares of land held by PSGEs in primary production are performing below 90 percent of the regional benchmark for its land use.
- In 2023, whenua Māori in primary production was estimated to generate approximately \$5.3 billion in gross domestic product (GDP) and support employment of around 33,700 full-time equivalents (FTEs).

There is an inherent economic opportunity from optimising current primary production and introducing new primary production on whenua Māori. The modelling in this report shows that:

- Optimising current primary production could increase GDP from Māori freehold land by \$1 billion and land held by PSGEs by \$200 million. This would also increase total employment supported by around 7,450 FTEs
- Introducing new primary production on whenua Māori could increase GDP from Māori freehold land by \$691 million and land held by PSGEs by \$62 million. This would also increase total employment supported by around 6,490 FTEs.

1 Output is the total value of all goods and services a company or industry sells.

Current contribution
of whenua Māori in
primary production

Table 1 Current economic contribution of existing primary whenua Māori, 2023

	Māori freehold land	Land held by PSGEs
	<i>Primary whenua Māori</i>	
Hectares	1,065,364	363,473
	<i>Current economic contribution of existing primary whenua Māori</i>	
Output (\$m) ¹	10,574	1,532
Direct GDP (\$m)	4,667	607
Employment (FTEs)	30,809	2,910

Source: BERL analysis

Potential for
improved utilisation
of whenua Māori

This report then models the opportunity to further develop primary production on whenua Māori, through optimising current primary production on whenua Māori, and bringing new whenua into primary production.

(1) Potential for
optimising current
primary production
on whenua Māori

A large proportion of whenua Māori in primary production performs below the regional benchmarks for the same land uses. Table 2 presents the economic opportunity from supporting a more efficient and productive use of existing land. As an example, this could be achieved by supporting the establishment of governance for over 59,500 hectares of livestock land that currently does not have a governance structure in place

Table 2 Economic opportunity from optimising current primary production on whenua Māori

	Māori freehold land	Land held by PSGEs
	<i>Underperforming land</i>	
Hectares	603,593	229,480
	<i>Additional economic opportunity from optimising underperforming land</i>	
Output (\$m)	2,309	614
Direct GDP (\$m)	1,007	200
Employment (FTEs)	6,747	700

Source: BERL analysis

(2) Potential for introducing new primary production on whenua Māori not currently in primary production

The report also identified whenua Māori that is not currently used for primary production, but would be suitable for agricultural, horticultural, or forestry use. For example, there are nearly 2,200 hectares of high-quality (i.e., land use capability (LUC) classes 1 and 2) land that is currently categorised as either vacant or lifestyle that could be converted to horticulture. Table 3 presents the economic opportunity from introducing this vacant and lifestyle land into primary production.

Table 3 Economic opportunity from introducing new primary production on whenua Māori

	Māori freehold land	Land held by PSGEs
<i>Land identified as suitable for improved productive use</i>		
Hectares	216,988	58,817
<i>Additional economic opportunity from introducing suitable land into a productive, primary use</i>		
Output (\$m)	1,672	186
GDP (\$m)	691	62
Employment (FTEs)	6,254	240

Source: BERL analysis

Introducing this identified, suitable whenua Māori into primary production could increase the GDP created from whenua Māori by \$752 million annually and support close to 6,500 new full-time equivalents (FTEs).

Additional considerations for the development of whenua Māori

Whenua Māori has a well-documented set of constraints that require additional consideration:

- Nearly three quarters of primary Māori freehold land faces physical limitations that impact land use options and sustained production.² Additionally, a large proportion of Māori freehold land is vulnerable to climate change, particularly in the upper North Island.
- An estimated 21 percent of primary Māori freehold land is landlocked with no direct road access within 100 metres. The absence of direct road access constrains the economic potential of otherwise productive pieces of land.
- Many blocks of Māori freehold land have no governance in place. Governance structures are crucial mechanisms to supporting the development of Māori freehold land, providing a central point of decision-making and improving access to resources and capital.

Realising the opportunity inherent within whenua Māori

Whilst primary production is already a significant contributor to Te Ōhanga Māori, there is scope to further improve, expand, and diversify primary production on whenua Māori. Policy, investment, and targeted support are the key levers that will enable this opportunity to be realised for future generations.

2 This excludes land not in primary land uses, such as land categorised as urban, residential, industrial, and recreational.

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1 Introduction

The Ministry for Primary Industries (MPI) commissioned Business and Economic Research Limited (BERL) to undertake analysis of whenua Māori in Aotearoa New Zealand to understand its current and potential use and economic contribution. This analysis also considers how whenua Māori interacts with social and environmental factors.

Our analysis explores and estimates the potential economic opportunity of primary whenua Māori through two models:

1. **Potential for optimising current primary production on whenua Māori** – i.e., Improving the utilisation of Māori land in primary production that performs below the regional benchmark
2. **Potential for introducing new primary production on whenua Māori not currently in primary production** – i.e., Unlocking Māori land that is not in primary production, but is suitable for primary production.

This report builds and expands on previous completed research on whenua Māori. There are various ways to measure the economic contribution and productive potential of whenua Māori.³ Our approach differs from previous completed research, and we also do not model the investment and time needed to realise the productive potential. Care should be taken when comparing the analysis and results between both methodologies.⁴

3 Please see Appendix F for a glossary.

4 Please see Appendix A for a detailed methodology and comparison of the methodologies adopted in this report and in PwC (2014).

1.1 Report background

During the early 2010s, enhancing the utilisation and development of whenua Māori was a frequent subject of discussion.

In April 2011, Te Puni Kōkiri released a report outlining the aspirations and expectations of Māori landowners (Te Puni Kōkiri, 2011). There was consensus in the report that Māori land should be used in a manner that balances commercial and cultural imperatives, with the report recommending a review of the existing legislative framework to identify and ameliorate barriers that could potentially prevent this. Around the same time, in March 2011, the then Ministry of Agriculture and Forestry (now MPI) released a report providing a framework for categorising Māori land enterprises based on productive and economic performance. The purpose of the framework was to enable better description of a range of issues across the Māori freehold land resource base (Ministry of Agriculture and Forestry, 2011).

Shortly after, in 2012, a panel was appointed to undertake a review of Te Ture Whenua Māori Act 1993 with the purpose to “empower Māori landowners to achieve their aspirations while enabling the better utilisation of their land” (Beehive, 2012). The scope of the review focused on four key areas: ownership, governance, access to resources, and utilisation.

In the years that followed, the quality of data available on whenua Māori improved, and some of the existing data issues associated with whenua Māori were mitigated. Improvements in the quality of data available on whenua Māori resulted from continued efforts by the Māori Land Court (MLC) and Land Information New Zealand (LINZ) to update and align their respective datasets. Simultaneously, several reports were released that contributed to the review of Te Ture Whenua Māori Act 1993.

This included a series of reports that PricewaterhouseCoopers (PwC) completed for MPI between 2012 and 2014, which analysed the productive capacity and potential of Māori freehold land. This current report traces its origins back to this series of reports (PwC, 2012, 2013, 2014). These reports sought to determine how improved governance structures, strategy, and development could unlock the potential economic value of Māori freehold land by shifting land into the productive sector. Each report provided economic evidence of the opportunity and potential of Māori freehold land and was explicitly focused on the economics of Māori freehold land. These reports were the basis for establishing MPI’s Māori agribusiness work programme.

In 2013, BERL added to the growing evidence base on whenua Māori, producing two reports for Te Puni Kōkiri that determined the current utilisation and economic value and the potential utilisation of whenua Māori. These reports were specifically aimed at addressing existing data gaps as part of the review of Te Ture Whenua Māori Act.

In March 2014, the review panel published their Te Ture Whenua Māori Act review report with five key recommendations to whenua Māori law. In response, and based on the findings from the review report, the Government announced the drafting of a new Te Ture Whenua Māori bill to reform governance and management of whenua Māori (Beehive, 2014). The next year, a ministerial advisory group was established to provide independent advice on the exposure draft of the bill and the Māori Land Service (Te Puni Kōkiri, 2021).

After being introduced in 2019, Te Ture Whenua Māori Amendment Act 2020 introduced new laws that improved support for housing development on whenua, streamlined processes for Māori land trusts and incorporations, and better supported issues related to landlocked land and retaining land.

1.2 Report scope

It has been over a decade since a series of reports were released that marked an important step in building a detailed understanding and evidence base of whenua Māori, specifically related to the productive capacity and potential of primary land. This report intends to build on, expand, and update the current understanding of whenua Māori. It includes information and data collected and collated from a range of public and private sources. We do, however, recognise that this report does not provide a complete picture of whenua Māori in Aotearoa New Zealand. Further work and greater collaboration are needed to continue to advance the current understanding of whenua Māori.

Land included and land not captured

Specific types of land captured in our analysis:

- Māori freehold land and customary land
- Central North Island (CNI) collective and Ngā Whenua Rāhui forests
- Land returned through Treaty settlements ([partial picture](#)).

Land not captured at present:

- General title land in Māori ownership
- Post-settlement governance entities (PSGEs) land in urban areas.

1.2.1 Data sources

Two main data sources form the core of our evidence base in this report: Māori freehold land under the Māori Land Court (MLC) and a specialised, subset of data on land held by PSGEs. Throughout the report, we make clear and distinct reference to each dataset that is being presented.

Primary data source – **Māori freehold land** from the Māori Land Court

Māori freehold land, as held under the MLC, has been the primary data source in most whenua Māori-based research, including the early reports around 2013, and has remained our primary data source for this research.⁵ For this report, we have used the MLC's Māori Land Update 2023.⁶

5 In its annual Māori Land Update, the MLC provides information and data about whenua Māori, including detailed Māori land information, such as the number of customary and freehold titles of Māori land.

6 The more recent (2024) update was released following the commencement of data linking and matching processes with CoreLogic and was unable to be included.

Complementary data source – Land held by Māori PSGEs

To expand on and complement our primary data source, we were provided with and have included analysis of a specialised dataset on a subset of land held by PSGEs for the purposes of expanding the traditional land definition captured under the MLC. This dataset is not a complete or perfect picture but provides a foundation for continued research for a more comprehensive overview. There is opportunity to further expand and refine the dataset to more accurately collect and measure land held by PSGEs.

This dataset was developed manually by analysing publicly available information. It has a focus on identifying Treaty settlement land (i.e., iwi that have settled and received land as commercial or cultural redress). The process for building this dataset included manually linking Treaty settlement documents' appellations with Land Information New Zealand (LINZ) Landonline.

For the purposes of this report, we refer to land captured by this dataset as 'land held by PSGEs'; however, we note that it does not include all land held by PSGEs.

The boundary determinations of the 11 rohe in the report are depicted in Figure 1.

1.2.2 Limitation

A critical component of our methodology was supplying Cotality (formerly CoreLogic) cleaned versions of our two main data sources so that further property characteristics, land valuations, and capital valuations, amongst other variables, could be matched to our evidence base of whenua Māori.⁷

While reasonable skill and care were applied throughout this process, we acknowledge that some limitations may exist in the accuracy of property-level linkages. While we do not expect this to materially affect the overall findings, readers should be aware of this limitation when interpreting results at a granular level.

1.2.3 Rohe determinations

Figure 1 Rohe boundary classification⁸

Legend

Rohe

	Te Tai Tokerau
	Tāmaki Makaurau
	Waikato
	Te Moana a Toi-Waiariki
	Tairāwhiti
	Tākitimu
	Te Tai Hauāuru
	Kurahaupō
	Te Whanganui ā Tara
	Te Tau Ihu
	Waitaha



Source: BERL analysis

⁷ See Appendix A for more information.

⁸ Rēkohu/Wharekauri is represented within the Tairāwhiti rohe. Please see Appendix E for further classification.



2 Whenua Māori in Aotearoa New Zealand

The following section provides an overview of Māori freehold land and identified land held by PSGEs. We present the current utilisation (2023), past utilisation (2013), land quality, and value of both land types.

In Aotearoa New Zealand, there were approximately 1.6 million hectares of Māori freehold land and around 829,000 hectares of land held by PSGEs in 2023, combining for a total of 2.4 million hectares of whenua Māori identified in our datasets. This represents an estimated nine percent of all land in Aotearoa New Zealand.

Table 4 Whenua Māori by rohe in Aotearoa New Zealand, 2023

Rohe (Hectares)	Māori freehold land	Land held by PSGEs
Te Tai Tokerau	156,939	72,582
Tāmaki Makaurau	28,866	167,595
Waikato	294,508	71,484
Te Moana a Toi-Waiariki	253,500	28,707
Tairāwhiti	276,699	30,639
Tākitimu	133,575	54,649
Te Tai Hauāuru	227,662	16,079
Kurahaupō	15,707	61,166
Te Whanganui ā Tara	113,397	23,139
Te Tau Ihu	8,919	104,319
Waitaha	49,466	198,365
Total	1,559,238	828,722

Source: BERL analysis

The largest share of Māori freehold land is in Waikato (294,508 hectares), followed by Tairāwhiti (276,699 hectares) and Te Moana a Toi-Waiariki (253,500 hectares) (Table 4).⁹

For land held by PSGEs, the three leading rohe are Waitaha (198,365 hectares), Tāmaki Makaurau (167,595 hectares), and Te Tau Ihu (104,319 hectares).

9 See Figure 1 for the rohe boundary classification.

2.1 Whenua Māori is largely in primary land uses

Table 5 provides an overview of whenua Māori land use as captured within our dataset.¹⁰ In 2023, around one million hectares of Māori freehold land were used for primary purposes, largely concentrated in forestry, store livestock, and stock finishing.¹¹ In terms of identified land held by PSGEs, around 363,500 hectares were in primary use, predominately in forestry, due to Treaty settlements.

Table 5 Whenua Māori by land use, 2023

Land use (Hectares)	Māori Freehold land	Land held by PSGEs	Total
Arable farming	1,411	0	1,411
Dairying	59,775	9,543	69,319
Forestry*	387,176	323,292	710,468
Market gardens and orchards	4,749	2,476	7,224
Rural industry	1,048	2	1,050
Specialist livestock	160	27	187
Stock finishing	192,870	4,581	197,452
Store livestock	333,765	21,377	355,143
Multi use within rural industry	84,409	2,175	86,584
Primary land	1,065,364	363,473	1,428,838
Residential	16,685	3,841	20,526
Lifestyle	61,680	382	62,062
Commercial	105	137	242
Industrial	2,263	49	2,311
Community services	4,599	5,679	10,278
Transport	484	156	640
Recreational	90,238	202,595	315,222
Utility services	3,949	1,662	5,611
Other	61,453	0	61,453
Non-farming land	263,844	214,502	478,346
Vacant	187,863	77,295	265,159
Unknown	42,166	173,451	215,617
Total	1,559,238	828,722	2,387,960

* This represents commercial forestry land.

Source: Insights derived by BERL based on CoreLogic data

10 The presented land use categories have been aggregated up from approximately 80 detailed land-use categories as determined by LINZ.

11 Appendix B provides a high-level description of each land use category presented.

2.1.1 Primary land is at the core of Te Ōhanga Māori

Whenua Māori that is used for primary production represents a core component of Te Ōhanga Māori. In this report, the economic potential of whenua Māori is explored within the context of primary land. Primary land refers to land used for a combination of farming, horticulture, and forestry activities.

The two pastoral land uses, store livestock and stock finishing, combine to represent around half (526,600 hectares) of Māori freehold land with a designated primary commercial use. Māori freehold land used for dairy farming is also well represented at around 60,000 hectares. These three land uses are dominant features of Aotearoa New Zealand's primary sector and export profile, and traditionally they have also served important roles in sustaining rural communities.

Outside of forestry, Māori freehold land classified as multi use within rural industry also accounted for a notable amount (84,400 hectares) of primary land.¹²

Forestry land is particularly unique in land use analysis

As a land use, forestry presents unique challenges that distinguish it from other primary industry land uses. For example, inclusion in the Emissions Trading Scheme (ETS), longer time horizons from planting to harvesting, and cutting rights.

12 This land classification is broad, and includes any number of multiple primary, productive uses within one land parcel. For example, it could include a single land parcel with a combination of dairy, pasture, and arable uses.

The identification and classification of forestry land is also challenging

One inherent challenge with understanding forestry land in our datasets is the identification and classification of different types of forestry. While commercial forestry is easier to identify, conservation, protected, and indigenous forestry is less obvious. Similarly, forestry land that is currently marked as vacant (i.e. currently devoid of trees) must also be identified.

Land categorised as recreational land can include several different uses, from playgrounds and gardens to parks and land protected under Ngā Whenua Rāhui. It is a broad category of land that can hold social, environmental, and cultural importance and does not directly serve a commercial purpose. Although categorised as recreational land, this specific area could be better understood as cultural land open to recreational purposes (e.g., hiking and hunting). Such land is intentionally excluded from our economic modelling.

Table 5 indicates that there are around 112,600 hectares of Māori freehold land, and 202,600 hectares of land held by PSGEs, categorised as recreational land. A large portion of this land would include land with Ngā Whenua Rāhui covenants in place or protected forestry.

Vacant land is classified as land currently unused but can also represent large land blocks in forest areas. It can include land without active management in place and land developed but idle. Vacant land could also be unused for any number of reasons, from no governance structure to manage and decide on the land's use or the inability to access the land (landlocked). Ultimately, vacant land can serve a commercial purpose, as well as an environmental, cultural, or recreational purpose.

Forestry land presents unique economic and environmental considerations

Beyond identifying the array of different forms of forestry land, forestry also requires careful management, specifically in relation to environmental management. The ETS is an important consideration for any forestry owner in Aotearoa New Zealand, and both commercial and indigenous forests can qualify for it. The ETS classifies forestry into two groups based on different definitions: pre-1990 or post-1989.

- Post-1989 forests are forests that were established after 31 December 1989. They can earn New Zealand Units (NZUs).
- Pre-1990 forest land is land that was forest land on 31 December 1989. It cannot earn NZUs. The landowner is likely to be liable to surrender NZUs if deforestation occurs and the area is not replanted into forest (BERL, 2021).

A large portion of Māori freehold land in forestry was planted before 1990, leaving it ineligible to earn NZUs from the ETS. Furthermore, in the case of deforestation, the landowner could be liable to surrender NZUs if the land is not replanted into forest. Therefore, changing use away from forestry may be expensive, particularly if it is pre-1990 forestry land.

The characteristics of Māori freehold land, specifically in forestry, “mean that (these) landowners may have more limited options and face challenges in terms of land use change” for the transition to a low-emissions economy (BERL, 2021).

Exclusion from the ETS can reduce the market value of the land and may also impact the capital value (CV) of Māori forestry land parcels, particularly where ETS participation would otherwise provide a valuable revenue stream.

At the same time, commercial forestry land is constrained by its existing productive capacity in that there is limited scope for improving the economic contribution of the land, specifically compared to other primary sector commercial uses. While other primary land uses, such as arable land or orchards, typically have much shorter production cycles, forestry takes years to mature. It is generally much easier to implement measures to increase yields and production of other primary uses – for example, through technology or labour – than it is for forestry. The economic output of forestry land is largely determined by its location and soil.

While commercial forestry, captured under the primary forestry land use, has high coverage in both our datasets, owning the land classified as forestry does not necessarily mean owning the trees or having the rights to harvest them – a distinction our analysis cannot capture. We acknowledge this as an existing shortfall in the current available data. This is an area where understanding needs to be improved.

A key factor in such a large representation of forestry land is the fact that forestry land is often returned in Treaty negotiations with varying outcomes in regard to cutting rights and ownership. Through more than 70 Treaty settlement Acts, Māori have regained ownership of approximately 511,000 hectares. In addition, about 47,700 hectares of ex-Crown Forest Land brought by Māori are now under iwi-Crown co-management, and around 33,900 hectares of Crown lease forestry operate on Māori-owned land (Ngā Pou a Tāne, 2024).¹³ A current shortfall in our existing understanding of Māori ownership in forestry is the ability to differentiate between forms of management rights.

2.1.2 Whenua Māori use outside of primary land uses

Outside of recreational land, which we know is often large reserves or protected land, other common non-primary land uses within whenua Māori include lifestyle, other, and residential.¹⁴

There are 61,680 hectares of Māori freehold land in lifestyle use, which, given the categorisation of this land, aligns with the large number of hectares in pastoral or primary use more broadly. Land categorised as lifestyle typically entails small rural blocks next to larger sections of land where the main income is from farming. Around 40,000 hectares (or 64 percent) of lifestyle Māori freehold land blocks were under 25 hectares in size and, specifically, 23 percent were between three and ten hectares.

2.1.3 Land use change is complex and can be influenced by several factors

Land-use change can be driven by biophysical, economic, technological, social, and personal factors. It has been a prominent feature of the landscape in Aotearoa New Zealand, as well as a strength of our primary industry (AgFirst, 2017). Land use is often complex and decisions result from a combination of interacting factors. The most common driver of land-use change are economic-related factors, such as improved profitability from an alternative use or market trends.

The following provides an analysis of how the utilisation of Māori freehold land has changed and grown between 2013 and 2023, and, if land has changed, what from.¹⁵ It is important to note that the improvement in the classification and accuracy of data can reveal itself in apparent land-use changes where, in fact, the classification of existing land blocks has improved to be more precise.

13 Ex-Crown Forest Licensed Land is land formerly owned by the Crown and leased to forestry companies. In many settlements, this land was transferred back to Māori ownership with payments for its value, while licensees retained rights to existing trees until harvest.

14 Land use categorised as other most often includes non-economic uses of a government or civic area.

15 CoreLogic provided 2013 valuations for the 2023 dataset, allowing a backwards look at each record's land use. Since this is a backwards look from the 2023 records, the total hectares of Māori freehold land do not vary between 2013 and 2023. In addition, land held by PSGEs was unable to be tracked from 2023 back to 2013.

Māori freehold land has experienced notable changes in land use

The largest gain in land use for Māori freehold land occurred with forestry land, which aligns with trends seen nationally (AgFirst, 2017). The amount of Māori freehold land used for forestry increased by 78,797 hectares between 2013 and 2023, reaching around 387,200 hectares. The most common conversion was from store livestock – around 11 percent of forestry land in 2023 was converted from store livestock.

While it appears that the total hectares of Māori freehold land in dairy decreased between 2013 and 2023, what is largely apparent is a reallocation of the land use. During this period, 24,000 hectares of dairy land changed to be classified as multi use within rural industry in 2023. This suggests that existing dairy farms incorporated other complementary uses into their farm production practices, such as grazing or other pastoral uses. Another common conversion was stock finishing to dairy – around 17 percent of dairy land in 2023 was converted from stock finishing after 2013.

Table 6 Māori freehold land, 2013-2023

Māori freehold land (Hectares)	2013	2023	Change (%)	Actual
Arable farming	1,786	1,411	-21	-375
Dairying	74,145	59,775	-19	-14,369
Forestry	308,378	387,176	26	78,797
Market gardens and orchards	3,263	4,749	46	1,486
Rural industry	1,293	1,048	-19	-245
Specialist livestock	2,870	160	-94	-2,710
Stock finishing	211,531	192,870	-9	-18,660
Store livestock	394,063	333,765	-15	-60,298
Multi use within rural industry	65,726	84,409	28	18,683
Primary	1,063,055	1,065,364	0	2,309
Non-farming land	271,681	263,844	-3	-7,837
Vacant	182,335	187,863	3	5,528
Unknown	42,166	42,166		
Total	1,559,238	1,559,238		

Source: Insights derived by BERL based on CoreLogic Data

There has also been a noteworthy increase in the amount of Māori freehold land in use for market gardens and orchards. Between 2013 and 2023, Māori freehold land in market gardens and orchards increased by 46 percent – one of the highest rates of growth – although from a low starting base.

For land that was categorised as market gardens and orchards in 2023, 12 percent was stock finishing in 2013, and a combined 18 percent of land was converted from either arable, dairy, or forestry land. Similarly, around one-third of Māori freehold land in arable farming in 2023 was originally store livestock in 2013.

2.1.4 The land use quality of whenua Māori is particularly limiting

Land Use Capability (LUC) classes are an assessment of the land's capability for use while allowing for its physical limitations (e.g., rock type, soil, and slope) and its versatility for sustained production (Landcare Research, 2025). "Capability is used in the sense of suitability for productive use or uses after taking into account the physical limitations of land (Landcare Research, 2009)."

There are eight classes, and the higher the rank, the less suitable the land is for production with significantly more limitations and/or risks.¹⁶ Land with a high LUC class (e.g., seven to eight) has very limited options for productive primary uses, if at all, or requires active management to achieve production.

¹⁶ Please see Appendix B for a description of each LUC class.

Nearly three quarters of primary whenua Māori faces several physical limitations to its sustained production

The LUC classes of Māori freehold land in a productive, primary use are presented in Table 7. Land that is most suitable and versatile for a range of primary uses – LUC classes one and two – only represents four percent of primary Māori freehold land. A further 24 percent holds an LUC class of three or four, meaning it maintains some versatility for production but faces moderate limitations.

Table 7 Land Use Capability (LUC) class of primary Māori freehold land, 2023

LUC Class	Description	Hectares	Share (%)
One and two	Very good multiple-use land, minimal to slight limitations.	33,816	4
Three and four	Moderate to significant limitations to arable, suitable for pastoral use.	219,921	24
Five	Highly productive pastoral land, not suitable for crops.	6,190	1
Six	Slight to moderate limitations to pastoral use, suitable for pasture, tree crops, and forestry.	345,028	37
Seven	High-risk land with severe limitations, suitable for forestry.	247,076	27
Eight	Very severe to extreme limitations to all productive uses, suitable for erosion control, water management, and conservation.	70,921	8

Source: BERL analysis

Most primary Māori freehold land holds a higher LUC class, with a combined 663,025 hectares split between LUC classes six and eight. These LUC classes cover land typically faced with a range of limitations to its productive use.

This in large part reflects the history of Māori land loss, where historical confiscation of Māori land was “focused on high-quality land” leaving a large portion of poor-quality land with limited options for productive use (MPI, 2014).

The LUC classes of whenua Māori by rohe paint a particularly stark picture

The extent to which Māori freehold land is designated in higher LUC classes becomes starker when assessing the LUC class of Māori freehold land by each rohe in Aotearoa New Zealand (Table 8).

Classes six and seven are the dominant LUC in every rohe, especially Waitaha (79 percent), Tākitimu (73 percent), and Tairāwhiti (67 percent).¹⁷ We note that the limited number of primary Māori freehold land in Te Tau Ihu is strongly concentrated in LUC class seven.

Table 8 Share of rohe primary Māori freehold land by LUC class, 2023

Rohe	LUC class (%)							
	One	Two	Three	Four	Five	Six	Seven	Eight
Te Tai Tokerau	0	1	5	19	0	46	20	9
Tāmaki Makaurau	0	12	26	16	0	27	17	3
Waikato	0	2	10	19	1	47	18	4
Te Moana a Toi-Waiariki	0	5	12	13	0	29	33	7
Tairāwhiti	0	4	14	5	0	36	31	10
Tākitimu	1	4	12	2	2	35	38	6
Te Tai Hauāuru	2	3	19	9	1	30	24	12
Kurahaupō	0	10	23	3	0	31	33	1
Te Whanganui ā Tara	2	0	18	1	0	25	47	6
Te Tau Ihu	0	4	0	0	5	1	88	1
Waitaha	0	0	5	15	1	45	34	0

Source: BERL analysis

The land’s quality strongly drives its actual land use

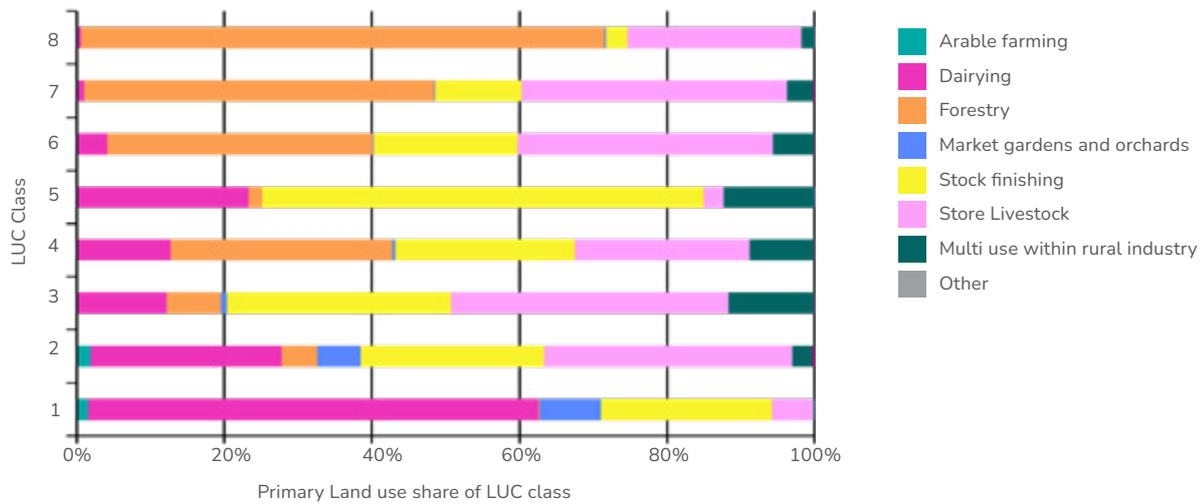
There is a strong relationship between a land block’s LUC class and its actual land use. Investigating the interaction of this relationship provides insight into whether portions of land are being used optimally, according to its LUC class description, or whether there are potentially other, more suitable uses.¹⁸ Given the lack of versatility inherent in whenua Māori, it is particularly useful to understand if optimal use is prominent.

Figure 2 presents the share that different primary land uses represent in each of the eight LUC classes for Māori freehold land only.

17 It is important to note that Te Whanganui ā Tara and Te Tau Ihu both have a relatively small number of primary Māori freehold land in comparison to all other rohe.

18 We recognise that land-use decisions are not as straightforward as simply understanding the LUC of the land; rather, decisions can be complex and consider environmental, social, cultural, and economic factors.

Figure 2 Primary Māori freehold land by land use and LUC class¹⁹



Source: Insights derived by BERL based on CoreLogic Data

At a broad level, it is evident that Māori freehold land in primary production is largely used according to its most suitable LUC uses. This is indicated by the large representation of forestry and pastoral uses, such as store livestock, in the LUC classes seven and eight. The lower LUC classes, from one to four, show a range of represented land uses, indicating the versatility in suitable uses attributed to this kind of land. It could be argued, however, that there is a disproportionate representation of pastoral uses in LUC classes two and three.

2.2 Climate change poses a significant risk to many Māori landowners

Climate hazards for hāpori Māori

In any assessment of the utilisation and potential of land, it is necessary to be aware of the risk that climate change and increasingly common adverse weather events pose to current and future land development. For reasons such as location of ownership, existing land use, and land quality, this risk and its implications is particularly impactful for Māori landowners.

The following subsection presents analysis of a climate tool developed by TPK that maps both overall climate and socio-economic information.²⁰ The tool investigates the risk of adverse impacts arising from both climate-related hazards and the vulnerability and exposure of communities.

“Climate change presents significant challenges that necessitate robust policies and implementable strategies to support resilience and avoid maladaptation. The first step towards effective policy interventions is gaining a comprehensive understanding of the risks faced by our communities. By tailoring adaptation actions to address these risks, we can better serve our communities.”

19 Other includes rural industry and specialist livestock.

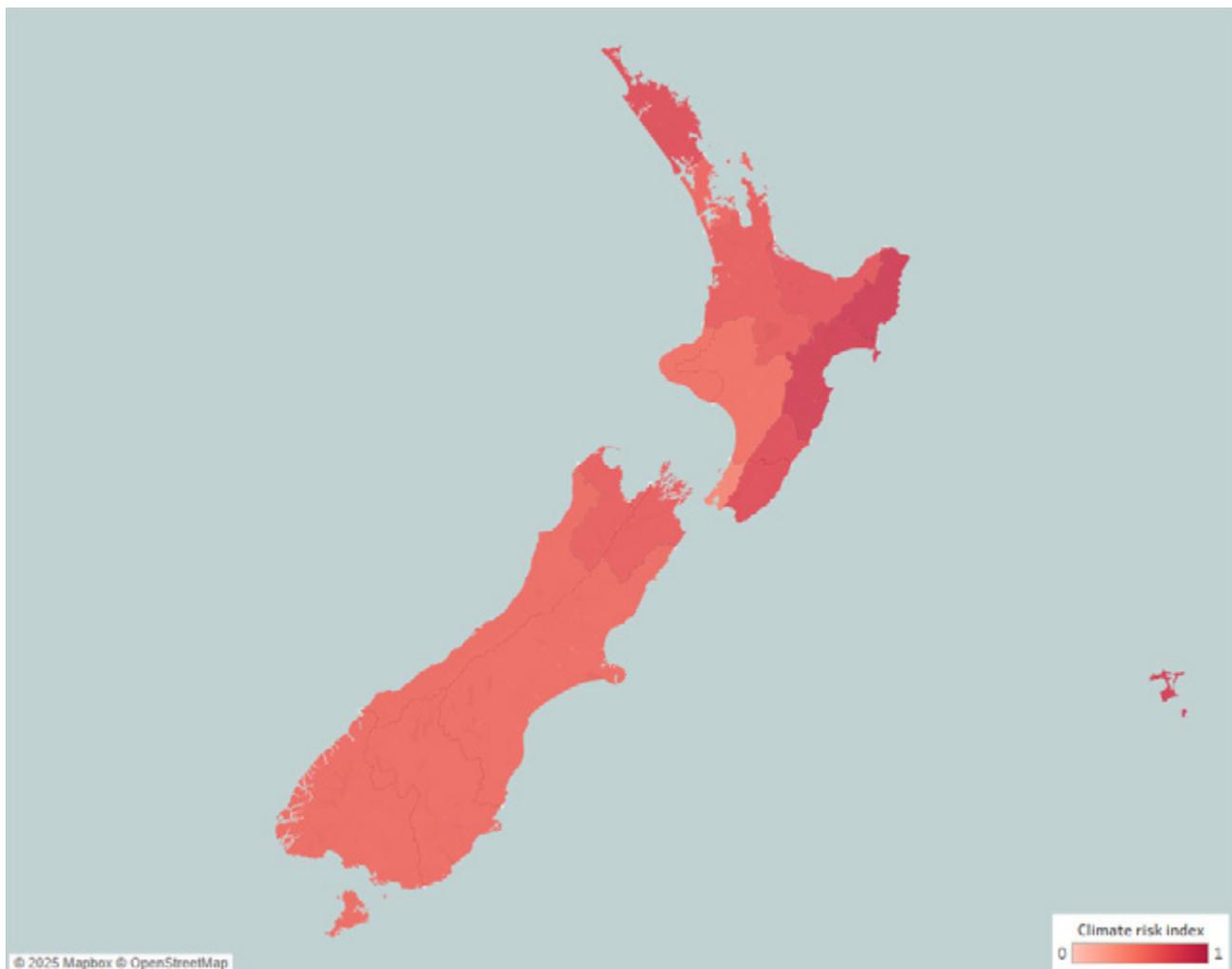
20 Available here: https://tepunikokiri.github.io/climate_data_tool/

Climate change is not linear, nor is the impact of it evenly distributed. Communities will be disproportionately impacted depending on their location.

Figure 3 presents the average climate index rating of Māori freehold land in each rohe across Aotearoa New Zealand, with a rating closer to one indicating a higher level of risk. The upper North Island is most at risk, namely in Te Tai Tokerau, Tāmaki Makaurau, Tairāwhiti, and Tākitimu, where upwards of 69 percent of Māori freehold land holds a climate index rating of above 0.7.

This indicates that whenua Māori in these rohe is highly exposed to a number of climate risks, such as flooding, extreme rainfall, sea level risk, and heatwaves. The severity of these impacts will vary and be irregular but could result in damage to the land, reduction in yields, and possibly land loss. Māori landowners, and policymakers, must consider the implications of climate risk in land development and management.

Figure 3 Average climate index of Māori freehold land by rohe in Aotearoa New Zealand, 2023



Source: Te Puni Kōkiri, BERL analysis

The vulnerability of Māori freehold land to climate change will act as a compounding factor over the already existing and common land limitation – erosion. Erosion is the most common risk faced by primary Māori freehold land, and increased rainfall and other changes in weather patterns will further compound this risk.

2.3 Landlocked land impedes more effective use of whenua Māori

Landlocked land refers to parcels of land without direct access to public roads. They are often surrounded by other blocks of land. Without direct access to these parcels of land, the ability to utilise the land for any purpose, economic or cultural, is limited.

From an economic perspective, if certain parcels of land have a productive capacity (e.g., a favourable LUC classification) but are without direct road access, the ability to unlock their productive potential is limited. This is a barrier to landowners realising the full economic potential of their land. Landlocked land in areas where primary production is prevalent is often leased to neighbouring parcels of land that do have road access. But this is not without its complications involving legal negotiations and an administrative burden. In some cases, landlocked land is not utilised as a result of these challenges.

For Māori, landlocked land has been a long-standing issue. It dates back to early confiscations and acquisitions of Māori land from the Crown. Most landlocked land is surrounded in part or in whole by Crown land (Herenga ā Nuku, 2023). While Te Ture Whenua Māori Act 1993 is the legislation that deals with granting Māori reasonable access to landlocked land, the MLC notes that “this is a long process, and you may be required to pay compensation for access across private land”. Attempts to remedy the issue have also fallen short, such as the case in Taihape, where the Waitangi Tribunal released findings revealing the Crown allowed land to become landlocked and failed to remedy the problem (Waitangi Tribunal, 2024).

Estimating landlocked whenua Māori in Aotearoa New Zealand

In order to estimate the amount of landlocked whenua Māori in Aotearoa New Zealand, whenua Māori was determined to be landlocked if there was no direct access to a road or track within 100 metres of the land block’s boundary.²² An estimated 21 percent of primary Māori freehold land is landlocked with no direct road access within 100 metres – which equates to 196,891 hectares across Aotearoa New Zealand. The extent to which land is landlocked varies by land use.

Given the typical landscape and location of forestry land blocks, it is not surprising to see that 39 percent of Māori freehold land in forestry (131,580 hectares) is landlocked. Forestry land blocks are typically located in mountainous, steep areas and surrounded by other large land blocks. Furthermore, for forestry land with an LUC class of eight, around 83 percent (or 38,749 hectares) is landlocked. These forestry land blocks could be leased out to adjacent land block owners who do have access to their land. At the same time, an agreement could be in place to allow landowners access to landlocked land, or the adjacent blocks could be owned by the same entity.

A substantial portion of Māori freehold land in market gardens and orchards is likely faced with a similar scenario, where a number of land blocks are leased out to neighbouring landowners. An estimated 14 percent (643 hectares) of Māori freehold land in market gardens and orchards is landlocked.

21 We are not able to determine whether land blocks are leased out or not, or if there is an agreement between landowners for access to landlocked land.

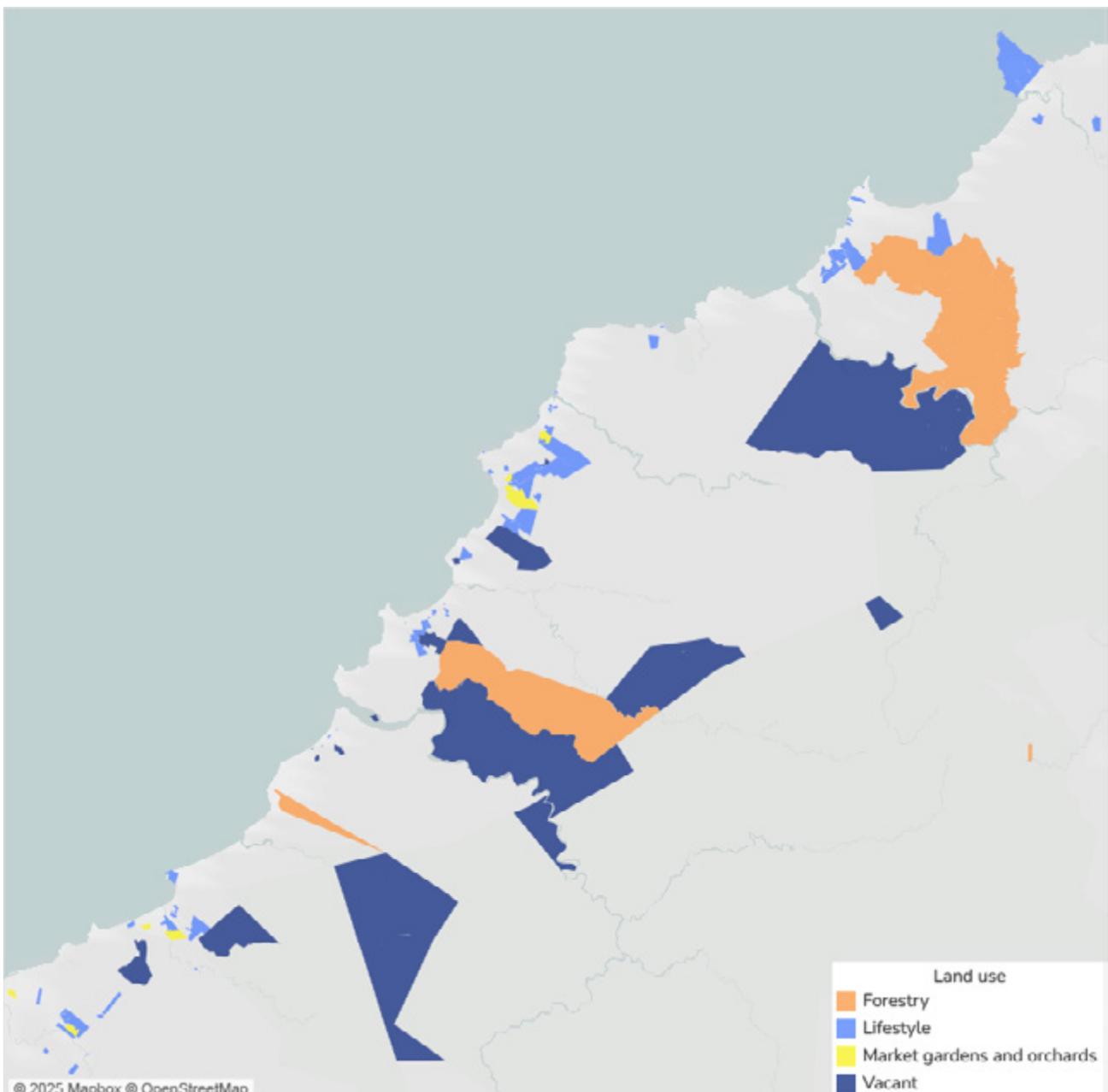
Without direct access to land, the ability to use whenua Māori is limited

Another outcome is that the land remains unused, or vacant. It also means that it is inaccessible to the landowners, and they can neither maintain nor legally enjoy their whenua. Nearly half of all vacant Māori freehold land (47 percent) is landlocked – the equivalent of 84,581 hectares – which is greater than the total amount of freehold land used for dairy.

Figure 4 provides an example of how land that is landlocked can often be left unused, even with primary activities occurring in neighbouring blocks.

A number of large landlocked Māori freehold blocks are vacant (navy) and adjacent to large commercial forestry blocks (orange) that are also landlocked. We are not able to infer what is contributing to one block of land being in productive use while the other block is not, despite them both being landlocked. It is, however, necessary to understand the implications of landlocked land and how this can be presented in land analysis. It is possible that much of this land is leased out to neighbouring blocks that may or may not be in Māori ownership.

Figure 4 Landlocked Māori freehold land by land use in Te Moana a Toi-Waiariki, 2023



Source: BERL analysis

There is also evidence of landlocked land at a much smaller scale in Figure 4. Specifically, we can see smaller market gardens and orchards (yellow) and lifestyle (blue) blocks adjacent to each other, while also being landlocked. While lifestyle land is not necessarily serving a direct commercial purpose, it often has commercial potential. The inability to access the blocks of lifestyle Māori freehold land pictured could be the reason why it is not directly within primary production.

2.4 Ownership structures are key to unlocking whenua Māori

Traditionally, Māori did not “own” the land; rather, the different resources generated from the land were “owned” by Māori, whānau, and hapū based upon rights dependent on genealogical linkages, status, and occupation (Reid, 2011). Legal “ownership” of the land was introduced by European settlers. In modern times, Māori ownership of land, namely Māori freehold land, maintains its ownership through ancestral connections and a customary regime. This can result in a complex, long line of owners and interests at hand, which can make decisions on land use challenging.²²

Governance is required to make legal, formal and or mandated decisions. A governance structure can be established under Te Ture Whenua Māori Act as either trusts, Māori incorporation, or Māori reservations. Ahu whenua trusts are most commonly established to administer over commercial land, while Māori reservations are common structures for land held for cultural purposes. Governance structures are ultimately designed to get the best use out of the land in accordance with the interests of all beneficiaries. This can result in commercial or cultural uses of the whenua, with research identifying that they improve decision-making across cultural, social, and economic objectives, all while balancing environmental outcomes (Cortes-Acosta, 2020).

A governance structure makes it easier to access finance for whenua development. This is, in part, because a governance structure provides a more efficient decision-making body in comparison to seeking approval from each individual landowner. When ownership covers multiple close and neighbouring parcels with overlapping interests, a governance structure also provides a structured approach to allow for parcels to be grouped together, and benefit from economies of scale.

Governance and lifestyle blocks

We found that governance structures influence lifestyle parcels, which are typically small blocks of land located near each other or adjacent to farmland.

Larger lifestyle blocks are more likely to have a governance structure; meanwhile, smaller lifestyle blocks (e.g., between three to ten hectares) are less likely to have governance in place. Around 76 percent of Māori freehold lifestyle blocks between 100 and 200 hectares had a governance structure, while only 39 percent of blocks between three to ten hectares did.

As of June 2024, Māori land blocks (freehold and customary) with a management structure had an average size of 113 hectares and an average of 207 beneficiary owners; while blocks without a management structure had an average size of 15 hectares and 45 beneficiary owners (MLC, 2024).

This could indicate that established management structures have been able to group together a number of small lifestyle parcels into much bigger blocks, examples of this can be found in Opotiki, and Gisborne Districts. However, currently these bigger blocks are still not serving a direct commercial purpose.

22 The MLC holds an office record of which whānau members have interests in blocks of Māori land (Tupu.nz, 2025)

2.5 The land and capital value of whenua Māori

The following subsection provides a broad overview of the land and capital value of Māori freehold land and land held by PSGEs.

- Land value (LV) is an estimation of the price that would be paid for the bare land at its valuation date.
- Capital value (CV) provides insight into the current valuation of land (including improvements such as buildings, fences, etc.) and can be used as an estimate of the potential selling price at the time the valuation was conducted.²³

CV is determined by the land value plus the value of any improvements to the land. The analysis and modelling adopted in this report relies on the CV of land blocks for determining productivity. In our modelling, we assume that property valuers have complete information, and that the CV represents an accurate and true reflection of the unique characteristics of each individual land block, including its location, market factors, etc.²⁴

For example, the *Australia and New Zealand Valuation and Property Standards – Guidance Paper (ANZVGP) 109 – Market Value of Rural and Agribusiness Properties* guidance paper (2022) notes that valuers should consider a wide range of factors when determining value, including highest and best use, current use, land tenure, Te Tiriti o Waitangi implications, planning constraints, climate, soils, topography, water resources, improvements, past carrying capacity or production history, trading performance, and relevant sales evidence.

2.5.1 The land and capital value of Māori freehold land

In 2023, the total CV of Māori freehold land was \$19.8 billion, with \$15 billion of this situated in the value of the land itself (i.e., LV). Partly as a result of considerable increases in the LV of Māori freehold land between 2013 and 2023 (up 109 percent), the total CV increased notably from \$10 billion in 2013.

Table 9 presents both the LV and CV of Māori freehold land by different land uses, indicating the degree to which the capital value of the land is determined by the land itself, or by improvements.

Table 9 Land and capital value of Māori freehold land, 2023

Māori freehold land Land use	2023	
	LV (\$m)	CV (\$m)
Arable farming	49	53
Dairying	1,442	1,692
Forestry	580	622
Market gardens and orchards	369	688
Rural industry	10	12
Specialist livestock	3	3
Stock finishing	2,215	2,462
Store livestock	1,932	2,151
Multi use within rural industry	884	1,119
Primary land	7,484	8,802
Non-farming land	6,635	9,972
Total²⁵	15,038	19,837

23 In some cases, up-to-date valuations for the 2023 year were not available, so the latest available valuation is adopted as the 2023 CV.

24 More information about our methodology and assumptions is provided in Appendix A.

25 Total CV also includes the estimated CV for a portion of remaining vacant and unknown land.

The value of primary land is strongly attributed to the value of the land itself

Primary Māori freehold land had a total CV of \$8.8 billion in 2023, with this largely determined by the value of the land (LV accounted for 85 percent of the CV). This is a strong feature of primary land where characteristics such as location, soil, and slope are the main determinants of its value. This contrasts with non-primary land, such as industrial blocks, where infrastructure (i.e., improvements) drives the land's value – only 67 percent of the CV of non-farming land was attributed to the LV.

Or more broadly, in largely land-based uses where the land itself generates the output or service (e.g., forests, dairy farms), the effects of improvements are relatively less impactful compared to uses where output or services are generated from the infrastructure and buildings (e.g., power stations).

Given that primary land is strongly driven by the value of the land alone, this also means that inflation plays a key role in any increased land value. It is worth noting, however, that improvements in some primary land uses, specifically market gardens and orchards, can play a larger role. In 2023, only 54 percent of the CV of Māori freehold land in market gardens and orchards was attributed to the land alone, with the remaining accounted for by improvements.

Interestingly, out of all broad land uses (primary and non-primary), the CV of market gardens and orchards increased at the fastest rate, up 274 percent between 2013 and 2023, reaching \$688 million in 2023. This suggests Māori landowners of market gardens and orchards are finding ways to generate real value from improving their land. This could be through investment in technology or infrastructure. We have also seen an increase in the share of Māori freehold land used for market gardens and orchards, with an additional 1,486 hectares in 2023 compared to 2013.

Forestry land is almost exclusively determined by the value of the land

In 2023, the approximately 387,200 hectares of Māori freehold land in forestry had a CV of \$622 million, with 93 percent of this value in the land alone.

It is important to note that the CV of forestry land would likely take into account whether the forestry land was participating in the ETS, as this is included in any estimate of the market value of the property. (LINZ, 2011) On this basis, given that large portions of Māori forestry are ineligible for the ETS, this would potentially skew any CV downwards. While we cannot determine to what extent this impacts the CV, it is necessary to acknowledge, particularly in regard to the total CV of forestry land held by PSGEs.

The land and capital value of land held by PSGEs

In 2023, the total CV of the 829,000 hectares of land held by PSGEs was \$11.3 billion, with \$8.2 billion (or 72 percent) of this value in the land alone. The biggest contributor to the overall CV of land held by PSGEs is residential land at \$2.9 billion, which increased significantly between 2013 and 2023 (up 255 percent). In terms of primary land held by PSGEs, the total CV equalled \$1.2 billion in 2023, with 89 percent of this value in the land alone. Forestry, as the main land use in this dataset, was the lead contributor with a CV of \$625 million.

2.6 Whenua Māori is at the core of Te Ōhanga Māori

This section presents the current estimated economic contribution of existing primary whenua Māori in Aotearoa New Zealand.

Our approach

Our estimate of the current (and potential) economic contribution of primary whenua Māori is pinned to the CV of each individual land parcel.²⁶ The basis for this approach is that the CV provides an accurate and true reflection of each parcel's individual characteristics, factoring in variables such as land capability, location, and access.²⁷ A limitation is that most Māori freehold land has never been sold so the CVs have never been tested by the market.

We present this as an annual contribution (for the 2023 year) in terms of output, gross domestic product (GDP), and employment (as measured by full-time equivalents (FTEs)).

Primary Māori freehold land is a particularly valuable contributor

In 2023, the approximately one million hectares of primary Māori freehold land was estimated to produce \$10.6 billion in output and \$4.7 billion in GDP from the employment of 30,800 FTEs. Dairying, stock finishing, and store livestock were the three largest contributors (Table 10).

Table 10 Economic contribution of primary Māori freehold land, 2023

Land use	Hectares	Total output (\$m)	Direct GDP (\$m)	Direct employment (FTEs)
Arable farming	1,411	60	26	166
Dairying	59,775	2,832	1,429	7,166
Forestry	387,176	737	232	708
Market gardens and orchards	4,749	489	211	3,144
Rural industry	1,048	13	6	37
Specialist livestock	160	2	1	11
Stock finishing	192,870	2,802	1,204	7,766
Store livestock	333,765	2,448	1,052	6,786
Multi use within rural industry	84,409	1,190	507	5,025
Total	1,065,364	10,574	4,667	30,809

Source: BERL analysis

26 Further detail of our approach and methodology is provided in Appendix A.

27 The underlying assumption is that each property valuation was completed with full knowledge of each individual block.

Dairy was a valuable contributor for primary Māori freehold land, generating \$1.4 billion in GDP from 59,775 hectares – the fifth largest primary land use. By contrast, Māori freehold land used for forestry produced \$232 million in GDP from 387,176 hectares – the largest primary land use.²⁸

The difference between absolute land use and land productivity of dairy and forestry land can be explained by a number of potential reasons. For starters, dairy (and even more so with other uses like arable or market gardens) makes more intensive use of available land, while forestry typically covers large areas. In addition, dairy often involves more value-add processes that boost its economic contribution. In forestry, the primary driver of output is the harvesting of trees without much value-add and, importantly, occurs over long periods of tree growth where only low employment is needed. A notable difference in the annualised economic contribution presented in Table 10 is that forestry returns accrue over a long horizon, rather than providing annual returns like most other primary industry land uses.

Arable farming and market gardens and orchards also make more intensive use of available land and to a further extent than dairy land as well. Both these land uses account for only a relatively small share of total Māori free land in primary use, yet they are particularly valuable contributors economically, especially with the amount of employment created. They are notably labour intensive, requiring high amounts of employment during pruning and picking periods. Horticultural land, which includes both arable and market gardens and orchards, is a growing force in the Māori primary sector with a steady trend of more land committed to such uses (BERL, 2025). The appetite for converting land to these uses is evident.

There is a notable difference in the relative output per hectare between store livestock and stock finishing, whereby stock finishing is able to generate much higher returns with considerably less land. This can be explained by typical stock finishing farms on average having a much higher stocking ratio.

28 This does not include an estimate of annual returns from any form of participation in the ETS.

Primary land held by PSGEs, particularly forestry land, also supports economic growth in Te Ōhanga Māori

In 2023, primary land held by PSGEs was estimated to produce \$1.5 billion in output and \$607 million in GDP, directly supporting 2,910 FTEs (Table 11).

As the predominant primary land use in this dataset, forestry generated the highest total output (\$741 million) out of all primary land held by PSGEs. Yet given normal forestry returns are not on an annual basis, coupled with the relatively lower value-add aspects of forestry, dairy land generates the same level of GDP as forestry with significantly less land.

Table 11 Economic contribution of primary land held by PSGEs, 2023

Land use	Hectares	Total output (\$m)	Direct GDP (\$m)	Direct employment (FTEs)
Arable farming				
Dairying	9,543	461	233	1,167
Forestry	323,292	741	233	712
Market gardens and orchards	2,476	16	7	106
Rural industry	2	1	0.3	2
Specialist livestock	27	1	0.3	5
Stock finishing	4,581	89	38	246
Store livestock	21,377	184	79	510
Multi use within rural industry	2,175	39	16	163
Total	363,473	1,532	607	2,910

Source: BERL analysis



3 Potential for improved utilisation of whenua Māori

The following section presents our analysis for determining the potential economic contribution that could be achieved from whenua Māori. Our model proposes two hypothetical scenarios to present the potential economic opportunities available for whenua Māori:

- ① Potential for optimising current primary production on whenua Māori
- ② Potential for introducing new primary production on whenua Māori not currently in primary production.

The results of our modelling are presented separately but can be read side by side – they are not mutually exclusive. While we present the potential economic contribution as annualised returns (opportunities), we recognise that such contribution cannot be created immediately and will require significant capital investment and development. The results presented show the ultimate opportunity – a potential end goal.

Achieving this goal will require widespread coordination and action. There are multiple levers and policy settings available that could be used to achieve such a goal and alleviate or remove underlying barriers and challenges.

①

3.1 Potential for optimising current primary production on whenua Māori

This is how we measured potential for optimising current primary production on whenua Māori:

1. **Measure the performance of primary whenua Māori in comparison to the regional benchmark**, using the CV of primary whenua Māori to determine the effective utilisation per land use in relation to the regional CV benchmark.
2. **Identify underperforming primary whenua Māori** per land use relative to the regional CV benchmark. Underperforming land is defined as land with a CV below 90 percent of the regional CV benchmark.
3. **Model the potential economic opportunity from lifting underperforming primary whenua Māori** up to 90 percent of the regional CV benchmark. Primary whenua Māori above this threshold stays as is.

Our approach does not propose or model how a lift in productivity could be achieved.

The first step in our model was to determine the effective utilisation of primary whenua Māori in comparison to the regional benchmark. This allowed us to gauge whether primary whenua Māori is being utilised effectively or has the potential for greater utilisation. This involved comparing the per hectare CV of each individual land parcel against the regional per hectare CV for each land use (i.e., the regional benchmark).

We then allocated primary whenua Māori into four different groups outlined in Table 12.

Table 12 Categorisation of underutilised whenua Māori

Category	Description	Variance from benchmark
Severely underutilised	Land in this group has a CV per hectare that is below the regional benchmark by at least 50 percent	<50%
Underutilised	Land in this group holds a CV per hectare that is between 50 and 90 percent below the regional benchmark	≥50% and <90%
Utilised	Land in this group holds a CV per hectare that falls within 90 percent to 115 percent of the regional benchmark	≥90% and ≤115%
Well utilised	Land in this group holds a CV per hectare that exceeds the regional benchmark by greater than 115 percent	>115%

Source: BERL

Around 43 percent of primary Māori freehold land was utilised at a level above the regional benchmark

In 2023, approximately 462,000 hectares of primary Māori freehold land performed at a level either equal to or greater than the regional benchmark and is categorised as either utilised or well utilised in Table 13. We consider this land to be highly productive, largely exceeding the average output set by the same land use and block size in the region. This represents around 43 percent of primary Māori freehold land – a slight increase from 41 percent in 2013.

In particular, around 25 percent (265,400 hectares) of primary Māori freehold land was categorised as well utilised, with a strong number of hectares in store livestock and forestry.

The quality of the land plays a part in the utilisation of the land, with at least two-thirds of primary land on LUC one to three being either utilised or well-utilised, compared to around 40 percent for land on LUC four to eight.

Table 13 Utilisation of primary Māori freehold land, 2023

Land use (Hectares)	Severely underutilised	Underutilised	Utilised	Well utilised
Arable farming	555	99	391	366
Dairying	11,545	23,186	10,595	14,449
Forestry	138,494	109,727	62,473	76,482
Market gardens and orchards	1,703	1,160	503	1,383
Rural industry	124	21	856	47
Specialist livestock	1	56	82	22
Stock finishing	41,204	64,029	32,597	55,041
Store livestock	77,040	112,154	53,930	90,642
Multi use within rural industry	10,387	12,109	34,925	26,987
Total	281,052	322,541	196,352	265,419

Source: BERL analysis

More than half of primary Māori freehold land was underperforming relative to regional benchmarks

We categorised whenua Māori that is either severely underutilised or underutilised as underperforming land.²⁹

In 2023, approximately 57 percent of primary Māori freehold land was categorised as either severely underutilised or underutilised, the equivalent of 603,593 hectares (Table 13). This was a slight improvement from 59 percent in 2013.

Forestry, dairy, market gardens and orchards, store livestock, and stock finishing had relatively higher shares of severely underutilised or underutilised land. As noted in the previous sections, the reasons for this include, for example, the actual quality of the land and its ability to sustain production, whether a governance structure is in place to focus on or drive land development, or if owners have direct access to their land to utilise it.

The quality of land is a key factor in its ability for more effective utilisation

Land that is categorised as either severely underutilised or underutilised is mostly represented in LUC classes six to eight (more than 80 percent). However, because of the large representation of Māori freehold land overall in higher LUC classes, even well utilised primary Māori freehold land has a majority share (61 percent) in LUC classes six to eight.

Primary land held by PSGEs also has more efficient utilisation potential

In 2023, an estimated 63 percent of land held by PSGEs was either severely underutilised or underutilised, representing 229,480 hectares. This land is categorised as underperforming in our analysis.

In terms of forestry land held by PSGEs, an estimated 66 percent is categorised as either severely underutilised or underutilised, or otherwise underperforming compared to the regional benchmark.

29 Please see Table 20 for an explanation on how we have categorised underperforming land in comparison to previous research completed.

Table 14 Utilisation of primary land held by PSGEs, 2023

Land use (Hectares)	Severely underutilised	Underutilised	Utilised	Well utilised
Arable farming	0	0	0	0
Dairying	79	1,092	5,327	3,045
Forestry	144,917	69,194	44,746	64,435
Market gardens and orchards	2,385	0	0	91
Rural industry	0	0	0	2
Specialist livestock	0	0	27	0
Stock finishing	339	1,599	637	2,007
Store livestock	1,095	8,781	2,743	8,759
Multi use within rural industry	0	0	0	2,175
Total	148,815	80,665	53,480	80,514

Source: BERL analysis

The LUC of primary land held by PSGEs again strongly correlates with its effective utilisation. Of the 229,480 hectares of primary land held by PSGEs that is underperforming, 73 percent of it has an LUC class between six and eight.

3.1.2 Potential increased economic contribution from improving underperforming land

Lifting the productivity of existing underperforming primary Māori freehold land presents a significant economic opportunity

After assessing the effective utilisation of primary whenua Māori, and identifying land that is currently underperforming against the regional benchmark, we modelled the potential economic output that would be created from lifting the identified land up to 90 percent of the regional benchmark.³⁰

This involved raising the CV of each underperforming land block to 90 percent of the regional benchmark for the same land use and multiplying it by a gross output to capital ratio. This provides us with annualised gross output estimate for the 2023 year. This modelling showcases the potential economic opportunity that could be achieved by further investing in and supporting Māori landowners to improve their land's productivity up to or close to regional standards.

In 2023, there were around 603,600 hectares of primary Māori freehold land that were underperforming relative to the regional benchmark. If this land was lifted to 90 percent of the regional benchmark, at an overall level the output created from primary Māori freehold land would increase annually by \$2.3 billion, while direct GDP generated would increase by \$1 billion, and a further 6,747 FTEs would be supported. This would bring the annual output of existing primary Māori freehold land up to \$12.9 billion and direct GDP generated up to \$5.7 billion (Table 15).

30 Land that is performing well (i.e., utilised and well utilised land) in comparison to the regional benchmark stayed as is.

Table 15 Potential economic contribution of primary Māori freehold land

Land use	Total output (\$m)	Direct GDP (\$m)	Direct employment (FTEs)
Arable farming	72	31	198
Dairying	3,360	1,695	8,501
Forestry	956	301	918
Market gardens and orchards	671	290	4,310
Rural industry	37	16	104
Specialist livestock	2	1	11
Stock finishing	3,471	1,492	9,622
Store livestock	2,982	1,281	8,265
Multi use within rural industry	1,332	568	5,626
Total	12,883	5,674	37,557

Source: BERL analysis

The largest gains would be made in dairy and both stock finishing and store livestock – the second and third largest land uses by total underutilised Māori freehold land. This could be achieved by supporting the establishment of governance structures over currently underutilised Māori freehold land in stock finishing and store livestock. More than 59,500 hectares of stock finishing and store livestock Māori freehold land that are underperforming have no governance structure. Establishing management structures creates avenues to delivering better economic, as well as cultural, benefits (Harmsworth, 2017).

Our analysis identified 2,863 hectares of Māori freehold land in market gardens and orchards that are underperforming relative to the regional benchmark. When this portion of land is lifted into a more productive capacity, given its labour-intensive nature, an additional 1,167 FTEs are created, as well as \$78 million in direct GDP. This could be achieved by supporting improved water supply and management, adoption of innovative technology, and/or refined harvesting techniques.

Underperforming primary land held by PSGEs has the potential to deliver greater economic contribution

In 2023, there were 229,480 hectares of primary land held by PSGEs that were categorised as either severely underutilised or underutilised, or otherwise deemed as underperforming land.

If this land was lifted to 90 percent of the benchmark and classified as utilised land, the output from land held by PSGEs would increase by \$614 million, reaching \$2.1 billion (Table 16). This would also result in an additional \$200 million in GDP generated from primary land held by PSGEs, bringing the total up to \$807 million.

Table 16 Potential economic contribution of primary land held by PSGEs

Land use	Total output (\$m)	Direct GDP (\$m)	Direct employment (FTEs)
Arable farming	0	0	0
Dairying	472	238	1,195
Forestry	1,308	411	1,256
Market gardens and orchards	24	10	154
Rural industry	1	0	2
Specialist livestock	1	0	5
Stock finishing	97	42	269
Store livestock	205	88	568
Multi use within rural industry	39	16	163
Total	2,146	807	3,611

Source: BERL analysis

2.

3.2 Potential for introducing new primary production on whenua Māori not currently in primary production

This is how we measured potential for introducing new primary production on whenua Māori:

1. Identify suitable whenua Māori, currently not used for primary purposes, that could be shifted to a productive primary land use.
2. Determine the appropriate change in land use by assessing each land block against land characteristics, including capability (i.e., LUC class), location, and size.
3. Model the potential economic opportunity from changing identified whenua Māori to a more productive primary land use.

The objective of this scenario is to understand the economic opportunities available by enabling more productive uses of existing whenua Māori. This means identifying opportunities that, with the right support, investment, management, and planning, could make the land more productive. We do not model the expected investment and capital costs, timeline for development, or labour requirements. However, we recognise that such substantial land use change would require significant and coordinated investment. The economic contributions are intended to represent the ultimate end goal – the overall opportunity.

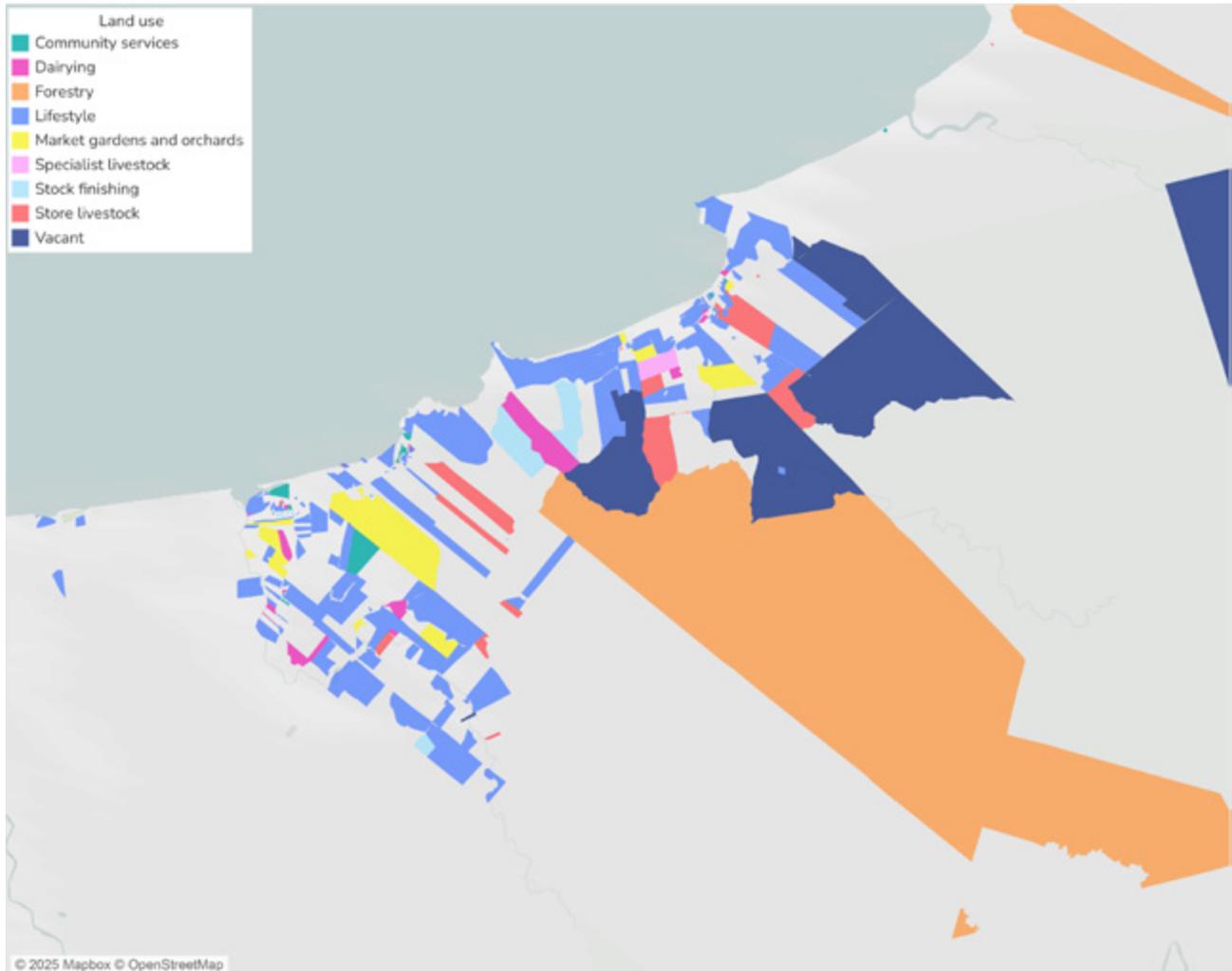
3.2.1 Identifying suitable whenua Māori

While the previous scenario modelled lifting existing primary whenua Māori to a more productive capacity, this scenario seeks to unlock a more productive use out of existing whenua Māori more broadly, not just primary land. Specifically, we were tasked with assessing the economic opportunity of whenua Māori categorised as lifestyle or vacant land.

- **Lifestyle** land generally encompasses small land parcels located near or adjacent to other primary land uses. There is scope to improve the utilisation of lifestyle land parcels by grouping their production with adjacent land parcels, facilitating a higher use of the land, or by allowing governance to pursue a suitable and more optimal land use.
- **Vacant** land could be unused for any number of reasons, whether it is landlocked, leased to adjacent blocks, or has no governance structure to manage its use. There is an inherent opportunity to unlock suitable vacant whenua Māori.

Figure 5 provides evidence for how lifestyle (blue) and vacant land (navy) is often categorised and pictured within different rohe. There is primary production potential in the area but, as pictured, a number of lifestyle and vacant blocks are currently not in direct primary production. Multiple small and large lifestyle (blue) blocks of Māori freehold land are scattered throughout the area, many of which are adjacent to different primary land uses. At the same time, multiple large vacant blocks (navy) of Māori freehold land are positioned predominantly next to large commercial forests.

Figure 5 Māori freehold land use in Te Moana a Toi-Waiariki, 2023



Source: Insights derived by BERL based on CoreLogic Data

Improving the utilisation of this land, for example through a collective management structure, could unlock its potential and deliver economic benefits (Harmsworth, 2017). After confirming the suitability of lifestyle and vacant whenua Māori, we set two parameters for our analysis:

- Identify small (between three to ten hectares), high-quality (LUC class of one or two) lifestyle or vacant whenua Māori blocks in regions (Tairāwhiti, Tākitimu, Te Moana a Toi-Waiariki, Te Tai Tokerau, and Te Tau Ihu) with a propensity for market garden and orchard production
- Identify large (over ten hectares) lifestyle or vacant whenua Māori blocks with suitability for introduction into farm or forestry land.

3.2.2 Identifying the suitable primary land use

Having identified the area of suitable lifestyle and vacant land, we need to assess each land parcel against its land characteristics to assign it to an appropriate and optimal land use. This involved understanding each land block's LUC class to determine potential suitable uses, location to determine the region's propensity for certain types of primary production, and total size (hectares). Assessing these three factors enables us to assign otherwise non-primary land (i.e., land not in primary production) into a commercially productive land use that is viable and feasible.

Table 17 presents the number of hectares of lifestyle and vacant whenua Māori that was identified as suitable for being introduced into farm or forestry land and specifies the land use we model the change to.

Table 17 Modelled land use change in lifestyle and vacant whenua Māori

New land use	Existing land use (Hectares)			
	Māori freehold		Land held by PSGEs	
	Vacant	Lifestyle	Vacant	Lifestyle
Dairying	379	111	140	0
Forestry	112,610	8,852	56,509	20
Market Gardens and orchards	179	4,800	0	42
Stock finishing	19,086	8,262	88	29
Store livestock	44,874	17,835	1,945	45
Total change	177,128	39,860	58,682	136

Source: Insights derived by BERL based on CoreLogic Data

At an overall level, a substantial portion of lifestyle land was identified as being suitable for forestry production (combined 177,991 hectares).³¹ This is largely a product of the high LUC class of such land, whereby other uses, such as farming, are not suitable. This is also the case for the notable amount of both lifestyle and vacant Māori freehold land suitable for pastoral uses (stock finishing and store livestock).

Included in Table 17 are the identified small, high-quality land blocks that have the potential for production in market gardens and orchards. To draw this out specifically, there were approximately 2,194 hectares worth of three-to-ten-hectare blocks in market garden and orchard-producing regions that held an LUC class of one or two. This land is currently in lifestyle or vacant use, yet it has a high level of suitability for improved utilisation.

31 Our analysis does not model the suitability of this land for forestry harvesting or permanent afforestation. The complexities and variabilities associated with this were beyond the scope of our set analysis.

3.2.3 Potential economic contribution from suitable whenua Māori

How we estimate potential output

Our modelling for estimating the potential economic contribution of new primary land again leveraged the CV of land parcels. In introducing lifestyle and vacant land into a suitable primary productive use, we assumed that this land is introduced with an economic output equal to 90 percent of the regional benchmark. We then apply a per hectare CV to each individual block equivalent to this level, while accounting for the LUC class, location, and land use. The applied CV is then multiplied by a gross output to capital ratio for each land use, allowing us to estimate the annualised gross output.

Achieving such significant land use change would only be possible over a long period of time with significant investment and management. The estimates we present are an annualised opportunity, reflecting the end goal.

There is an economic opportunity inherent in converting suitable whenua Māori, specifically vacant and lifestyle Māori freehold land, into primary land uses. Our model identifies around 177,000 hectares of vacant and 40,000 hectares of lifestyle Māori freehold land that have the potential to be introduced into primary production.

Introducing this land into suitable primary production has the potential to create additional direct GDP of \$691 million and directly support 6,254 FTEs within Aotearoa New Zealand.

Table 18 Potential economic contribution from changing Māori freehold land into primary production

Māori freehold land	Total output (\$m)	Direct GDP (\$m)	Direct employment (FTEs)
Dairying	22	11	55
Forestry	268	84	258
Market gardens and orchards	577	250	3,710
Stock finishing	347	149	961
Store livestock	458	197	1,270
Unlocked opportunity	1,672	691	6,254

Source: BERL analysis

Similarly, but to a lesser extent, there is an economic opportunity for vacant and lifestyle land held by PSGEs to move into a productive primary use. We estimate this opportunity to equal \$186 million in output, direct GDP of \$62 million, and 240 FTEs.



4 Creating a better understanding of whenua Māori

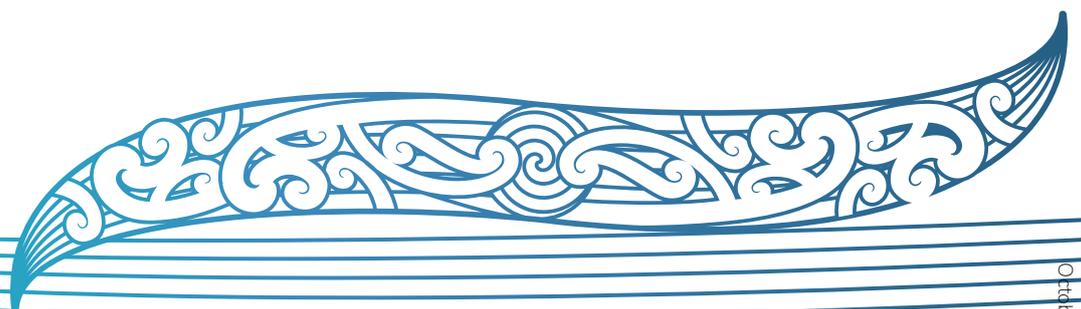
This report and the analysis included aims to expand the current understanding of whenua Māori in Aotearoa New Zealand. We have broadened the traditional picture of whenua Māori as outlined by the MLC to include a subset of commercial land held by PSGEs, most notably forestry land. Across the range of factors considered in this analysis, it is evident that the development and potential of whenua Māori is constrained by multiple factors. Most significantly, historical land loss for Māori, and the consequent retention of mostly poor-quality (i.e., high LUC classes) land, severely limits the versatility of existing whenua Māori. This is further compounded by the following factors:

- A significant proportion (21 percent) of primary whenua Māori is landlocked with no direct access
- Many small whenua Māori land blocks do not have a governance structure in place to improve or change their existing land use
- Whenua Māori is highly exposed to a range of climate risks that require careful consideration for any land development planning.

Despite these factors, whenua Māori delivers significant economic benefit and supports the livelihoods of many rohe. Specifically, around a quarter of primary Māori freehold land performs at a level that significantly exceed the regional benchmark. There is, however, an opportunity to realise more productive use of existing land.

While this report builds on and updates the evidence base of whenua Māori, there is scope and potential for further research to continue to improve the current understanding. This includes:

- Improving and expanding the current understanding of land owned and purchased by PSGEs and other iwi commercial entities, including their subsidiaries
- Establishing an understanding of the interaction between forestry ownership, leasing rights, and cutting rights for Māori landowners
- Establishing an understanding of the amount of whenua Māori land that is leased, and the barriers to owners undertaking commercial activities themselves
- Further, while our analysis identifies the risk posed by climate change as well as physical limitations, we have not accounted for this in our modelling.



Appendix A

Methodology

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Understanding methodological differences

The following section provides details of the methodological approach used for this research. This research expands and updates previously completed analyses of whenua Māori in Aotearoa New Zealand. However, the methodology adopted in this report differs slightly from that completed by PwC (2014) – where this current report traces its origins.

The main distinction between the methodologies followed by PwC (2013 & 2014) and in this report relates to the different approach applied to measuring the productivity of the land, as well as the inclusion of a new dataset on PSGE-specific land. There are also subtle differences in both the categorisation and measurement of underutilised Māori land, along with the assumptions applied.

The methodologies at a glance are presented in Table 19 and a side-by-side comparison of key differences is presented in Table 20. Any comparison between the results of both reports must consider these differences.

Table 19 Methodological differences at a glance

	BERL (2025)	PwC (2014)
At a glance	<p>Our approach estimates the productivity of Māori land by using the capital valuation (CV) of each individual land block. We conduct our analysis using an up-to-date and granular dataset of the existing Māori land base.</p> <p>The methodology followed considers productivity from the resource economics relationship between a land block’s CV and its improvements, and the value of production. The core assumption for this methodology is that a property valuer knows the annual value of production from a block of land and uses this information to determine the net present value (NPV) of that block of land. This can be referred to as its productive value.</p> <p>The theory behind this methodology is that estimating the productivity of land using its CV more accurately reflects the unique characteristics of each individual land parcel (e.g., its geographical location, land quality, and size). This approach also provides a consistent baseline for comparison across different land uses and offers a more stable and predictable benchmark over time</p>	<p>PwC estimated the productivity of Māori land by using output at the farmgate level. The scope of land modelled was derived from MAF (2011) which categorised Māori freehold land into three tiers: productive land (20 percent), under-performing land (40 percent), and underutilised land (40 percent). These tiers were agreed through consensus following a literature review and expert interviews, not from a quantitative assessment of land data. Land was then split into an industry category: dairy, sheep and beef, forestry, and horticulture.</p> <p>Further, this methodology considered national farmgate outputs and proportionately presented regional outputs. National farmgate outputs were derived from a number of credible and robust industry specific sources, providing relevant information such as stocking rates and per hectare expenses. Additionally, PwC utilised modelling and data provided by MPI through their Situation and Outlook for Primary Industries (SOPI) releases.</p>

Table 20 Key methodological differences

	BERL (2025)	PwC (2014)
Base data	<ol style="list-style-type: none"> Granular dataset of the existing Māori freehold land base (MLC + LINZ). Specialised and incomplete subset of data on land held by PSGEs. <p>Engaged CoreLogic to assign LV and CV to property records.</p>	<ol style="list-style-type: none"> Māori freehold land <p>Proportionately assigns headline hectares of Māori freehold land (MFL) using MAF (2011) tiers and top-level LUC split from MPI.</p>
Land use	Presents actual and all land use in line with LINZ reporting.	Assigns Māori freehold land into dairy, sheep and beef, forestry, and horticulture (matching industry reporting).
Core methodology premise	Considers productivity from the resource economics relationship between land CV and its improvements, and the value of production. Founded on the CV accounting for the land's productive value.	Considers productivity at the national farmgate level for each of the selected industries.
Categorisation of land	<p>Calculates the relative performance of an individual land block by comparing its calculated CV per hectare to the regional CV per hectare, which accounts for land use and location. Land is categorised as either:</p> <ul style="list-style-type: none"> Well utilised Utilised Underutilised Severely underutilised. 	<p>Applies a three-tier stratification of land derived from consensus discussions with MAF (2011). That is:</p> <ul style="list-style-type: none"> Tier 1 – Well-developed businesses (equal to 20 percent of MFL) Tier 2 – Under-performing entities (equal to 40 percent of MFL) Tier 3 – Under-utilised lands (equal to 40 percent of MFL). <p>Did not undertake quantitative data analysis of actual land.</p>
Economic model	Lifts underutilised and severely underutilised land from its current capacity to 90 percent of the regional CV benchmark.	Increases under-performing land from 70 percent of the national farm productivity to 100 percent.
Presentation of results	Presents results as an annualised result – “ultimate end goal”.	<p>Presents results accumulated over evaluation period and present value - “Size of the prize” Measured over an implementation cycle (i.e., evaluation period).</p> <p>Estimates the level of investment required for each new hectare of land.</p>
Key assumptions	<ul style="list-style-type: none"> Property valuers have complete information of each individual land parcel Underutilised land is able to have its capacity lifted and selected land is able to have its land use changed in accordance with its LUC, region, and size. 	<ul style="list-style-type: none"> Under-performing land operates at around 70 percent of full capacity (MAF, 2011) All land that is available for upgrading or conversion can be upgraded or converted No change to land use for LUC 1, 2, and 8 Māori freehold land.
Limitations	<ul style="list-style-type: none"> Does not estimate required investment for land use change or improvement. CVs are not always estimated with complete information. 	<ul style="list-style-type: none"> Uses national-level average outputs to produce regional level results. Estimates current land use.

Detailed methodology applied in this report

This appendix is split into three subsections following the process of our methodology. The three subsections are data gathering, data cleaning and processing, and data analysis.

Data gathering

The first step in our methodology was creating a stock of whenua Māori in Aotearoa New Zealand. Previous research has focused largely only on Māori freehold land as administered under the MLC. In this report this remains our primary dataset, but we expand the current understanding to include more land regarded as whenua Māori.

In addition to expanding the scope of data in this research, the collection and classification of land-based data has improved in the past decade. The accuracy of classification for larger land blocks has improved and this will continue. Specifically, larger land blocks that were previously classified under one land use (e.g., residential) have been more accurately split to represent their actual use (e.g., residential and market gardens).

Māori freehold land - MLC

The national list of Māori freehold land from the MLC was our primary dataset in this research.³²

At the time of building our evidence base, we sourced the latest version available, which was for the 2023 year. This dataset contained details such as block identification (block ID), block name, area, number of owners, and LINZ title reference. This dataset contained around 27,000 records on Māori freehold land blocks for 2023.³³

Land held by PSGEs

Scion Research supplied a specialised dataset of land held by PSGEs. This dataset was complementary and intended to further improve the current evidence base of whenua Māori.

It is important to note that this dataset also had the specific purpose of better understanding the greenhouse gas (GHG) story of Māori entities, as well as expanding the existing definition of whenua Māori in research contexts, which has typically been restricted to only MLC data. Some limitations of this dataset include that it is a snapshot in time, that data on land that is owned by a PSGE but under a different subsidiary is not accessible, and that data for PSGEs that have purchased land using settlement funds is not accessible.

Scion Research created this dataset by manually linking Treaty settlement documents appellations with LINZ Landonline, with a specific focus on commercial redress land. Ultimately, it contained details of around 34,000 blocks of both Māori freehold land (MLC), and land that had been provided to PSGEs as part of Treaty settlements.

This dataset is not a complete picture, and there is opportunity to further expand its scope of records included through further research.

32 Sourced here: <https://www.xn--morilandcourt-wqb.govt.nz/>

33 At the time of sourcing this base data, 2024 MLC data was not available.

For this report, the dataset supplied by Scion Research acted to expand the existing understanding of whenua Māori beyond only MLC data. This is a further step in improving the understanding of whenua Māori and building a broader evidence base.

Both datasets were then combined into a single dataset. All duplicated blocks of land were removed to form the final dataset. This final combined dataset contained around 35,000 land blocks, of which 27,000 were Māori freehold land and 8,000 were land blocks held by PSGEs.

This dataset was provided to CoreLogic, who matched land blocks to property titles using the LINZ title reference numbers provided. These LINZ title reference numbers were used by CoreLogic to match the land to current property titles, and to provide 2013 and 2023 land and capital valuations, along with 2023 land use, hectares, and geographic location. Once this matching process was completed, CoreLogic provided us with both a dataset of the matched land blocks, as well as a geographical shape file which contained the geographical position of these matched land blocks in Aotearoa New Zealand. The geographical shape file could then be used by GIS to provide maps of the matched data, as well as other data variables that could be assigned.

Data cleaning and processing

The next step was to clean and process the dataset supplied by CoreLogic to prepare it for analysis. This involved ensuring no duplicated land blocks were included. Where different land blocks were connected to the same property title, the land use and valuations were separated out between the different land blocks, so that each land block was a distinct and unique piece of land within Aotearoa New Zealand.

We then combined the geographical shape file with LUC geographical shape files from Landcare Research, using ArcMap software, into a single dataset. This dataset was joined onto the final cleaned dataset to enable us to determine, for each land block, the amount of land contained in each of the eight LUC classes. As part of this process, we ensured that the total amount of land contained in each land block was consistent and this enabled us to have a single area total for each land block.

To fill in gaps in the data (e.g., records only having land use for 2023 and not 2013 or CVs not available for 2013), we reviewed and analysed a range of existing data held by BERL to populate identified gaps. This process enabled us to populate a substantial number of Māori freehold blocks to provide land uses and CVs in 2013. To further fill in gaps in the dataset, BERL reviewed all land variables to identify indications of what the land could be used for.

Initially, around 365,000 hectares of land held by PSGEs were classified as 'unknown' in our dataset. By undertaking further investigation of the statutory action associated with the land parcels, we were able to identify that approximately 30 percent appears to cover the CNI lwi Collective forests, with a further seven percent able to be classified as Crown forests, and eight percent able to be classified as state forests.³⁴ On this basis, we converted around 137,600 hectares of initially 'unknown' land held by PSGEs to forestry, improving the evidence base of Māori forestry land and reducing the amount of 'unknown' land.

34 Additionally, seven percent included school lands, reservation land, burial land, and marae. A total of 48 percent (173,451 hectares) of the 365,000 hectares remains as unknown, private land.

For land provided via the Treaty settlement process, often the statutory action undertaken on the land provided the clue as to what the land was likely to be used for. Once any clues were identified, it was a judgement call by BERL, based on the strength of the information, to decide for each block if the land use should be altered from unknown to a likely land use.

This process was largely successful, but some gaps remained. To complete the dataset and fill these gaps, we applied different approaches for each of the three key gaps (land use, capital value in 2013, and capital value in 2023).

For land use, if the land use of the land in 2013 was unknown but the 2023 land use was available, we assumed that the land use was the same between the years. This was also applied for the converse scenario. Any land blocks without land uses in both 2013 and 2023 were recorded as unknown.

To complete the remaining gaps in the CV of blocks in both 2013 and 2023, we undertook the following steps.

1. For land blocks with 2013 and 2023 CVs, we calculated the CV per square metre for each year and the growth ratio for each block between 2013 and 2023.
2. For each land use, we calculated the average CV per square metre in 2013, the average CV per square metre in 2023, the average growth rate from 2013 to 2023, and the rate of change from 2023 to 2013. The rates of change between 2013 and 2023 for each land use enabled us to estimate the 2023 CV for land blocks which only had 2013 CVs, as well as estimating the 2013 CV for land blocks with only 2023 CVs. This allowed us to fill in the gaps in CVs for those land blocks with only one CV rather than both.
3. For the remaining land blocks with no valuations, we estimated the CV in 2013 and 2023 according to their land use. For these land blocks, we used the average CV per square metre in 2013 and 2023 for the corresponding land use and multiplied this by the land area of the block. For land blocks without a land use, or an unknown land use, we assumed a nominal value for the land, to provide a CV for this land block. Otherwise, we would have to assume that this land had a zero valuation.
4. We estimated nominal values based on the CV of vacant land and agriculture land to enable us to estimate the CV per hectare in both 2013 and 2023 for these land blocks. As part of this calculation, we also multiplied the result by 0.3. This decision was based on the premise that while we want these land blocks to have a value to aid in our analysis, and to avoid them having zero value, we do not have information on the value of this land and therefore we do not want to over value these land blocks. Consequently, assigning their value at 30 percent of the value for land blocks with a known land use, with a known CV, seemed reasonable, as it could be assumed that the lack of valuation information meant the land is likely to be more marginal land with little information about it.

At the end of these four steps, we had filled in the data gaps so that all land blocks had a land use (including unknown), and a CV for both 2013 and 2023.

To complete our dataset for our analysis, we added two further variables - the overall climate risk faced by each land block, and whether or not each land block was landlocked or if it could be accessed from the road network.

For the overall climate risk, we were provided data from Te Puni Kōkiri at a statistical area 2 (SA2) level. We mapped onto the final dataset, using ArcMap and the geographical shape file, to combine the land block data with a geographical file detailing the location of all SA2 in Aotearoa New Zealand. This process meant that, for all land blocks, we were able to map and determine which SA2 each land block was in (or mostly located in). Once this was known, we could then assign each land block the relevant overall climate risk for that SA2.

To determine whether land blocks were landlocked or not, we mapped land blocks with a geographic shapefile of all roads in Aotearoa New Zealand. Land blocks that were located within 100 metres of a known road were determined not to be landlocked, whereas blocks located more than 100 meters from their nearest road were considered landlocked. Access easements could not be considered.

Data analysis

For our analysis we firstly developed overall summaries of the dataset, looking at total land area, 2023 CV, and 2013 CV by land use across the dataset. To further enable efficient analysis of the final dataset, we split this dataset into two. The first dataset contained only land blocks with 2023 primary land uses, while the second dataset contained all land blocks with 2023 non-primary land uses. For this split we used the following land uses as being primary land uses:

- Arable farming
- Dairying
- Forestry
- Market gardens and orchards
- Rural industry
- Specialist livestock
- Stock finishing
- Store livestock
- Multi use within rural industry.

The next step was to determine the effective utilisation of each primary land block compared to regional benchmarks, as well as to determine the current direct output, GDP, and employment generated.

Determining utilisation

To understand the effective utilisation of primary land blocks, we compared the CV per hectare of each block to the benchmark CV per hectare by land use and region. We assumed that this comparison would provide a fair representation of their utilisation compared to using a national level benchmark for each primary land use.³⁵ A regional benchmark provides a more accurate picture of differences from region to region.

The categorisation that we used to allocated land is presented in Table 21.

35 CoreLogic provided the regional benchmark data by land use and region based on an average CV of all land in the region with the same land use.

Table 21 Categorisation of the effective utilisation of whenua Māori

Utilisation category	Description	Variance from benchmark
Severely underutilised	Land in this group has a CV per hectare that is below the regional benchmark by at least 50 percent	<50%
Underutilised	Land in this group holds a CV per hectare that is between 50 and is less than 90 percent below the regional benchmark	≥50% and <90%
Utilised	Land in this group holds a CV per hectare that falls within 90 percent to 115 percent of the regional benchmark	≥90% and ≤115%
Well utilised	Land in this group holds a CV per hectare that exceeds the regional benchmark by greater than 115 percent	>115%

Source: BERL analysis

Determining land use change for the scenarios

For our second model, to determine the appropriate land use to change vacant and lifestyle Māori freehold land into, we undertook the following process:

1. For each separate rohe, we determined the total number of Māori freehold land blocks by each of the nine separate primary land uses
2. Within each rohe and land use, we split the Māori freehold land blocks into ten land sizes (i.e., under 3ha, 3ha to 10ha, 10ha to 25ha, 25ha to 50ha, 50ha to 100ha, 100ha to 200ha, 200ha to 500ha, 500ha to 1,000ha, and more than 1,000ha)
3. We then further split these categories into the number of Māori freehold blocks by predominant (LUC) class
4. Based on this information for each rohe, land size category, and LUC, we determined the main or predominant primary land use. For example, for Te Moana a Toi-Waiariki, a land block of 10 to 25 hectares of LUC class one land would have a land use of market gardens and orchards, while for the same rohe, a land block of 50ha to 100ha and LUC class seven, would have land use of forestry.

Therefore, each lifestyle and vacant land block that met the modelling scenario conditions was reassigned a new land use based on which rohe it was located in, its total land size category, and its predominant LUC class.

Calculating economic activity created

Our approach measures economic activity created by output, GDP, and employment (as measured by FTEs).

To determine the overall economic contribution of each primary land block, we multiplied the overall CV of each land block by a gross output to capital ratio for each land use.³⁶ This enabled us to estimate for each land block the gross output in 2013 and 2023, based on its CV.

36 Further explanation and rationale of the reasoning behind this is provided in the following section, including discussion about using valuations to determine annual value of production or gross output.

With the gross output or annual value of production of each land block estimated, we then used the New Zealand national input-output (IO) table published by Stats NZ to estimate the gross output (annual value) of production to GDP ratio, as well as the gross output (annual value) of production to employment (FTEs) ratio for each land use, by assigning each land use to its most relevant IO industry. For example, the dairy land use is matched to dairy cattle farming industry, market gardens and orchards land use is matched to the horticulture and fruit growing industry, and the forestry land use is matched to the forestry and logging industry.

This provides us with a basis to undertake hypothetical scenarios exploring how economic contribution of existing land blocks could be improved if their productive capacity was lifted.

Specifically, we designed hypothetical scenarios that modelled the potential lift in economic activity if each land block that was categorised as either severely underutilised or underutilised was lifted to 90 percent of the regional benchmark, while all remaining land stayed as is.³⁷

To put it simply, we modelled lifting all severely underutilised and underutilised land up to the utilised category, and then estimating the economic activity created after this process. This was determined as the economic opportunity. A key assumption in this scenario is that all land categorised as severely underutilised or underutilised has the potential to be lifted into a more productive capacity. We recognise that there are multiple factors that contribute to this, including regulatory, environmental, and economic.

Using CVs to determine annual value of production

The relationship between the CV of the land and its improvements, and the expected economic returns from production, forms a foundational assumption in many resource economics and land valuation models. Property valuers commonly estimate the annual production value of a parcel of land and use this to calculate the net present value (NPV), which reflects the productive value of the land and its improvements under given assumptions. Depending on its actual application, the NPV can be called the productive value or the expected value of the land and its improvements.

Productive valuations are checked against recent local market values of land of a similar type. These checks determine the CV of that parcel of land at that location and at that point in time. This process is used by property valuers to periodically obtain the CV of land in Aotearoa New Zealand for rating and other purposes. The advantage of this valuation method is that a sound value can be obtained without having to sell the land. The method has been widely used on Crown Forest licensed land to determine the rental that the Crown Forestry Rental Trust (and Māori owners) should receive from the licensee forest companies for the use of this land. The rental is specified in legislation as a percentage of the land value and is periodically reviewed. This review requires negotiation of accepted valuations among the respective parties.³⁸

Property valuers must consider a broad range of variables when determining the fair value of a parcel of land. The LINZ (2011) rating revaluations handbook states that matters to consider.

37 For discussion of alternative measures of valuation of this Crown forest licensed land, see Dickson et al, 2009.

38 For discussion of alternative measures of valuation of this Crown forest licensed land, see Dickson et al, 2009.



Determining GDP and employment

Our estimation of economic contribution, expressed as GDP and the employment derived from whenua Māori, is also based on resource economic theory regarding the relationship between the CV of the land and its improvements, and the value of the production from the land.

Resource economic theory argues that land value indicates the potential productivity of the land. However, we want to estimate the production from the enterprise on that land and so we need to consider the land value and the capital improvements. In this situation, the land value and the value of the capital improvements equals the CV. Another pragmatic aspect is that data on sales values are for the CV, not the land value.

As part of the data collation exercise, Māori land blocks were categorised into nine primary land use categories. For each land use category, we took the CV as the level of resource applied to production. The value of production derived from the Māori land blocks in the various land use categories was then estimated by multiplying the CV by the national capital-to-output ratio for that sector. These ratios were obtained from national IO tables and show the amount of output generated for each \$1 million of capital invested in an industry.

The value of output is an economic term for the value of sales. Within the value of sales, there is a component of value-added, which is the same as GDP. Again, there is a GDP-to-output ratio for each industry. The value of the output multiplied by this ratio provides an estimate of the GDP derived from the CV of Māori land in each land-use category.

Using the output values, a similar process was then used to estimate the employment required to generate the production from a block of land. Again, using national IO tables, we know the direct employment required in each industry to generate each \$1 million of output. We then applied these ratios to the value of output from each land-use category and obtained an estimate of the scale of the employment generated. These values are approximations; however, when they are applied to the total CV obtained from a large number of land blocks across a broad spectrum of land production performance, they are a reasonable estimate of the total value of production.

Appendix B

Land use and capability description

Table 22 Description of land uses

Land use	Example
Transport	Includes air, rail, road, and water transport
Industrial	Includes food processing and food storage, manufacturing, warehousing, etc
Commercial	Includes accommodation, cinema, rest homes, schools, offices, parking buildings, retail, service stations, etc
Residential	Includes apartments, dwelling houses, home units, etc.
Lifestyle	Small rural properties that are primarily used for residential purposes on a larger section of land and the main source of income is derived from the farm
Utility services	Includes civic (i.e., storm water, sewerage), energy (i.e., electricity and gas networks), post-boxes, rail network corridors, telecommunication networks, etc
Community services	Includes cemeteries, education, defence, halls, religious, medical, etc
Other	Includes other uses not covered by any alternative category in this table, generally non-economic uses of a government, civic, or recreational nature
Recreational	Includes active indoor and outdoor, entertainment, passive indoor and outdoor, etc
Rural industry	Land used for industrial activities that support rural production or are based on rural resources. This can include quarries, sawmills, and agricultural machinery
Arable farming	Includes cash cropping land, generally farmed with some stock.
Dairying	Includes land used for dairy farming for milk product supply
Forestry	Includes commercial forestry whereby revenue is generated from tree harvest
Market gardens and orchards	Includes glasshouses, pip fruit, market garden, berry fruit, vineyard, stone fruit, etc
Specialist livestock	Includes aquaculture, deer farming, horse studs and training operations, poultry, pigs, etc
Stock finishing	Includes finishing land suitable for livestock, and breeding
Store livestock	Includes grazing land for livestock
Multi use within rural industry	Includes primary productive land with any number of multiple uses that are difficult to pinpoint
Vacant	Empty or unused plot of land. Vacant land can be bare or unimproved and is often categorised under lifestyle and residential primary land use
Unknown	Unidentified land use

Land Use Capability (LUC) classes

The LUC system categorises land into eight classes according to its long-term capability to sustain one or more productive uses based on physical limitations and site-specific management needs (Our Environment, 2023).

The productive capacity of land depends on physical qualities, soil, and environment. Limitations considered in the LUC include susceptibility to erosion, steepness of slope, climate, susceptibility to flooding, liability to wetness or drought, salinity, and depth, texture, structure and nutrient supply of the soil. Table 23 provides a description of land assessed in each LUC class.

Table 23 LUC class descriptions

LUC	Description
Class 1	Arable. Most versatile multiple-use land, minimal limitations, highly suitable for cropping, viticulture, berry fruit, pastoralism, tree crops, and forestry
Class 2	Arable. Very good multiple-use land, slight limitations, suitable for cropping, viticulture, berry fruit, pastoralism, tree crops, and forestry
Class 3	Arable. Moderate limitations restricting crop types and intensity of cultivation, suitable for cropping, viticulture, berry fruit., pastoralism, tree crops, and forestry
Class 4	Arable. Significant limitations for arable use or cultivation, very limited crop types, suitable for occasional cropping, pastoralism, tree crops, and forestry. Some class 4 is also suitable for viticulture and berry fruit
Class 5	Non-arable. Highly productive pastoral land, not suitable for crops but only slight limitations to pastoral, viticulture, tree crops, and forestry
Class 6	Non-arable. Slight to moderate limitations to pastoral use, suitable for pasture, tree crops, and forestry
Class 7	Non-arable. Moderate to severe limitations to pastoral use. High-risk land requiring active management to achieve sustainable production. Can be suited to grazing with intensive soil conservation measures but more suited to forestry
Class 8	Very severe to extreme limitations to all productive uses, including arable, pastoral, or commercial forestry. Suitable for erosion control, water management, and conservation

Source: BERL

Appendix C

Literature scan

The following appendix provides an overview of each resource included in the completed broad literature scan.

Table 24 Literature scan table

Title	Reference	Overview
Analysis of drivers and barriers to land use change	AgFirst, 2017	<p>This report explores the drivers and barriers to land-use change in Aotearoa New Zealand as they currently exist, as well as potential drivers and barriers starting to emerge.</p> <p>A range of broad factors that can act as both drivers and barriers include biophysical factors (e.g., soil type, climate), economic factors (e.g., relative profitability, markets, land tenure), technological change, societal pressures (and licence to farm), and personal factors. Such factors are recognised as being complex and often interacting. In particular, economic factors are identified as being the most powerful in driving land use change decisions.</p> <p>The report also determines the primary reasons for landowners not changing land use, intensifying, or increasing the size of the farm. This includes a lifestyle decision, anticipating retirement soon, or lack of financing.</p>
Land-cover choices and governance structures: lessons from Māori	Cortes-Acosta, 2020	<p>This dissertation investigates how Māori land governance structures, particularly ahu whenua trusts and Māori incorporations, influence land-use decisions and their impact on greenhouse gas emissions in Aotearoa New Zealand. Using a mixed-methods approach, the research examines case studies, econometric models, and simulations to explore transitions between forestry, pasture, and scrub. Findings reveal that these governance structures improve decision making by balancing cultural, social, and economic objectives while enhancing environmental outcomes. Māori freehold land with governance structures demonstrated a preference for forestry, which increased carbon sequestration and reduced GHG emissions. The research highlights the potential for Māori frameworks to inform climate policies.</p>
Incorporating Māori values into land management decision tools	S.K. Crow, & et al., 2020	<p>This research article explores the integration of Māori cultural values into land management decision tools, focusing on the holistic "ki uta ki tai" framework that views ecosystems and ecosystem management from mountains to the sea. Using data from Canterbury catchments between 2001 and 2012, the study links land cover changes to two Māori values: cultural land use and overall health. The findings reveal a decline in native vegetation and an increase in exotic pastures, corresponding to reduced cultural health scores. This framework provides a means for Māori to evaluate environmental impacts on their cultural heritage, enabling proactive participation in resource management and policy development.</p>

Review of western farming philosophies and how to learn from mātauranga Māori to develop trans-cultural farming systems	Dominati, & et al., 2023	This report reviews western farming philosophies and explores how mātauranga Māori can inform the development of trans-cultural farming systems. It examines the historical and current influences on Aotearoa New Zealand's agricultural systems, highlighting their failure to meet sustainability goals, particularly Māori cultural goals. The report also discusses how the agricultural science community has addressed past mistakes to ensure a more sustainable future. This collaborative effort aims to integrate Māori values with modern agricultural practices for better outcomes.
Unlocking the potential of Māori land: A kaupapa Māori approach to using and developing integrated knowledge, models and tools	Harmsworth, 2017	This seminar emphasises a kaupapa Māori approach to land development. It highlights the importance of integrating Māori knowledge, values, and governance with modern tools and models. The seminar discusses the historical and current challenges of Māori land ownership, the need for better data and decision-making tools, and the potential for economic and cultural benefits through improved land use and management strategies.
Māori values for land use planning	Harmsworth, 1997	This research article explores how Māori values can be incorporated into land-use planning frameworks, emphasising a holistic approach rooted in mātauranga Māori (traditional knowledge). It discusses integrating Māori cultural, spiritual, and physical values using geographic information systems (GIS) to create layered datasets for planning. Through discussions with the representatives, a definition of "Māori values" was developed as "any natural resource, area, place, or thing (tangible or intangible) which is of physical, economic, social, cultural, historic, and/or spiritual significance to tangata whenua." A number of major environmental and cultural issues were highlighted as impacting Māori values, from water pollution, erosion, and the management of native forests to the maintenance of wāhi tapu and discrete sites of special significance. The study highlights the challenges posed by fragmented data, confidentiality concerns, and variable consultation practices. It stresses the need for robust systems to support iwi and hapū participation in environmental decision making. By aligning Māori principles with legislative requirements, the framework aims to enhance resource management while preserving Māori cultural heritage.
Climate change business opportunities for Māori land and Māori organisations	Harmsworth, & et al., 2010	This report explores how Māori landowners can leverage climate change adaptation and mitigation for economic benefits. It identifies key economic opportunities such as carbon forestry sinks, biochar, renewable energy, and sustainable wood production. Emphasised in the report is the importance of understanding Māori land characteristics, building capability, and accessing research and innovation. Critical success factors for Māori land include eliminating uncertainties, having strong governance, and forming partnerships. The research highlighted the potential for significant economic gains and environmental benefits, suggesting tailored government policies and increased Māori access to research funding to fully realise these benefits.

Incorporating Māori values into land management decision tools	S.K. Crow, & et al., 2020	This research article explores the integration of Māori cultural values into land management decision tools, focusing on the holistic "ki uta ki tai" framework that views ecosystems and ecosystem management from mountains to the sea. Using data from Canterbury catchments between 2001 and 2012, the study links land cover changes to two Māori values: cultural land use and overall health. The findings reveal a decline in native vegetation and an increase in exotic pastures, corresponding to reduced cultural health scores. This framework provides a means for Māori to evaluate environmental impacts on their cultural heritage, enabling proactive participation in resource management and policy development.
Land use change report	Journeaux, & et al., 2017	This report analyses drivers and barriers to land use change in Aotearoa New Zealand, focusing on economic, biophysical, and regulatory factors. It highlights the significant role of profitability, access to capital, and infrastructure in driving land-use decisions. The report also discusses the impact of environmental regulations, such as nitrogen discharge limits and water allocation, on land use. It emphasises the complexity of land-use optimisation and the need for flexible policies to support sustainable land management.
Islands of Hope: Indigenous Resource Management in a Changing Pacific Chapter 13: Collective Land Tenure Systems and Greenhouse Gas Mitigation among Māori Farmers in Aotearoa New Zealand	Kingi, & et al., 2016	This chapter explores the relationship between collective land tenure systems and investment in strategies to reduce environmental impact among Māori farmers in Aotearoa New Zealand. It highlights the evolution of Māori land governance, the impact of government policies on land use, and the cultural values influencing Māori landowners. The study profiles 29 Māori farming entities, examining their GHG emissions and the potential for mitigation through sustainable practices, emphasising the importance of integrating cultural values with environmental and economic goals.
Review of Te Ture Whenua Māori Act 1993 – Te Ture Whenua Māori Bill – Ownership interests in Māori freehold land	Love, 2016	This article reviews the Te Ture Whenua Māori Act 1993 and the proposed Te Ture Whenua Māori Bill, focusing on ownership interests in Māori freehold land. It discusses the new collective ownership model, the role of whānau trusts, and the decision-making processes for landowners. The article highlights concerns raised during consultations and by the Waitangi Tribunal, particularly regarding the complexity and potential for disenfranchisement of some landowners under the new bill.
Māori Land: A Strategy for Overcoming Constraints on Development	Reid, 2011	This thesis was developed through long-term action research with seven case-study groups of Māori landowners with strong development aspirations for either unutilised or underutilised land. An extensive literature review in the thesis identified eight platforms for Māori land development, including control, governance, management, leadership, skills, collective action, innovation, and legislation.
Māori agribusinesses: the whakapapa network for success	Rout, & et al., 2020	This article examines the 20 percent of Māori land incorporations and trusts classified as high performing, analysing factors that contributed to their success and identifying ongoing constraints. Through thematic analysis of literature and interviews, it explores five key themes: legal framework (whakaritenga), finance (huamoni), capability (matatau), relationships (whakawhanaungatanga), and paths to market (whakatairanga). While the findings align with industry best practices, the study also highlights the potential role of whakapapa networks – formal or informal Māori collectives – in driving success within these entities.

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Appendix E Rohe disaggregation

Rohe	Te Puni Kōkiri region	Māori Land Court area	Local government boundaries
Te Tai Tokerau	Te Tai Tokerau	Te Taitokerau	Far North District Kaipara District Whangarei District
Tāmaki Makaurau	Tāmaki Makaurau	Te Taitokerau	Auckland City
Waikato	Waikato-Waiariki	Waikato-Maniapoto	Hamilton City Hauraki District Matamata-Piako District Ōtorohanga District South Waikato District Taupō District Thames-Coromandel District Waikato District Waipa District Waitomo District
Te Moana a Toi-Waiariki	Waikato-Waiariki	Waiariki	Kawerau District Ōpōtiki District Rotorua District Tauranga City Western Bay of Plenty District Whakatāne District
Tairāwhiti	Ikaroa-Rāwhiti	Tairāwhiti	Gisborne District Chatham Islands District
Tākitimu	Ikaroa-Rāwhiti	Tākitimu	Central Hawke's Bay District Hastings District Napier City Wairoa District
Kurahaupō	Ikaroa-Rāwhiti	Tākitimu	Carterton District Masterton District South Wairarapa District

Te Tai Hauāuru	Te Tai Hauāuru	Aotea	Horowhenua District Manawatu District New Plymouth District Palmerston North City Rangitikei District Ruapehu District South Taranaki District Stratford District Whanganui District
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Te Whanganui ā Tara	Te Tai Hauāuru	Aotea	Hutt City Kāpiti Coast District Porirua City Upper Hutt City Wellington City
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Te Tau Ihu	Te Tai Hauāuru	Te Waipounamu	Marlborough District Nelson City Tasman District
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Waitaha	Te Waipounamu	Te Waipounamu	Ashburton District Buller District Central Otago District Christchurch City Clutha District Dunedin City Gore District Grey District Hurunui District Invercargill City Kaikoura District Mackenzie District Queenstown-Lakes District Selwyn District Southland District Timaru District Waimakariri District Waimate District Waitaki District Westland District
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Appendix F

Glossary

Table 25 Glossary

Land use	Example
Capital value (CV)	Estimate of the potential selling price at the time the valuation was conducted.
Full-time Equivalents (FTEs)	A unit to measure employment where one FTE equals one full-time employee, and 0.5 FTEs equals one part-time employee.
Gross Domestic Product (GDP)	Measure of the value-add created during production of goods and services within a country.
Input-output (IO) table	Economic model to measure transactions and interconnections between different sectors of the economy. IO tables are often used to show how the output of one industry is used as an input by another industry.
Land held by PSGEs	A subset of land held by PSGEs that was returned as commercial or cultural redress in Treaty negotiations. It is not a complete picture.
Land Value (LV)	Estimation of the price that would be paid for the bare land at its valuation date.
Māori freehold land	Land where Māori customary interests have been converted to freehold title by the Māori Land Court, or its predecessors, by a freehold order.
Māori Incorporations	Legal entities created by Māori landowners to manage and develop their land collectively.
Net Present Value (NPV)	A financial metric used to evaluate the profitability of an investment or project by calculating the difference between the present value of cash inflows (revenues) and the present value of cash outflows (costs), discounted over time.
Non-primary land	Land that is utilised for urban development, infrastructure, public services, and recreation.
Output	Total value of all goods and services produced within an economy.
Post-Settlement Governance Entity (PSGE)	Legal entities required to be established after concluding Treaty settlement negotiations and responsible for managing settlement redress on behalf of iwi and hapū.
Primary land	Land that is utilised for primary industry purposes, such as cropping, horticulture, forestry, and pastoral uses.
Rohe	Region.
Te Ōhanga Māori	The Māori economy.
Value-add	Enhancing a product or service (e.g., inputs) by increasing its value, often through additional features, processing, or improvements to create outputs for consumers.
Store livestock	Includes grazing land for livestock
Multi use within rural industry	Includes primary productive land with any number of multiple uses that are difficult to pinpoint
Vacant	Empty or unused plot of land. Vacant land can be bare or unimproved and is often categorised under lifestyle and residential primary land use
Unknown	Unidentified land use

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